MENTAL DISTRESS, NEED AND BARRIERS TO RECEIVING MENTAL HEALTHCARE, EXPLANATORY MODELS AND FEASIBILITY OF INTERPERSONAL PSYCHOTHERAPY AMONG WOLAITA SODO UNIVERSITY STUDENTS

By

ASSEGID NEGASH

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Mental Distress, Need and Barriers to Receiving Professional Mental Healthcare, Explanatory Models and Feasibility of Interpersonal Psychotherapy among Wolaita Sodo University Students

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By

Assegid Negash (MA)

Supervisors: Mesfin Araya (MD, PhD, Professor)

Matloob Ahmed Khan (PhD)

Collaborators: Dawit Wondimagegn (MD)

Girmay Medhin (PhD)

Clare Pain (MD)

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BY: Assegid Negash Tefera

SCHOOLS OF MEDICINE AND PUBLIC HEALTH, ADDIS ABABA UNIVERSITY

APPROVED BY THE EXAMINING BOARD

Professor Solomon Teferra	12/14/2021
Chairman, Examining Board	Date
Prof. Mesfin Araya	12/14/2021
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Dr. Matloob Khan	12/14/2021
Supervisor (Secondary)	
Dr. Lena Verdeli	12/14/2021
External Examiner	
Prof. Belay Tefera	12/14/2021
Internal Examiner	

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LIST OF ORIGINAL PAPERS

This PhD dissertation thesis has three sub-studies listed below, where all of them were published on reputable journals.

1. Negash A, Khan MA, Medhin G, Wondimagegn D, Araya M. Mental distress, perceived need, and barriers to receive professional mental health care among university students in Ethiopia. BMC psychiatry. 2020 Dec; 20(1):1-5.

2. Negash A, Khan MA, Medhin G, Wondimagegn D, Clare P, Araya M. Explanatory models of mental distress among university students in Ethiopia. Psychology research and behavior management. 2021 Nov; 14: 1901-1913.

3. Negash A, Khan MA, Medhin G, Wondimagegn D, Pain C, Araya M. Feasibility and acceptability of brief individual interpersonal psychotherapy among university students with mental distress in Ethiopia. BMC psychology. 2021 Dec; 9(1):1-4.

ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
ASS	Adapted Stigma Scale
APA	American Psychological Association
BACE	Barriers to Access to Care Evaluation
BAI	Beck Anxiety Inventory
BCC	Barriers to Care Checklist
BDI-II	Beck Depression Inventory Second Edition
BASH-R	Barrier to Adolescent Seeking Help-Revised
BHSQ	Barriers to Healthcare Seeking Questionnaire
CBQ	Conflict Behavior Questionnaire
CDRS-R	Children's Depression Rating Scale-Revised
CES-D	Centre for Epidemiological Studies Short Depression Scale
CGAS	Children's Global Assessment Scale
CIDI	Composite International Diagnostic Interview
CMDs	Common Mental Disorders
COVID-19	Coronavirus
CSQ	Client Satisfaction Questionnaire
DASS	Depression Anxiety Stress Scale
DSM-5	Diagnostic and Statistical Manual of Mental Disorders Version-5
ECCI	Elliot Client Change Interview
EPDS	Edinburgh Postnatal Depression Scale
ECR-R	Experiences in Close Relationships-Revised
ETB	Ethiopian Birr
GAD-7	Generalized Anxiety Disorder Scale
GHQ-12	General Health Questionnaire
HADS	Hospital Anxiety and Depression Scale
HIV	Human Immunodeficiency Virus
HRSD	Hamilton Rating Scale for Depression
ICD-10	International Classification of Diseases 10th edition

IIP	Inventory of Interpersonal Problems
IPT	Interpersonal Psychotherapy
IPT-E	Interpersonal Psychotherapy adapted for Ethiopia
IRB	Institutional Review Board
K10	Kessler Psychological Distress Scale
K-SADS-E	Schedule for Affective Disorders and Schizophrenia for School Age Children - Epidemiological version, 5th edition
LMICs	Low- and Middle- Income Countries
mhGAP	mental health Gap Action Programme
PDDS	Perceived Devaluation and Discrimination Scale
PHQ-9	Patient Health Questionnaire
PTSD	Post-Traumatic Stress Disorder
RCT	Randomized Controlled Trial
SAS	Social Adjustment Scale
SCARED	Screen for Child Anxiety Related Disorders
SCAS	Spence Children's Anxiety Scale
SCL-90-R	Symptoms Checklist-90- Revised
SEMI	Short Explanatory Model Interview
SF	Short Form Health Survey
SNNPR	Southern Nations, Nationalities, and Peoples' Region
SPSS	Statistical Packages for Social Sciences
SRQ	Self-Reported Questionnaire
SSSHS	Self-Stigma of Seeking Help Scale
TAAPP	Toronto Addis Ababa Psychiatry Project
TTF	Treatment Tracking Form
YP-CORE	Young Person's Clinical Outcomes in Routine Evaluation
WHO	World Health Organization
WHODAS-2.0	World Health Organization Disability Assessment Scale
WSU	Wolaita Sodo University
Zung SAS	Zung Self-rating Anxiety Scale
Zung SDS	Zung Self-rating Depression scale

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ABSTRACT

Background: Globally, the prevalence of mental distress (anxiety and depression) is high in the general population. However, the prevalence of anxiety and depressive symptoms is even higher among university students, especially in low- and middle-income countries (LMICs). However, the majority (90%) of people experiencing distress, including university students in LMICs, do not sufficiently receive evidence-based psychological interventions, because of stigma, instrumental and attitudinal related barriers. There is limited evidence on perceived need and barriers to receiving mental healthcare. Barriers to mental health services are also associated with the explanatory models individuals have with regard to their mental distress. Socio-culturally determined processes account for how individuals assign belief and attribute meaning to health, illness and suffering, which results in causal attributions and expectations of suitable treatment and related outcome. Little is known about how university students in Ethiopia conceptualize their mental distress, perceive their symptoms and their causes, or how they understand the severity, onset, treatment preference, impacts and coping strategies for their distress. The lack of published evidence on the feasibility and acceptability of psychological interventions for students with mental distress provides an opportunity to explore culturally adapted psychological therapy for university students in LMICs who have high levels mental distress and accompanying dysfunction.

Objectives: The purpose of this study is to first assess the prevalence of mental distress, the need for professional mental healthcare, and barriers to the delivery of services to affected students. Second, to explore the explanatory models for mental distress and third, to evaluate the feasibility of Interpersonal Psychotherapy adapted for Ethiopia (IPT-E) among undergraduate students in Wolaita Sodo University.

Methods: Explanatory sequential design was used for this dissertation thesis. **In study one**: A cross-sectional research design with multi-stage sampling technique was used to recruit 1135 undergraduate students. Symptoms of mental distress were screened using the Self-Reporting Questionnaire (SRQ) and a score of eight and above was used to identify positive cases. The perceived need for professional mental healthcare was assessed using the ‘Yes or No’ response item, and barriers to receiving mental healthcare were assessed using Barriers to Access to Care

Evaluation (BACE). Descriptive statistics (percentage, frequency, mean and standard deviation) were employed to summarize the demographic characteristics of the participants and to identify commonly reported barriers to receive mental health services. Pearson chi-square test was used to examine the association between the demographic variables with mental healthcare need. It was also used to investigate the association between the demographic variables with the five most commonly reported barriers to receive mental health services. The association of demographic variables with the total mean scores of BACE-III sub-scales was modeled using multiple linear regression. Besides, the association between demographic factors and mental distress was analyzed using logistic regression. **In study two**: A phenomenological research design was employed and data were collected from 21 participants using locally adapted Short Explanatory Model Interview. Frame-work analysis was used with the assistance of open code software 4.02. Conducting studies one and two using these methods provided inputs for the interventional study three; since there was no prior feasibility study of Ethiopian Interpersonal Psychotherapy (IPT-E) for students in Ethiopia.

Study three: A quasi-experimental single-group pre-post-test study design was used for 24 participants. Client Satisfaction Questionnaire was used to measure the acceptability of the IPT-E. World Health Organization Disability Assessment Scale and SRQ tools were used to assess functional impairment and mental distress, respectively. As indicators of the feasibility of IPT-E, consent, treatment completion, the mean number of sessions attended, and attrition were analyzed, whereas the treatment satisfaction was an indicator of acceptability of IPT-E. Descriptive statistics were used to summarize the demographic variables, feasibility and acceptability of IPT-E. Changes from pre- to post-tests of mental distress and functioning were analyzed using paired t-test and Wilcoxon signed-rank tests. The quantitative data were analyzed using Statistical Packages for the Social Sciences version 20, whereas the qualitative data analysis was assisted by open code software 4.02.

Results: The prevalence of mental distress was 34.6%. Most of the students experienced their mental distress as mixed symptoms and they labeled them as anxiety or stress. The onset of mental distress ranged from six months to four years during their University stay. The most commonly reported causal explanations were psychosocial factors. Students perceived that their psychological distress was severe so that it mainly affected their mind, which in turn negatively

impacted their interactions with others, their academic result, their emotions, and their motivation to study. Almost all of the students received care from alternative sources, although they wanted to receive care from mental health professionals. The need for professional mental health service was 70.5%. The top five reported barriers to receiving this service were: (a) thinking the problem would get better with no intervention, (b) being unsure where to go to get professional help, (c) wanting to solve the problem without intervention, (d) denying a mental health problem existed and (e) preferring to get alternative forms of mental care. IPT-E was feasible, where rates of consent accounted for 100%, completion rate 92.31%, attrition rate 7.69% and the mean number of sessions attended was 8. The total mean score of treatment satisfaction was 27.83. After the delivery of IPT-E, symptoms of mental distress had significantly decreased (M = 14, SD = 4 to M = 3, SD = 3, P = 0.001) and functioning had improved (M = 34, SD = 11 to M = 23, SD = 8, P = 0.001).

Conclusions: The high prevalence of mental distress, the paucity of professional mental healthcare and the report of barriers to access it among undergraduate students is a call to address this disparity. IPT-E was feasible and acceptable and it showed promising results in decreasing symptoms of mental distress and improving functioning among university students. Therefore, scaling-up this intervention at the national level and implementing it in higher education institutions in Ethiopia is an important consideration. This would take into account the explanatory models of students with regard to their psychological distress and potentially address the burden of mental distress and reduce the mental health treatment gap among university students.

Recommendations: Based on the study findings, these are the recommendations:

- The prevalence of mental distress and mental health treatment gap are alarmingly high in the university settings; therefore, policy makers and higher officials in the universities should reconsider the access to psychological services for students with mental distress.
- Mental health providers in universities should ensure mental health services are accessible to students and advertise these services for better utilization.
- Developing preventive mental health education strategies that enhance mental health literacy and knowledge is essential to address the high prevalence of mental distress

along with creating conducive environment that promote and sustain positive mental health for every university student.

- Exploring the explanatory models for mental distress among university students is an important part of understanding the students' needs for mental healthcare and the successful implemention of locally feasible and acceptable evidence-based mental health interventions.
- Future randomized controlled trial of IPT-E along with longer follow-up period would secure the promising mental health outcomes of IPT-E to further scale-up the service in similar settings.

Keywords: Mental distress, need, barrier, professional mental healthcare, explanatory models, feasibility, acceptability, Interpersonal Psychotherapy adapted for Ethiopia, university students

1. INTRODUCTION

1.1. Background

Mental distress commonly accompanies mixed strong emotions such as feeling sad, worried, tense or angry that do not conform to criteria for a single psychiatric disorder (1), but can accompany anxiety, depression, and somatic symptom disorders collectively called Common Mental Disorders (CMDs). They are highly prevalent across the world. For example, according to the World Health Organization [WHO] report, over 300 million (4.4%) and 264 million (3.6%) of the total world population are estimated to suffer from anxiety and depression, respectively (2). The prevalence of these disorders is higher among university students as compared with the general population and has increased over the past few years (3). Anxiety and depression are prevalent among students both in high-income and low- and middle-income countries (LMICs). Systematic reviews reported that the prevalence of depression symptoms among university students in the United States was 22% (4), 28.4% in China (5) and 24.4% in LMICs (6). Furthermore, a study in China reported that the prevalence of depression and anxiety was 68.5% and 54.4%, respectively (7). A recent study from North Thailand University reported that the prevalence of CMDs among students was 82% (8). Similarly, studies from Ethiopian universities reported that the prevalence of mental distress is substantially high. For example, the pooled prevalence of mental distress among university students is 37.73%.

University students face difficulty to conceptualize symptoms of mental distress as a mental illness (9). Particularly, students find difficult to recognize symptoms of anxiety as a mental illness compared to depression, which they more readily concede as distressing. Students perceive symptoms of anxiety such as feeling nervous and apprehension as normal and to be expected in day-to-day activities (10). However, they recognize symptoms of depression such as sleeping difficulties, aggression, headaches, poor concentration, feeling sad, feeling down or lonely, and hopeless as different to symptoms of anxiety (10-13). This can be associated with the explanatory models of mental distress students have.

Explanatory models describe the way students with mental distress conceptualize their distress, explanations they give for perceived causes, the modes of expression of distress, and how they rate the severity of the problem, its onset, accessing help, how they cope, their treatment

preferences and the adverse consequences of their distress (14). The explanatory models of mental distress vary from culture to culture, because culture determines the way people perceive and interpret their world (15). Previous study has found that students world-wide do not conceptualize mental distress based on biomedical models, rather cultural beliefs and social contexts have a great role in the subjective experiences of mental distress (16). Hence, the complex cultural explanations available to students are inevitable and influence how they understand mental distress and its causes (16).

Previous studies have identified factors associated with mental distress among university students. These factors include: exposure to the new environment; academic pressure; financial difficulties (17); no religious affiliation (3); being female; low social support; conflict with friends and instructors; family history of mental illness; lack of interest to the field of study; substance use (18); interpersonal difficulty with family (19); persistent grief due to the death of a close person (20); negative life events (21); decreased grade results (22) and worrying about future career (19, 23).

Despite the increasing number of universities and a growing number of students enrolled in LMICs, the provision of mental health services remains underdeveloped, largely because there are insufficiently trained therapists/counselors (24). As a result, the majority of the students in LMICs universities do not receive professional mental healthcare (25). However, a significant number of these students in need do receive support from informal sources such as friends, family, traditional healers, and religious leaders (25). In so far, as the prevalence and burden of mental distress are rapidly increasing among students, universities are advised to ensure adequate student counseling services to prevent and treat students for distress associated with mental health problems (26). There are several barriers that hinder students with mental distress from receiving professional mental health services. Among these: (a) receiving help from friends or family; (b) preferring to manage mental illness by self; (c) normalizing mental distress; (d) thinking that mental illness would get better by itself; (e) being unaware of the existence of professional mental health services; (f) fear of stigma and skepticism about treatment effectiveness; and (g) concerns about privacy and denying mental illness (25, 27-29).

Increased severity of mental distress with lack of access to professional mental healthcare is associated with an adverse effect on students' academic achievement, physical health, emotions,

self-esteem, social relationships, cognitive performance, and their overall quality of life. Evidence showed that students with mental distress who did not receive timely mental healthcare experienced low academic performance (30), suicidal thoughts and attempts (31). A previous study has reported that college students who experienced depression and sleep disturbance in America had a high burden of comorbid anxiety and poor mental and physical functioning (32). The burden and functional impairment of mental distress are more severe in LMICs university students (17), where the accessibility of psychological interventions is limited.

Psychological interventions that are recommended by the WHO mental health gap action program (mhGAP) intervention guide are effective in treating mental distress in LMICs. For example, evidence has shown that psychological interventions delivered by non-specialists (no prior mental health training) have moderate to strong effects in reducing the burden of mental distress with low cost (33). This review also reported that half of the psychological treatments delivered in the community or school settings are for less than ten sessions and individual-based treatment that lasted for 2-3 months. Psychological therapies result in fewer relapses and premature treatment termination compared to pharmacotherapy for students with depression (34). Of the potential talk therapies, Interpersonal Psychotherapy (IPT) is effective in resolving symptoms of mental distress and improving functioning and has been used in primary health centers in LMICs, including Kenya (35), South Africa (36)**,** Egypt (37), and Ethiopia (38). IPT is an evidence-based brief, structured, present focused manualized therapy used to treat individuals with mental distress associated with current interpersonal dispute/conflict, role transitions/life changes, prolonged grief and social isolation/loneliness (39). A systematic review and meta-analysis reported that IPT was effective in reducing adolescents' symptoms of depression in LMICs (40). Similarly, another study from Kenya reported that IPT delivered by trained non-specialists was effective in treating women with mental distress (35). IPT has four focal areas explained in the following paragraphs.

Interpersonal conflict is defined as "a situation in which the client and at least one significant other person have non-reciprocal expectations about their relationship" (39). It is informally understood as disagreements, arguments and disputes. During their time at university, students who experience conflict with their friends and family have an increased likelihood of developing mental distress (19, 41). Interpersonal conflict is chosen as an IPT focus area when worsening

symptoms are connected to disagreements and arguments with a significant other. Role transitions is a focal area of IPT defined as an individual who is unable to adapt to new life changes (both positive and negative) that may include moving away from family, sudden changes in finances, separation or rejection by a lover, developing a serious illness, or getting married (39). All university students face role transitions despite its degree varies. This focal area is chosen as an IPT target when the worsening symptoms are linked to significant life changes with challenges to adapt to new circumstances.

Grief is the third IPT focal area that is invoked when a student loses a significant person by death (20). Grief reactions such as sadness, feelings of discomfort, guilt and anger are inevitable for most people across the world, but if these reactions fail to resolve within a reasonable time dictated by local cultural expectations, it increases the risk for developing CMDs and negatively affects students' academic performance and quality of life (20, 42, 43). Beyond this, prolonged grief impairs participation in social or enjoyable activities, persistent low mood and is associated with denial of the death of the closed person (44). The fourth IPT focus area is interpersonal deficits or more usually called interpersonal sensitivities recognized as social isolation which is not linked to a specific interpersonal event unlike the other three IPT foci (39).

The feasibility and acceptability of IPT have not been well studied in LMICs university settings, where most students' mental distress is mainly associated with role transitions, interpersonal conflicts and grief. At the global level, some studies show the feasibility and acceptability of IPT among adolescents. For example, a quasi-experimental study conducted in the United States reported that brief IPT was feasible and acceptable in reducing mild to moderate symptoms of depression and improving social functioning among adolescent students (45). Systematic review and meta-analysis also reported that IPT was an effective therapy to treat adolescents with symptoms of depression (46, 47). An experimental study conducted among Iranian university students reported that students who received brief group IPT showed a significant reduction in depressive symptoms compared to the control group (48). Furthermore, a study from Australia reported that individual IPT was more effective than group IPT for treating depressed adolescents in a school setting (49), which could be associated with the majority (95%) of the college students preferred individual psychotherapy to group counseling (27).

Mental distress and its predictors are common among university students globally, as well as the barriers to receiving mental healthcare; however, it is possible that there is a higher prevalence, more complex stressors, fewer professional mental healthcare seeking behaviors and a wider treatment gap in LMICs compared with high-income countries (17). This is a call to implement culturally appropriate evidence-supported practicable psychological interventions. Early recognition and feasible psychological interventions are needed in LMICs universities to combat the negative impacts of mental distress on students' education performance, social interactions, health, and function.

So far, to the best of this researcher's knowledge, there is no published evidence from Ethiopia on the feasibility and acceptability of IPT for university students with mental distress. This study is designed to fill this critical knowledge gap and is aimed to investigate the feasibility and acceptability of Interpersonal Psychotherapy adapted for Ethiopia (IPT-E) for students with mental distress at Wolaita Sodo University (WSU). It has also aimed to address the prevalence of mental distress, perceived needs and barriers to receiving mental healthcare and explore local explanatory models for mental distress.

1.2. Statement of the problem

At the global level, the enrolment of university students is increasing (46). Most students are young adults, a developmental stage that determines much of their choices and success in life and will in turn affect the host country's economic and technological developments (3). The students contribute importantly to the future workforce in LMICs, where the largest number of youth is found (6). Getting the chance of a university education is an exciting experience for the student. Each will pass through a period of transition from high school life to the more autonomous university environment, moving from adolescence to adulthood. University life provides rich opportunities for self-development, independent living, engaging in a social life and building relationships; however, it is also challenging and stressful in many ways (17). The challenges are associated with being new to the university environment, the economic burden of university life, difficulties in learning, issues associated with social relationships, conflicts and loss of a significant person (3, 46). Hence, many of the experiences of university life relate to life transitions, interpersonal conflicts and may include the loss of a significant person, all of which can cause mental distress among university students. Most psychiatric disorders accounting for

50%-75%, including anxiety and depression can have their first onset during a young person's life (3).

As noted, mental distress is prevalent world-wide, even though the magnitude of the prevalence may differ from place to place. Its prevalence is high among university students in LMICs. For instance, a systematic and meta-analysis reported that the pooled prevalence rate of depression symptoms among university students was 24.4% (6). Other studies from Brazil reported that the prevalence of anxiety and depression among undergraduate students was 37.75% and 28.51%, respectively (50) and also the prevalence of mental distress was 45.2% (51). Similarly, in India, the pooled prevalence rate of depression and anxiety among university students was 39.2% and 34.5%, respectively (52).The same prevalence trend was found in Ethiopian universities. For example, the pooled prevalence of mental distress among university students in Ethiopia reached to 35% (18).

Despite the high prevalence of mental distress among university students in Ethiopia, the majority in need of assistance do not receive professional mental health services. The main reasons for this treatment gap may be associated with stigma (53), instrumental and attitudinal related barriers (54). However, the majority (83.8%) of students receive help from informal sources such as friends, families and religious leaders (25). There is no recently published study that quantifies the mental health treatment gap among university students in LMICs.

The high prevalence of mental distress and the large treatment gap together have significant adverse impacts on students' health, continuation of their education (9), quality of life (55), communication with others, self-esteem and social, emotional skills (56) and on their human rights (57). Furthermore, untreated mental distress is associated with students' low academic performance, low motivation and poor work performance after graduation (58). Hence, unless early mental health interventions have been provided to these students, the long-term impacts of this problem on students' health and productivity in the adulthood stage will be impaired (6). So, to combat the high prevalence and burden of mental distress among university students, early screening and accessing mental health services in LMICs are crucial. Because mental health interventions can boost students' positive mental health, productivity in the future, social-wellbeing, interactions with people, emotions, coping strategies and academic result (3).

Psychological interventions have shown promising effects in decreasing symptoms of mental distress among university students (59). However, the accessibility of these interventions through the counseling offices of the higher education institutions in LMICs is poor in terms of quantity and quality services. As the evidence show, most university counseling centers in LMICs are not able to meet students' mental health needs (60, 61), because they are ill-equipped in terms of staff, with few trained counsellors leading to limited resources and the delivery of quality services (17, 62). Besides this, there is a lack of dissemination of information about the existing counseling services, so students are unaware of their availability (61, 62).

To date, studies from Ethiopian universities only reported the prevalence and associated risk factors of mental distress noting the need to implement psychological interventions. However, they did not quantify this, or identify barriers to accessing mental health services, explore local explanatory models of mental distress or feasibility of psychological intervention for students suffering from mental distress. Apart from teaching, universities are expected to cultivate students' mental health through taking preventive and remedial psychological therapies by their counseling offices (61). The present high prevalence of mental distress and large treatment gap together may result in poor health consequences, psychological disabilities and impaired functioning. It is a call for implementing culturally appropriate evidence-based intervention in university settings to support and optimize the health of students.

1.3. Rationale and significance of the study

The scientific justifications concerning the importance of this study include the fact that most mental health studies conducted in Ethiopian universities focus on reporting the prevalence of mental distress; less attention has been given to identifying the possible barriers to receiving professional mental health services. There is also a literature gap with regard to identifying the perceived need for professional mental healthcare and assessing the association of demographic factors with the need and barriers to receiving mental health services among university students in Ethiopia. To the best of the researcher's knowledge, there is no published study that explores the subjective experiences of mental distress among university students in Ethiopia. Taking into account the explanatory models of mental distress among university students in LMICs is a pre-condition to sustainably tackling the burden of the problem through feasible and acceptable psychological intervention (17). Conducting this study will fill these literature gaps.

The high prevalence of mental distress and the challenges encountered by university students in LMICs are a call for the provision of culturally adapted psychological therapy in higher education institutions. Previous studies recommended the need for feasible evidence-based psychological interventions for university students with mental distress. But, none of them has published evidence in Ethiopia on the feasibility and acceptability of IPT for these students, where most students' mental distress is associated with role transitions, interpersonal conflicts and grief that are the focal areas of IPT. As a result, these mentally distressed students experienced a greater number of negative interpersonal life events, lower levels of social skill, lower social competence and a poorer quality of relationship with parents compared to non-distressed students (63). Thus, these facts led to conduct evidence-based interventional study.

The mhGAP intervention guide recommends IPT as a treatment option for mental distress at healthcare centers by supervised non-specialized staff (57). There is a clear research gap in conducting interventional research in higher education institutions in Ethiopia, where more than 45 public universities exist that host large number of students in which the prevalence level of mental distress and the mental health treatment gap are high. Evidence has shown that more than one third of university students in Ethiopia are suffering from mental distress (18), where the provision of professional mental health services are very limited (61). Although the policies and guidelines of higher education institutions and the Ministry of Health in Ethiopia encourage the importance of psychological counseling service for students, the reality on the ground regarding the provision of this service is almost non-existent. So, all these evidence together enabled the researcher to conclude that professional mental healthcare is almost non-existent and psychological intervention studies, including IPT among university students in LMICs are very limited, despite the focus areas of IPT are highly prevalent among these students. Besides this, there is lack of IPT study evidence on young population in LMICs.

Carrying out a study that pilots the feasibility and acceptability of IPT-E on distressed university students can have fundamental and practical significance in addressing students' suffering and functional impairments, whilst empowering students as they recover and manage these problems. The intervention given to the students can improve their communication skills or help them to readjust expectations, enabling them to build or utilize their social support networks and increase their problem-solving skills during crises. Distressed students who were treated through IPT-E

experienced a decrease in symptoms and improved functioning. They became better able to see their own potentials, manage their distress, solve their current problems and became equipped with the skills to solve inter-personal problems.

The present study results will provide important information for policy makers and health service planners to be responsive to the mental health needs of university students and facilitate the development of culturally attuned mental health services. Currently, WSU counseling office personnel are using the skills, knowledge, and materials of IPT-E transferred through the present study. The results of this research will serve as a potential stepping stone to establish IPT-E centers in different Ethiopian universities. This IPT-E study is the first in its kind in Ethiopia and may contribute to further research studying the effectiveness of culturally adapted IPT-E for mental health distress and other disorders using a randomized controlled trial (RCT). Furthermore, this study provides information for mental health workers and policy makers to tackle the types of barriers to receiving professional mental healthcare to provide mental health intervention for students with mental distress.

2. LITERATURE REVIEW

Under this section, published literature related to the study title of mental distress, perceived need and barriers to receiving professional mental healthcare, explanatory models for mental distress and feasibility and acceptability of IPT were extracted from three databases and hand searching. The literature that fit with the study objectives was organized section by section. A PRISMA diagram was drawn and the selected articles were reviewed based on data extraction format. The elements included in the searching strategy process are described below.

2.1. Review methods

2.1.1. Review questions

The review aimed to answer the following four questions.

1. What is the prevalence of mental distress among university students?
2. What are the barriers that hinder university students to receiving professional mental healthcare?
3. Is IPT feasible and acceptable to treat adolescents with mental distress?
4. Does IPT show a promising effect in reducing symptoms of mental distress and improving function?

2.1. 2. Eligibility criteria

The eligibility criteria and their descriptions were summarized in the following table below.

Table 1: Eligibility criteria for including articles in the review

No.	Eligibility criteria	Descriptions
1	Language	English
2	Setting/context	The studies were not geographically restricted to high or LMIC countries. However, for the first two review questions, the setting was bounded to universities, because there are sufficient studies conducted on university populations. For the last two review questions, because there is a lack of IPT studies in university setting, the researcher decided to include studies conducted on a young population in primary healthcare, hospital, schools and community healthcare.
3	Year of publication	In this review, articles published from 2011-2021 years were included, because they are most likely to be relevant to the present study.
4	Study design	The review was not limited to a specific study design; rather all types of study designs were accepted.
5	Study population	For the first two review questions, study populations were

		limited to university students, but for the remaining two questions, study populations were restricted to young populations in any setting.
6	Age	≥ 18 years for the first two review questions; however, for the last two review questions, the age of the studies participants was limited to 12-30 years.
7	Type of data	Both qualitative and quantitative data.
8	Outcomes	Mental distress, barriers to treatment, feasibility and acceptability of IPT and mental health outcomes of IPT.
9	Intervention	IPT
10	Intervention comparison group	Interventional studies with or without control group were reviewed.
11	Article type	Peer reviewed

2.1.3. Search strategy

2.1.3.1. Databases

Electronic databases such as Pub-Med, Global Index Medicus and CINAHL were used to search the articles. The search was done from the inception of the study to March 3, 2021. Besides this, potential eligible articles missed by the electronic databases were hand-searched with Google scholar and the reference lists of all eligible articles.

2.1.3.2. Search terms

The same Medical Subject Heading search terms were used for all databases. An example of the search terms from the Pub-med were attached in the Appendix P.

2.1.4. Study selection

First, the identified references lists from the three databases were downloaded onto the reference management software (Endnote X7.0) for further screening. Second, the imported references' titles and abstracts were screened based on the eligibility criteria predetermined after identifying the duplicated references. Third, the references that passed the eligibility criteria were downloaded as full-text articles for further screening and reviewing. Finally, those articles which perfectly met the eligibility criteria were selected for review of their full-texts. For a detailed understanding, see the PRISMA diagram (Figure 1) below that shows all the review processes undertaken.

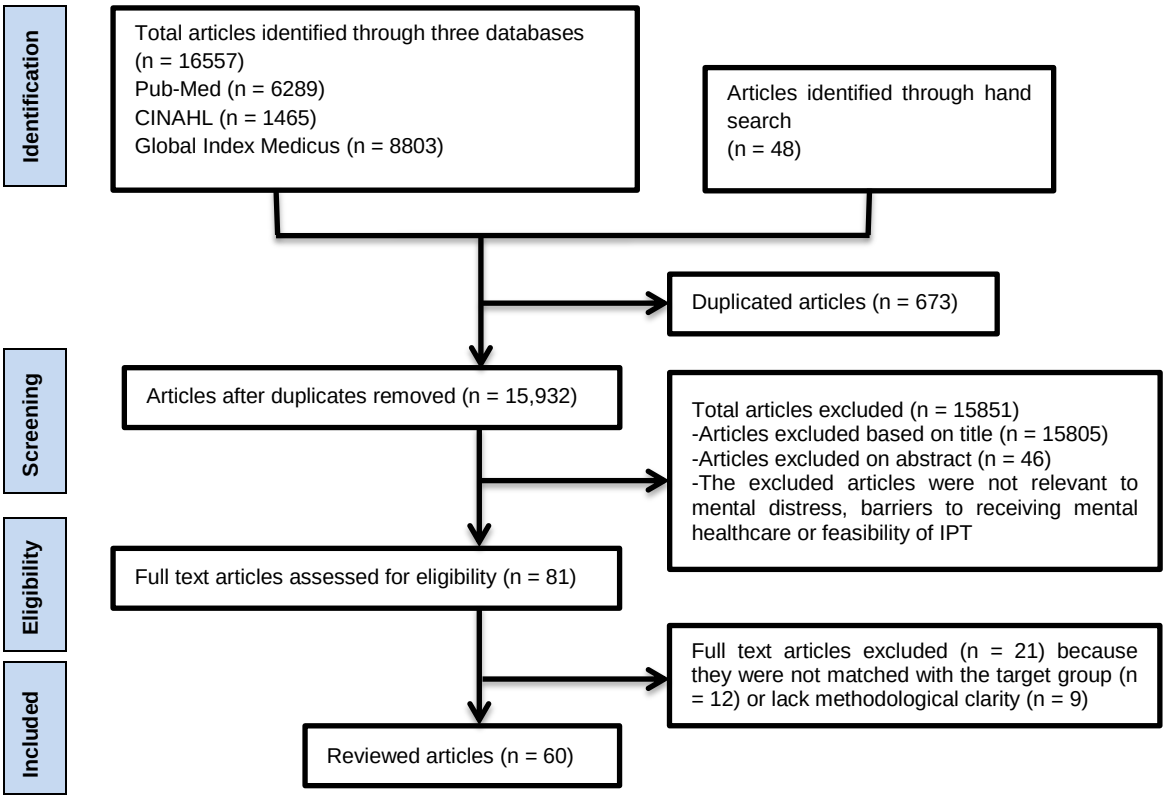

Figure 1: PRISMA flow chart of the progression of studies through the review

2.1.5. Data extraction

The researcher extracted the required data from the eligible articles using the data extraction method that was developed for this literature review. The data extracted included: author and the year of publication, country, study design, sample, sampling technique, measures, total sessions, length of session, intervention provider, intervention format, results and limitations. The extracted data were summarized in table form and finally narrated their characteristics.

2.1.6. Quality appraisal

The quality of the eligible articles was assessed using mixed methods appraisal tool (64), which was used to assess the quality of primary researches in a review that included quantitative, qualitative, RCT, non-randomized and mixed-method studies. This tool has five questions for each study type with two common screening questions for all types of study design. Each question has three response options ‘Yes’, ‘No’ and ‘Can’t tell’. 'Yes' means that the criterion is met, 'No' means that the criterion is not met. The ‘Can’t tell’ response implies the paper does not

report appropriate information to answer 'Yes' or 'No', or that it reports information that is not clearly related to the criterion. Scoring 'No' or 'Can't tell' for the first one or two screening questions enabled the article to be discarded from the review, indicating that the paper is not an empirical study. The authors of this tool discourage adding the overall score together; rather they advised to provide a more detailed descriptions of the ratings of each criterion to better inform the quality of the included studies (64).

2.2. Review results

2.2.1. Included studies

As can be seen in figure 1 above, the total number of articles from the electronic databases and hand searching were 16,605. Of these, 673 articles were duplicated and 15,932 remained for screening based on title and abstract. Then, 15,851 articles were excluded based on title and abstract and 81 studies remained for further screening. Finally, after removing 21 articles, 60 studies met all the eligibility criteria and were reviewed.

2.2.2. Characteristics of the included studies

Of the 37 articles concerning the prevalence of mental distress, most of them were published from LMICs, including Ethiopia. Except for one study, all of them were cross-sectional study design. Concerning barriers to receiving professional mental healthcare, of the 14 articles, the majority of them were published from high-income countries. Except for two studies, all of them employed cross-sectional study design. Coming to the feasibility and acceptability of IPT, except for one study, the remaining studies were published from high-income countries, including America, Finland and Australia. In terms of design, the majority of the studies employed RCT.

2.2.3. Quality of the included studies

The present quality assessment process consisted of 47 cross-sectional studies, two in each qualitative, non-randomized and mixed-method studies and seven RCT. Of the cross-sectional studies, 39 studies fulfilled all the five criteria of mixed methods appraisal tool; all the qualitative studies met all the five criteria; and six studies in the RCT category were met all the five criteria listed in the mixed methods appraisal tool. For further information, see Appendix Q.

2.3. Definition of mental distress

Scholars use terms interchangeably such as mental distress, psychological distress, common mental health problems and CMDs in their studies to report the prevalence of anxiety, depression and somatic symptoms. Mental distress is the most common type of mental health problem characterized by a mixture of different complaints (feeling sad, worried, tense, or angry) that stays for a short duration and is caused by difficulties in one's life (e.g. loss of a loved one) (1). Similarly, other scholars have defined mental distress as "a state of emotional suffering typically characterized by symptoms of anxiety (e.g., restlessness; feeling tense), depression (e.g., lost interest; sadness; hopelessness) and somatic symptoms (e.g., insomnia; headaches; lack of energy)" (65, 66). However, some studies have reported that there is a tendency for students not to consider mental distress as a mental health problem; rather they perceive it as a normal or transient mood change resulted from struggling day-to-day life activities (10, 28). In the present research, mental distress is operationalized as a combination of mixed complaints associated with anxiety, depression and somatic symptoms that can interfere significantly with the life of the student, and can be mitigated by early mental health interventions.

2.4. Prevalence of mental distress among university students

The prevalence of mental distress is high among university students in high and LMIC countries (67). This has been confirmed by previous findings. For instance, Bruffaerts et al (30) has reported that one in three college freshmen students suffer from any type of mental health problem. Of these problems, the most common are anxiety and depression disorders. Systematic review and meta-analyses studies reported the prevalence of anxiety and depression symptoms among university students across the world is 33.8% and 27.2%, respectively (68, 69). Similarly, studies in the United States and Vietnam have shown that the prevalence of depression symptoms among university students is 22% and 15.2%, respectively (4, 70). Likewise, a meta-analysis from Pakistan has reported the prevalence of depression symptoms among University students is 42.66% (71). Another meta-analysis of individuals in several LMICs reported that the pooled prevalence rate of depression symptoms among university students is 24.4% (6). This trend is also similar in Ethiopian university students, where the pooled prevalence of mental distress among university students reached up to 35% (18).

To summarize the prevalence of mental distress, the researcher reviewed eligible articles and summarized them in table form (table 2). In this table, 37 articles were reviewed with regard to authors, year of publication, study country, research design, sample, sampling technique, measures, outcomes and limitations. The studies were from high and LMIC countries, where the number of studies from LMICs exceeds than studies from high-income countries. Except for one research paper (72), the remaining studies employed a cross-sectional study design, which does not show causality or the temporal relationship between of variables. Sample size ranged from 171 (73) to 4760 (74) participants selected by using probability and non-probability sampling techniques. The majority of the studies used screening tools to identify the prevalence of mental distress that ranged from 9.3% (75) to 88.4% (76). All the studies were conducted at the university setting that best fit with the present study population.

Table 2: Summary of studies on the prevalence of mental distress among university students

Author	Country	Study design	Sample	Sampling	Measures	Result	Limitations
Haile et al., 2017 (77)	Ethiopia	Cross-sectional	422	Stratified sampling	K-10	63.1% CMDs	Recall and socially desirability bias The study design did not shows relationship between variables
Kelemu et al., 2020 (78)	Ethiopia	Cross-sectional	422	Random sampling	SRQ-20	53.2% mental distress	The absence of using diagnostic tool The study design did not shows relationship between variables Recalling bias
Bedaso et al., 2020 (79)	Ethiopia	Cross-sectional	309	Random sampling	SRQ-20	34% mental distress	The study design did not shows relationship between variables Reporting bias The absence of using a diagnostic tool
Gebreegziabher et al., 2019 (25)	Ethiopia	Cross-sectional	760	Multi-stage sampling	K-10	58.4% CMDs	Using self-reported tools which are prone recall and social desirability biases Time of the study was not appropriate and which might inflated the prevalence of mental distress The study design did not shows relationship between variables
Tesfahunegn and Gebremariam 2019 (41)	Ethiopia	Cross-sectional	919	All volunteer students	SRQ-20	39.6% mental distress	Selection, recall and social desirability biases Lack of representative sample
Reta et al., 2020 (80)	Ethiopia	Cross-sectional	394	Random sampling	SRQ-20	28.7% mental distress	Lack of generalizability, the design did not shows causality and diagnostic instrument was not used
Kebede et al., 2019 (81)	Ethiopia	Cross-sectional	273	Systematic random sampling	HADS	51.3% depression 30.1% anxiety	Recall bias and socially desirability biases due to using self-reported tool and small sample
Melese et al., 2016 (82)	Ethiopia	Cross-sectional	240	Stratified random	SRQ-20	30%) mental distress	Small sample size, recall bias, and diagnostic tool was not used

				sampling			
Dachew et al., 2015 (83)	Ethiopia	Cross-sectional	836	Stratified multistage sampling	SRQ-20	40.9% mental distress	The study design did not shows relationship between variables, recall, socially desirability biases, and diagnostic tool was not used
Dessie et al., 2013 (84)	Ethiopia	Cross-sectional	413	Random sampling	SRQ-20	21.6% mental distress	Recall and social desirability biases
Birhanu and Hassein 2016 (85)	Ethiopia	Cross-sectional	410	Random sampling	CES-D-10	32.2% depression	The study did not use locally validated tool Weak discussion about the findings and recall bias
Mboya et al., 2020 (22)	Tanzania	Cross-sectional	410	Random sampling	SRQ-20	14% mental distress	Recall and social desirability biases
Lugata et al., 2020 (86)	Tanzania	Cross-sectional	1047	Random sampling	PHQ-9 SRQ-20	21.3% depression	Recall and social desirability biases Absence of the use of a diagnostic tool
Bantjes et al., 2019 (87)	South Africa	Cross-sectional	1402	All volunteer students	CIDI	38.5% life time CMDs 31.5% 12-months	Recall and social desirability biases, lack of generalizability and participant selection bias
Amarasuriya et al.,2015 (75)	Sri Lanka	Cross-sectional	4304	All volunteer students	PHQ-9	9.3% major depression 13.5% other depression	The study was prone to selection, recall and social desirability biases and did not use a diagnostic tool
Shao et al., 2020 (88)	China	Cross-sectional	2057	All volunteer students	Zung SDS Zung SAS	57.5% depression 30.8% anxiety	Recall and socially desirability biases The study design did not shows relationship between variables
Costa et al., 2014 (89)	Brazil	Cross-sectional	172	Availability sampling	SRQ-20	33.7% CMDs	The design did not shows causality Small sample size Lack of external validity
Lu et al., 2015 (90)	China	Cross-sectional	1048	Random sampling	PHQ-9 GAD-7	65.55% depression 46.85% anxiety	No clinical diagnoses Recall and social desirability biases
Asante and Andoh-Arthur 2015 (91)	Ghana	Cross-sectional	270	Convenient sampling	CES-D-10	39.2% depression	Lack of external validity Sampling bias
Othieno et al., 2014 (92)	Kenya	Cross-sectional	923	Random sampling	CES–D-10	35.7% depression	No clinical diagnoses The study design did not shows

							relationship between variables Sampling, recall, and social desirability biases
Richards and Salamanca Sanabria 2014 (93)	Colombia	Cross-sectional	254	Convenient sampling	BDI-II	36.2% depression	Small sample size , no clinical diagnosis and sampling bias
Porru et al., 2021 (74)	Italy	Cross-sectional	4760	Convenient sampling	K-10	78.5% psychological distress	Sampling, recall, and social desirability biases
Hersi et al., 2017 (19)	Somaliland	Cross-sectional	570	Stratified sampling	SRQ-20	19.8% mental distress	Selection bias existed along with reporting bias
Deasy et al., 2014 (72)	Ireland	Mixed design	1112	All volunteer students	GHQ-12	41.9% psychological distress	Recall,sampling and social desirability biases The design failed to show relationship of varibales
Delara and Woodgate 2015 (73)	Iran	Cross-sectional	171	All volunteer students	SCL-90-R	23% psychological distress	Small sample size that led lack of generalizability Sampling, recall and social desirability biases
Ramón-Arbués et al., 2020 (94)	Spain	Cross-sectional	1074	All volunteer students	DASS-21	18.4% depression 23.6% anxiety 34.5% stress	Did not use diagnostic tool The study design did not shows relationship between variables Selection bias
Teh et al., 2015 (95)	Malaysia	Cross-sectional	397	Not mentioned	DASS-21	30.7% depression 55.5% anxiety 16.6% stress	Sampling technique was not mentioned The study design did not shows relationship between variables Recall and social desirability biases
Fuad et al., 2015 (96)	Malaysia	Cross-sectional	762	Not mentioned	DASS-21	46.9% stress 76.2% anxiety 60.2% depression	Lack of generalizability because the participants were taken from a single university The study design did not shows relationship between variables
Chatterjee et al., 2014 (97)	India	Cross-sectional	180	Availability sampling	BDI	63.9% depression	Selection, recall and social desirability bias The design didn't show causality
Becerra and Becerra 2020 (98)	America	Cross-sectional		All volunteer students	Kessler-6 scale	43.5% psychological distress	Lack of generalizability Sampling bias, recall and social desirability biases
Saïas et al., 2014	France	Cross-	946	Random	SF	13.8% psychological	61% response rate, recall and

(99)		sectional		sampling		distress	social desirability bias and the design didn't show causality
Asif et al., 2020 (76)	Pakistan	Cross-sectional	500	Random sampling	DASS-21	75% depression 88.4% anxiety 84.4% stress	The study design did not shows relationship between variables Unequal representation of participants from study years
Schofield et al., 2016 (100)	Australia	Cross-sectional	800	Random sampling	DASS-21	39.5% depression	16% of the questionnaire was not returned The study design did not shows relationship between variables
Hakami 2018 (101)	Saudi Arabia	Cross-sectional	450	Stratified sampling	Brief Symptom Inventory-18	30.9% psychological distress	Participants were selected from one university Diagnostic tool was not used Psychological distress measuring instrument was not validated and social desirability bias
Wahed and Hassan 2017 (102)	Egypt	Cross-sectional	442	Purposive sampling	DASS-21	62.4% stress 64.3% anxiety 60.8% depression	The adaptation of the tool was not mentioned Selection bias related with the sampling technique Social desirability bias
Arias-de la Torre et al., 2019 (103)	Spain	Cross-sectional	4166	All volunteer students	GHQ-12	50.6% psychological distress	The design did not shows causal interpretation Selection and recall biases
Auttama et al., 2021 (8).	Thailand	Cross-sectional	729	Convenience sampling	GHQ-28	82% CMDs	Male participants were under represented and selection bias The data collection was done one week before the final exam which inflated the prevalence of CMDs. Diagnostic instrument was not used to diagnose CMDs

2.5. Explanatory models of mental distress

The explanatory models of illness are a concept first coined by Kleinman in 1978. He defined it as the subjective symptoms experience, its perceived cause and consequences, help-seeking behaviors and the preferences and coping strategies people use to address mental illness. The explanatory models of mental illness are not static and differ from culture to culture (16, 104). Cultural values and norms shape the idea of mental distress or illness, and these terms are themselves Western designations that may make little sense to other cultures and contexts. What counts as psychological distress or mental illness is socially constructed and depends on the cultural explanations, social context and the experiences of the individual (105). Evidence has shown that the prevalence, idioms of distress, help-seeking intention and behavior, understanding and recovery from mental distress and coping mechanisms vary from culture to culture (16).

The explanatory models of mental distress students have influenced their understanding of their problem, causal attributions (biological, psychosocial and spiritual) and professional help-seeking need and behavior. A degree of mental distress can be as normal as it relates external stressors. For example, prior studies have reported that university students who experienced mental distress recognized their problem as a response to as day-to-day life challenge/normal, rather than perceiving it as mental health problem (10, 28). Worldwide mental distress frequently presents in the form of somatic symptoms, but these are usually in the form of symptoms that are recognized culturally as a response to stressors. However, the physical nature of the symptoms influence treatment preference and help-seeking behavior, for instance, psychotherapy may seem irrelevant and medication a more salient treatment (16). The elements of explanatory models for mental distress are discussed section by section below.

2.5.1. Conceptualization of mental distress among university students

Although most mental health problems first appear at the age of university life (3), the majority of students are not well aware of the symptoms of mental distress (9). This is related to the understanding level of students have toward psychiatric problems. Conceptualization of mental distress refers to the way students understand or interpret their symptoms of distress and give names to the perceived symptoms. The meaning formation, expression and reaction of mental distress given by the students vary with the cultural values where they grew up (104), so that

they develop subjective explanations to their psychological symptoms. Diagnostic and Statistical Manual for Mental Disorders (DSM-5) (106) has also recognized the influence of culture on the experiences, causes, idioms, severity, coping, help-seeking preference and understandings of psychological distress. Prior studies from LMICs have reported that most people express mental distress in terms of somatic complaints and they labelled these symptoms as a psychological construct of tension or worry and they did not consider these constructs as mental health problem, normal (107, 108). Thinking too much is the most commonly reported symptom of mental distress in the general population that could be considered as a non-stigmatized way of expressing distress (109). However, published evidence of how university students express their perceived symptoms of mental distress in LMICs is not sufficiently studied.

University students repeatedly reported symptoms of mental distress, such as hopelessness, being overwhelmed, being sad, suicidal ideation (110), gastrointestinal complaints, pain/aches, the difficulty of concentration, fatigue, headaches, nervousness/anxiety and mood swings (111) as the expression of anxiety or depression. Concerning the prevalence of these symptoms, Nyer et al (112) reported that 87% of college students experienced at least mild fatigue. This study has also found that students with moderate or severe fatigue had experienced higher depression than students with mild or no fatigue; similarly, students with severe fatigue experienced greater anxiety compared to those with mild or no fatigue that led to functional impairment. Another study has found that the prevalence of somatic symptoms among university students ranged from 15%-61% (111). These somatic complaints strongly affected students' functioning and quality of life (113). In terms of gender variation, female students manifested more somatic symptoms than their counterpart male students (114).

With regard to labeling symptoms of mental distress, previous studies have shown inconsistent findings. For example, a study from Vietnam found that the majority (68%) of the university students did not accurately recognize symptoms of depression mentioned in the case vignette, where most of them labeled symptoms of depression as stress (115). This might be associated with having poor mental health literacy. On the contrary to this finding, a study from Greece reported that 80.2% of undergraduate psychology students correctly recognized major depression from the given case vignette (116) that could be their field of study helped them to know the name of the psychiatric problem. Research in Ethiopia has reported that compared to

schizophrenia and depression, anxiety is the list recognized psychiatric problem by university students (117). Similarly, a study from Australia has found that university students faced difficulty to correctly define and conceptualize anxiety disorder compared to depression and severe psychiatric disorders (10). This is probably because of most of the time students experience symptoms of anxiety such as being anxious, nervous and apprehension in their routine activities, so that they normalized it (10, 28); it is also associated with the mental health literacy they have toward anxiety. Mental health literacy refers to knowledge of differentiating symptoms of mental distress from normal stress, knowledge about the importance of professional mental healthcare, knowledge of how to prevent mental distress, knowledge of positive coping styles from mental distress and beliefs about mental distress and its associated risk factors (118).

Prior study has shown that university students in Indonesia had poor mental health literacy (9). The same study has found that gender (female students), level of study (fourth-year students), study field (health students) and willingness to join mental health program significantly associated with mental health literacy. On the contrary, a study from a high-income country reported that college students with mental distress had good knowledge and attitude about mental illness that could not hinder them to receive professional mental health services (28). On the other hand, Gebreegziabher et al (25) have reported that 42% of the university students in Ethiopia had no idea about mental illness that significantly affected their professional mental healthcare-seeking behaviors. In general, understanding the perceived experiences of mental distress from the perspective of the students along with the counselor's view may have positive impacts on treatment need, treatment outcome, mental health literacy and reduce treatment barriers (104). This is crucial to provide feasible and culturally acceptable psychological intervention for university students.

2.5.2. Factors associated with mental distress among university students

University is an institution where students from different backgrounds enrolled in different departments come to learn, develop and share skills, knowledge, culture and language. However, it is also a challenging environment, where students experience distress from time to time, and some may experience CMDs in the university (90). Several researchers have found bio-psycho-social-spiritual factors are associated with these disorders. These risk factors include: (a) interpersonal conflicts with family, friends, instructors, boy or girl friends (3, 18, 19, 41, 75, 83,

84, 88, 119, 120); (b) experiencing death of close person (20, 75, 121); lack of social supports (41, 80, 81, 83, 91); (c) economic hardship (19, 41, 72, 80, 83, 88); (d) academic related factors (41, 72, 75, 83, 92); (e) parental separation, (f) negative thoughts and emotions, (g) difficulty of finding good friends and difficulties of overcoming life transitions (121); (h) family history of mental illness (18, 41, 83, 84); (i) being dissatisfied with university culture (122); and (j) insecure attachment with others (123). Furthermore, previous studies have shown that students who reported harmful use substances such as drinking alcohol or chewing khat (19, 77, 79, 83, 84, 91, 92) and not attend the religious program and a religion that has no significant impact on life were significantly associated with mental distress (3, 77, 83, 91).

There are some inconsistent reports regarding the field of study of students as a risk factor for experiencing distress. For example, prior studies have shown that students who had a lack of interest in the field of study were significantly more likely to experience mental distress (41, 80, 83). However, another study found there was no significant association between symptoms of mental distress and the field of study among university students (73). Concerning marital status, previous studies reported dissimilar results. For example, Yarmohammadi et al (124) reported that single university students were more likely to develop mental distress than married students, whereas Othieno et al (92) found the opposite. Two further studies found that there was no significant relationship between mental distress and marital status (73, 125). Similarly, regarding age, studies were inconclusive (73, 75, 81).

Some studies reported that living on or off campus predict mental distress. For instance, students who were residing in the university developed more mental distress when compared with those residing off-campus (22). However, another study found that students who were living outside the university encountered more anxiety and depression compared to students living in the university (92). Another study reported that there was no significant association between mental distress and place of residence (73). Many researchers have reported that being female is a risk factor for mental distress compared to their male counter parts (19, 41, 78, 80, 81, 83). However, other studies have shown that there was no significant gender difference in reporting symptoms of mental distress (73, 75, 82, 92). With regard to the number of years studying in university, being a freshman student was associated with higher mental distress compared to other study years (41, 81, 92, 97). This could be associated with the loss of school friends, the need to form

new relationships, moving away from home, living with new college roommates, dealing with different methods of learning and the expectation of increased autonomy in life and studies (126).

2.5.3. Impacts of mental distress on university students

Globally, the prevalence of anxiety and depression is high and their burden in terms of disabling health conditions and devastating economic growth are also high (33). The same is true for university students, where these disorders interfere with their ability to achieve the goals of higher education and learning. Several researchers have investigated the impacts of mental distress on university students' academic performance, physical and psychological well beings. Among these studies, one research study reported that depressed university students had poorer academic performances and increased vulnerability for experiencing additional mental health symptoms, including anxiety, thoughts of suicide, lack of motivation, low self-esteem, substance abuse and sleep disturbances (127). In addition, other studies have found that mental distress had a negative impact on students' educational outcomes (22, 30, 73, 92), relationship with their friends and motivation to participate in social activities (128). Contrary to these findings, two studies have identified that there was no significant association between mental distress and students' academic result (73, 77).

As has been mentioned, freshman students experience more mental distress compared to students from other years. As a result, the role impairments related to personal relationships and social life among first-year students are higher than junior and senior students (129). Experiencing mental distress can also negatively affect the relationship students have with their parents. For instance, O'Shea et al (63) reported that parents of depressed adolescents perceived more negative parental attitudes and behaviors towards their depressed adolescents than parents with non-depressed adolescents.

2.5.4. Mental distress coping strategies among university students

University students seek informal treatments from others when they are distressed as well many use a variety of coping mechanisms (130). Coping strategies refer to cognitive, emotional and behavioral actions taken by students to manage, reduce or tolerate their mental distress (88). These coping styles can be broadly categorized as positive or negative (131). The positive coping

strategies are constructive actions or problem solving behaviors that are used to alleviate the student's mental distress without adverse consequences (132). Conversely, the negative coping mechanisms refer to passive actions taken by students to deal with their mental health problems that may cause adverse consequences on their health, social relationship and finances (132). The use of positive coping mechanisms positively linked to managing mental distress, whereas negative coping styles might increase the likelihood of elevating mental distress (88).

Previous studies have reported that the majority of college students used healthy coping mechanisms to overcome mental distress (133). Such as meeting with friends, being optimistic (130), seeking support from others, problem-solving (134), listening to music, recreational activities (72), prayer (120, 135), reading religious books, taking enough rest, doing physical exercise, watching movies and listening spiritual songs (133). The use of these healthy coping strategies is positively associated with resilience that enables the individual to cope with different mental health-related challenges (136). The same study has found that female students used more healthy coping styles than male students.

Conversely, there are students who use negative coping styles to manage mental distress. Among these maladaptive coping strategies, students use substances like alcohol, tobacco and cannabis (72), they social isolate themselves (134), eating more food, denial of mental distress (72, 132), sleeping less, procrastination and increased use of internet to deal with mental distress (135). Besides, students use avoidance, rumination, wishful thinking (132) and self blame (120) as coping mechanisms. However, the use of these coping strategies has adverse impacts on their health, academic performance and social relationships (72). Therefore, accessing professional mental health intervention can play a role in avoiding the use of negative coping mechanisms.

2.5.5. Mental health help-seeking behaviors among university students

Help-seeking behavior is defined as the remedial actions received mentally by distressed students to manage their mental distress. University students could receive care from informal sources and mental health professionals. The professional source of treatments represent receiving mental health services from mental health professionals, such as psychologists, psychiatrist or from other related professionals, while the informal sources imply receiving help from friends, family, relatives, religious leaders and traditional healers. In this regard, the majority of

university students with mental distress do not receive professional mental healthcare. Evidence has shown that receiving professional mental healthcare among university students with mental distress was almost non-existent, where only 3.3%-5% of them sought help from mental health professionals (137, 138).

According to Auerbach et al (139), one-fifth, which accounts for 20.3% of higher education institution students worldwide experience any type of psychiatric disorder; however, only 16% of them accessed mental health services. The same evidence has been reported from Ethiopia, where only 16.2% of university students with CMDs received mental healthcare from professionals (25). Similarly, a study from Turkey has reported that where the prevalence of mental distress reached 27-41%, only 13-15% of university students had obtained psychotherapy (27). The same study reported that 49% of the students solved their mental distress by talking to their family and friends. A qualitative study has reported that only 33.2% of students with psychiatric problems received professional mental healthcare (140). Rodriguez et al (141) and Cage et al (53) have found that 42.1% and 55% of students accessed mental healthcare from professionals, respectively. Besides this, Arria et al (142) found that students with a history of suicide ideation received support 87% from family and friends, 73% from psychiatrists and psychologists and 61% from both sources (142).

In LMICs, the professional mental health treatment gap is large, where the majority of university students receive help from informal sources. For instance, evidence showed that 83.8% of the university students with mental distress had received help from friends, parents and religious leaders (25). A study from South Africa reported that only 18.1% of first-year university students with mental disorders received mental health services in the past one year (143). The need to receive help from informal sources is not limited to LMICs university students, but is also common in high-income countries. For example, a survey monkey study from Ireland addressed that the majority of mentally distressed freshman students accessed care from friends, parents and partners (138). The inability of students to receiving professional mental health services is associated with an increase in the severity of mental distress, withdrawal from the university, substance use, self-harm and suicide, low self-esteem, isolation, and poor academic functioning (30, 127). Generally, in this review, the major gap that the researcher observed was professional mental healthcare is almost non-existent among university students in LMICs.

2.5.6. Professional mental healthcare need among university students

Perceived need for professional mental healthcare implies the number of students with mental distress who need mental health services (from psychiatrists, counselors, or other mental health professionals) but have not received the services. Regarding this, studies have reported two types of results: university students who have a positive attitude toward receiving professional mental healthcare (117, 121, 144) and those who have a negative attitude toward seeking mental health treatments (140).

Whether or not the studies have reported positive or negative student attitudes to obtaining mental healthcare, the majority of them are not receiving professional mental health services from their respective universities. For example, Rodriguez et al (141) found that more than one in ten university students would not seek professional mental health service even if needed so that their mental health-seeking intention is low (145). Due to this, the gap between students receiving informal and professional mental health services is large, particularly in low-income countries, where more than 90% of people with mental disorders do not receive any basic mental healthcare (146). A web-based survey showed that 65% of students with mental distress did not receive mental health treatment, where 42% of them needed the service and 23% did not (28). Rodriguez et al (141) have found that among the students who reported mental distress, 57.9% did not receive professional mental healthcare (141). Similarly, a study from Turkey University reported that 66.8% of the students with mental distress had not sought any mental health services (140).

The mental health service need of students might be influenced by the causal beliefs they have toward their distress. For example, a prior study reported that the tendency to seek professional mental healthcare is more positively associated with the attributions of mental distress toward psychosocial factors (147). On the other hand, participants who attributed mental health problems to supernatural forces are more likely to prefer help from informal sources, such as religious leaders and traditional healers than seeking professional mental health services (148, 149). Furthermore, the belief of causal attributions to mental distress is also associated with some socio-demographic factors. For instance, with regard to age, younger students attributed their mental distress more to psychosocial factors and male students were significantly less likely to be psychologically open to seeking professional mental services for their mental distress (147).

In addition, perceived severity of mental distress has also determined the need to receive professional mental health services. Most people in LMICs in general and in Ethiopia in particular, visit modern mental health treatment services as a last resort after they tried alternative sources of treatments (150).

It can be observed from a reviewed of the literature that the prevalence of anxiety and depression among students is high and impairs their health and functional capacity. Similarly, the high mental health treatment gap among these mentally distressed young adults is linked with school dropout, teenage pregnancy, suicide attempts, and substance abuse (66). Understanding students' unmet need for mental health treatment and accessing counseling services will improve efforts to prevent and treat mental distress which will improve mental health, the student's social life, functioning and academic results (151). Otherwise, the lack of professional mental health services means that students with mental distress will suffer longer possibly leading to more entrenched and complex mental health problems. Hence, accessing appropriate psychological interventions that are both feasible and acceptable will optimize the distressed student's mental health, relationships and academic performance (152).

2.5.6.1. Sociodemographic predictors to receiving professional mental healthcare need among university students

The need to receiving professional mental healthcare is associated with the sociodemographic determinants of the students. Evidence have shown that female students have more positive attitude to the utilization of mental health services compared to male students; the possible explanations could be that they experience more mental distress and they give more value for the support received from professionals (143, 153-155). On the contrary, another study reported that male students perceived more intention to seek professional mental health services than female students (53). However, one study found that there is no significant difference between male and female university students seeking professional mental healthcare (145).

With regard to age, older students are more likely to have a positive attitude toward seeking professional mental healthcare than younger students; this is possibly associated with the past mental healthcare received (154-157) and as age increases, the likelihood of gaining mental health knowledge may also similarly increases. Sociodemographic determinants, such as the

number of years in university, family history of mental illness and substance use are also reported as predictors of receiving professional mental healthcare. For instance, first and fourth-year students were less likely to use mental health services compared to second and third-year students (141). Regarding the area of origin, a study has reported that there was no difference in seeking mental healthcare based on rural-urban backgrounds among students (158). Students who had had personal contact with someone with a history of mental illness were significantly less likely to seek mental health help; this might be due to the negative experience they had with the person who had a mental illness (159). Besides this, individuals with severe depressive symptoms and problematic substance use were correlated with decreased professional help-seeking intention (53, 160).

2.5.6.2. Treatment barriers to receiving professional mental healthcare among university students

As has been mentioned in the above paragraphs, the number of students who need professional mental health services is high and the majority of them did not receive the service they needed. This could be related to numerous barriers students face to access mental health treatment in the university. Treatment barriers are obstacles that hinder or delay university students from receiving professional mental health services. They can be categorized as sigma, attitudinal and instrumental related barriers (161). Treatment stigma is defined as barriers resulted from fear of being stigmatized and discriminated against upon receiving professional mental healthcare (161). Attitudinal barriers are associated with beliefs students have toward accessing mental healthcare (29) and instrumental barriers imply structural barriers linked with lack of knowledge about the available mental health services, financial constraints, and lack of transportation (162).

With regard to stigma-related barriers, many studies have reported perceived self and public stigma, such as (a) embarrassment; (b) not wanting to be labeled crazy; (c) believing that symptoms of mental distress is a sign of weakness; (d) concern about confidentiality issues; and (e) perception of what other students would think that hinder university students to get mental healthcare (29, 53, 141, 154, 163). Conversely, two studies have reported that mentally distressed college students did not consider stigma as a major barrier to receiving professional mental health services (27, 28).

Treatment barriers students encounter when they need treatment can also be associated with their mental attitude (164), including (a) wanting to receive help from informal sources (friend, relatives, or family) (27, 164, 165); (b) preferring to self-medicate (28, 164); (c) denial of mental distress (27); (d) fear of unwanted intervention (163); and (e) not accepting the services (166). Similarly, a barrier was the perception that therapy was financially costly, concern that the counselors were not competent and that receiving counseling was not helpful (140).

The last category of treatment barriers reported was linked to instrumental or structural issues, such as lack of awareness that free counseling service is available in the university (25, 154, 163), the inconvenient location of the counseling offices (166), and lack of time (28, 141). However, findings with regard to these barriers are inconsistent, for example, Topkaya and Nursel (155) found that students who had previous experience of mental health services reported fewer treatment barriers than those who did not receive.Whereas, another study showed that university students who had previous experience of mental health service reported significantly higher barriers to treatment than students who did not receive intervention previously (29).

Students who experienced the above-mentioned barriers to treatment were more mentally distressed (27) which puts the onus on university services to actively reach out to distressed students. Identifying effective ways to disseminate information about available counseling services and designing effective strategies to raise students' mental health literacy, may address the attitudinal, instrumental, and stigma based treatment barriers (167). For further, information see table 3 below. In this table, 14 articles were reviewed and all of them were conducted in the university setting. Most of them were cross-sectional designs, where the sample size ranged from 37 (110) to 13,984 (164) participants. Majority of the studies were conducted in high-income countries, indicating that there is a lack of literature from LMICs, which assures the importance of the present study as a contribution to this literature gap.

Table 3: Summary of studies on barriers to receiving professional mental healthcare among university students

Author	Country	Study design	Sample	Sampling	Measures	Result	Limitations
Cage et al., 2018 (53)	United Kingdom	Cross-sectional	376	Not mentioned	ASS SSSHS	Self-stigma was a major barrier to receive mental healthcare	Lack of generalizability Males were underrepresented Sampling technique did not mention
Ebert et al., 2019 (164)	Australia, Belgium, Germany, Mexico, Northern, Ireland, South Africa, Spain, and United States	Cross-sectional	13,984	All students	Self-reported questionnaire	Preferring to handle the problem alone Receiving support from friends or relatives and Being too embarrassed	Selection and recall biases Predictors of intention to seek treatment were not examined The design did not show causality of the variables
Burlaka et al., 2014 (166)	Ukraine	Sequential mixed design	40	Purposive	Open-ended questions Focused group discussion	Lack of availability of services, inconvenient location and hours, stigma, acceptance and trust issues	Small sample size that limit the generalizability of the result Male students were underrepresented Selection bias
Stewart et al., 2019 (154)	America	Cross-sectional	1272	Convenient sampling	Self-reported measure	Lack of information about the availability of free counseling service Confidentiality issue Stigma related barriers	Selection bias associated with the sampling technique, recall bias, socially desirable responses and the design did not infer causality
Vidourek et al., 2014 (29)	America	Cross-sectional	682	Convenient sampling	Barriers to help-seeking	Embarrassment, denial, and not wanting to be labeled as crazy	Social desirable responses Lack of generalizability Participants selection bias
Rodriguez et al., 2017 (141)	America	Cross-sectional	463	Not mentioned	Adapted Likert scale	Lack of time, lack of convenience, and concerns about what supervisors and other students would think.	Selection bias (43.6% response rate) Generalizability of the result is limited The design did not show

							causality
Menon et al., 2015 (163)	India	Cross-sectional	461	All students	BHSQ	Stigma, confidentiality, lack of awareness about where to seek help and fear of unwanted intervention	Recall and social desirability biases The design did not show causality of the variables
Bilican 2013 (27)	Turk	Cross-sectional	115	Convenient sampling	PCL-C	Seeking help from informal sources and denial of mental health problem	Recall and social desirability biases and lack of generalizability
Eisenberg et al., 2012 (28)	America	Cross-sectional	2,350	Random sampling	Questionnaire	Self-medication, time constraints and Considering the problem as normal Perceiving the problem as not serious	The design did not show causality of the variables Social desirability bias
Low et al., 2016 (168)	Malaysia	Cross-sectional	527	Convenient sampling	BASH-R	Self-reliance, skeptical, time, financial constraints, stigmatization or denial	Social and selection bias The design did not show causality
Arnaez et al., 2020 (169)	America	Cross-sectional	2551	Purposive	PDDS BCC	Internalized stigma was a major barrier to receive treatment	Social and selection bias The design did not show causality
Kasam et al., 2020 (170)	India	Cross-sectional	240	Convenient sampling	BACE	Stigmatizing beliefs, not to be open, preference for self-reliance, and difficulty in accessing help	Small sample size, selection bias due to convenient sampling and recall bias
Calloway et al., 2012 (110)	America	Phenomenological	37	Purposive	Semi-structured interviews	Stigma, confidentiality, self-reliance, treatment concerns and lack of awareness of services	Small sample size Sample selection bias associated with the sampling technique
El Kahi et al., 2012 (137)	Lebanon	Cross-sectional	521	All students	Self-reported questionnaire	Lack of confidentiality, embarrassment, being skeptical about counseling service, information gap, transportation problem, difficulties in making contact and cost	The design did not show causality Recall bias

2.5.6.3. Sociodemographic predictors to barriers to receiving professional mental healthcare

Barriers to receiving professional mental healthcare are associated with some demographic factors that exacerbate the level of student mental distress. For instance, El Kahi et al (137) found that treatment barriers such as confidentiality and embarrassment issues are associated with increased student age and those from urban areas. Another study has found that freshman students perceived more mental health treatment barriers compared to junior and senior students (29). The same study also found that there was no significant association between sex, residence, and family history of mental illness with regard to perceived barriers to mental health service.

2.6. Psychological intervention for university students

Mental health problems associated with anxiety and depression among higher education institutions students are a growing public policy concern across the world that benefits from evidence-based psychological interventions (171). Universities have access to psychological interventions through counseling offices and evidence from high high-income countries shows that the provision of psychological interventions was effective in reducing depression outcomes (26). The most commonly implemented interventions in high-income country universities were: mindfulness, cognitive-behavioral, internet-based therapy, psychoeducation, recreational programs, and relaxation (172). In addition to these treatments, the mhGAP intervention guide also recommends brief IPT, behavioral activation, and problem-solving counseling as psychological treatments for depression (57). However, there was no reported evidence about the applicability of IPT in higher education institutions, although it is recommended by WHO for treating people with mental distress, particularly for depression.

Although some psychological therapies, including IPT, have been used their effectiveness in reducing symptoms of anxiety and depression in LMICs (173), and their applicability within the university setting has not yet been well studied. A recent study in the general population has shown even the psychological intervention given by non-specialist health workers in LMICs was feasible and acceptable (174). But, these evidence-based psychological interventions have not been scaled up in an organized way to the university students in LMICs. The reason for the selection of IPT as an intervention option for the present dissertation work was it is adapted in

the Ethiopian context previously and it good fits with the main risk factors for mental distress reported by researchers in university students. Furthermore, the mhGAP intervention guide also recommends IPT as a treatment option for depression and anxiety.

2.6. 1. Cornerstone theories of Interpersonal Psychotherapy

Several theories have been provided explanations about the etiologies of mental distress, its consequences and possible solutions. Among these, three theories are more aligned with the premise that guides IPT. Psychiatric and interpersonal difficulties are associated with a combination of interpersonal, social, biological, psychological, cultural and spiritual factors (175). The three theories are: (a) Attachment theory states that mental distress is the result of insecure attachment in the childhood of students have with the surrounding individuals (unmet attachment needs); (b) Interpersonal theory describes maladaptive ways of communication with others lead students to face relational difficulties that in turn result in mental distress; and (c) Social theory, which implies students who have inadequate social support are more likely to experience mental distress (175). These theories are explained in detail below.

2.6.1.1. Attachment theory

Attachment theory was first coined by John Bowlby in 1969. He argued that affectional bonds are necessary for all human beings to survive; human beings have an innate tendency to seek attachments (66). The disruptions of the attachment bond lead individual to develop psychological problems (175, 176). Insecure attachment can be categorized as attachment anxiety and attachment avoidance, where both of them are associated with a higher prevalence of depression among young adults than people who have secure attachment (177). Every child benefits from a secure attachment to a caregiver/s from infancy through childhood and beyond, and the capacity to mentalize is the advantageous outcome of a secure attachment. Mentalizing is the ability to imagine motivation and perspective in our own and others' minds gained from the experience of being accurately understood and reflected back as a child, conferring "a capacity to learn from social experience enabling a person to respond effectively to adversity and challenge" and be resilient in the face of stress (178). Mentalizing is argued to be central to mental health, at the heart of human relatedness and the social systems in which we live including all psychotherapeutic interactions that create opportunities for personal narrative to be accurately

recognised, marked and reflected back (179). Although not invoked formally in IPT treatment it is the underpinning of all effective IPT (and other) therapists.

In the IPT context, the disruptions of emotional bonds can be correlated with interpersonal events such as grief, role transitions and interpersonal conflicts (66). IPT suggests that the therapist is sensitive and reflective, striving to understand with the client their suffering and difficulties with regard to others. Therapist and client work together to explore more successful ways of the client relating to others, so the client can build and maintain positive relationships which will diminish their symptoms and distress (123). The early adulthood developmental stage, where most university students are found is a time where their early attachments become declined and they struggle to begin new attachments. This transition period is difficult and can cause depression or anxiety among them (175). As a result, they may conflict with their family in the process of new identity formation and relationships formation (175). Stuart and Robertson (175) stated that individuals with maladaptive attachment styles are more likely to develop psychological distress when they encounter the death of a loved one including their parents. This is compatible with the hypothesis of IPT that describes clients who experience social disruptions face an increased risk for mental distress, which in turn has impacts on mental health service-seeking behavior, intention and can reduce social support (66).

2.6.1.2. Interpersonal theory

The development of the interpersonal theory was related to two scholars Harry Stack Sullivan in 1953 and Kiesler in 1979. This theory interrelates with the attachment theory with the assumption that "poor attachment styles lead to maladaptive interpersonal communication patterns that may lead to difficulties in current relationships" (175). Poor communication problem in two or more individual relationships is associated with the development of mental distress. Interpersonal theory recognizes the IPT principle that having sound communication skill with others optimizes interpersonal relationships that in turn decrease functional disability and mental distress (175). The quality of the relationships students have with peers, family, dorm mates, classmates and family will influence their mental stability.

In interpersonal theory, interpersonal communication is understood to depend on three specific aspects of relationships called meta-communications that determine the quality of relationships

between or among individuals. They are: (a) affiliation: indicates the degree of feelings that two or more individuals have toward one another. The degree of feelings could be positive (high affiliation) or negative (low affiliation); (b) status: refers to the degree of power between the individuals in the relationship (dominant versus submissive); and (c) inclusion: implies the extent to which the relationship stands as important to each individual (high versus low inclusion) (175). According to this theory, maladaptive interpersonal communication tends client to develop mental distress.

2.6.1.3. Social theory

Social theory is also a pillar for IPT as are the two theories mentioned above. The fundamental basis for this theory is that current interpersonal stressors lead to mental health problems (175). It stresses the importance of having social support (emotional, instrumental, informational and appraisal) in recovering from mental distress and maintaining psychological well-being. According to this theory, mental distress is associated with social context, where a deficiency in both quality and number of social relationships affect mental well-being (175). Evidence has supported the idea from this theory that having weak or no social support is a risk factor for mental distress (41, 91), whereas having a positive social network is a protective factor. Social theory assumes that psychological intervention, which helps clients to develop good social relationships with others will lead to improved functioning (175). This theory is compatible with IPT sharing the assumption that socially networking and supportive organizations will minimize or avoid the severity of mental distress and increases functioning (66).

2.6.2. Interpersonal psychotherapy

Historically, IPT was developed by Gerald L Klerman and Myrna M Weissman in the 1970s for the treatment of depression in the United States (180). IPT is a brief, manualized, structured, time-limited and relationally focused treatment (66). It is a non-pharmacologic intervention or a talk therapy given by trained persons for clients (individual or groups) with mental health problems. According to IPT, the sources of mental distress are best conceptualized using a bio-psycho-social-spiritual-cultural model (175). It has two guiding principles, namely: (a) depression is considered as a treatable medical condition and not the client's fault; (b) depression and interpersonal relationships have a reciprocal relationships (181). This therapy

is primarily designed to treat mental health problems and improve interpersonal functioning associated with unresolved grief, conflicts, role transitions and interpersonal sensitives (175), where it addresses one or a maximum of two focal areas for an individual in treatment. The four IPT focus areas are described in the following paragraphs.

Grief is defined as "a complex set of cognitive, emotional and social difficulties that follow the death of a loved one." (42). Although there is variation in experiencing grief, it is not uncommon to experience sadness, guilty feeling, confusion, sleep disturbance, anger, and anxiety by most people. However, if these symptoms stay for a prolonged time and resulted functional impairment, they may be identified as a mental health problem. DSM-5 (106) also recognizes the impacts of prolonged grief. IPT recognizes prolonged or complicated grief is associated with major depression that is caused by the death of someone close to the client (66).

During their time in university, many university students may experience the death of a family member that can cause complicated grief due to factors associated with close relationships, cause of the death/unnatural and being younger in the age of the deceased person (182). Previous studies have reported that the majority of the university students who lost a significant person by death experienced moderate perceived social support from family, friends and significant others (183, 184). Students with the highest prolonged grief disorders were least supported and most depressed (183).

Interpersonal conflict is inevitable between or among human beings especially the occurrence of this problem is common among university students, where they may have conflicts with classmates, instructors, friends and family. A study previously noted has reported major sources of conflict among university students include weak communication skills, lack of cooperation, unreturned greetings, refusal to perform chores, making too much noise in their room, gossiping about roommate and using roommate's property without permission (185). Another study from Bahir Dar University in Ethiopia studied interpersonal conflicts and ways of managing conflicts and reported that the major sources of conflicts were associated with ethnic differences, political motives, theft and borrowing money or materials (186).

Interpersonal conflict has three stages. These are: (a) renegotiation, which implies the client still trying to resolve the disagreement through discussion, but the client needs help from the IPT counselor to manage this problem; (b) impasse, at this stage the client feels stuck and he/she think nothing will works to solve the conflict, because discussion between the two parties has stopped; the counselor encourages the client to try one more time to find new ways of handling the problem; and (c) dissolution, this stage indicates the relationship between the client and the other person is terminated, so that one or other or both parties actively want to end-up the relationship. The IPT counselor tries to assess if there is any possible chance to save the relationship, because dissolution is usually the last resort (66). The goal of IPT in this focal area depends upon, identifying the stages of conflict and helping the client to resolve the conflict using counseling techniques.

Role transition is a common IPT focus among university students who are challenged by starting university life (187). Role transition has been defined as 'the capability to navigate change' (188). University students leave home for the first time, having left high school and their friends for the rigors of academic life, they need to establish new friends a key requirement for good mental health and success (187). Interpersonal deficit, also known as interpersonal sensitivity is the forth focal area of IPT. People with this focus are socially isolated and depressed but this is seemingly unrelated to a relational precursor, and they have little or no goal or plan to increase their interpersonal relationships (189). This is not considered to be a major problem in Ethiopia, where people live collectively.

IPT has three phases, namely: beginning, middle and termination phases, through which healing activities are accomplished step by step. IPT uses techniques specific for each focus and techniques that can be used for all IPT foci. These are initially psycho-education, and throughout therapy role-play, communication analysis, brainstorming, the use of clarification, problem solving and homework (175) may be used. In the beginning stage of IPT, psycho-education involves the counselor validating the client's suffering, associating the perceived causal factors with the worsening symptoms of mental distress, noting how the symptoms affect the client's relationships and functioning, support the client to have hope and confidence that he/she can recover from his/her mental distress, identify the

client's expectation from the intervention and encourage the client to speak of what he/she thinks and feels.

Role-playing: this is a technique in which both client and the counselor demonstrate the intended skill to examine the client's communication style, intention, expectation and mood to better communicate with another person. The main goals of using role-playing in IPT are: (a) to gather detailed information about the client's communication style; (b) to help the client to develop new insight into his/her interpersonal relationship; (c) to help the client to understand the reactions of others to his communications; and (d) to help the client practice new interpersonal communication skills (175).

Communication analysis: Is the central technique of IPT for examining and identifying problems in communication. It is important for the client to reflect on how they are interacting with another person (66) and to consider the interpersonal impact and resultant behavior and explore more adaptive alternatives to lessen mental distress by improving interpersonal communication skills (190). It has the following procedures: (a) explore the details of at recent specific conversation that was emotionally upsetting for the client; (b) link the upsetting conversation with the client's distress; (c) explore emotions, needs, expectations and interpersonal impacts; and (d) brainstorm or role-play to generate ideas for future conversation with revised expectations, empathy and clearer expression. This technique is very common for treating clients with interpersonal conflict.

Brainstorming: Is implemented with assumption that clients have the potential to generate alternative solutions to optimize good relational communication. These alternative can be explored in the therapy session and tried out in other relational settings, encouraging new solutions for relational difficulties (175). Brainstorming is commonly used in the IPT focus area of role transitions. Clarification: Is the most frequently used technique in IPT, where the counselor asks questions to better understand client's experiences, needs and expectations (175). In IPT, clarification consisted of direct questioning, emphatic listening, reflective listening and encouragement of spontaneous disclosure.

Problem-solving technique: Is likened to the proverb 'Give a person a fish and it will feed them for a day; teach a person to fish and it will feed them for a lifetime.' Problem solving

has five basic components: (a) a detailed examination of the existence and risk factors of mental distress; (b) brainstorming; (c) selecting a course of action; (d) monitoring and refining the solution; and (e) implementing the action (175). Homework: Is an interpersonal assignment given to the client to do before the next session that aims to increase the likelihood of the client engaging in communication or social activity. For instance, the homework maybe to contact three people in their class to have coffee with.

2.7. Feasibility and acceptability of Interpersonal Psychotherapy among adolescents

IPT has been adapted for different age groups in high-income countries and LMICs, including in Ethiopia for people with mental distress. Its adaptation and implementation increased over time for different psychiatric problems. For example, a scoping review reported that IPT is effective in treating depression and anxiety (191). Similarly, a meta-analysis reported that the pooled results of IPT indicated that adolescents who have received the intervention have shown a significant reduction of mental distress, improved functioning, improved social adjustment and an increased sense of self-efficacy (192). It also reported that the attrition rate was low (7%) indicating IPT was acceptable by adolescents. Another study reported that 73% of depressed adolescents met the eligibility criteria for IPT, 87.5% consented to participate, 93% completed the IPT intervention and the post-test result showed depression was significantly decreased (193).

Another study conducted on adolescents at the facility level reported that IPT was feasible and acceptable, where 90% of the participants completed the intervention and they were very satisfied with the treatment given (45). The same study has reported that IPT showed promising results in significantly decreasing symptoms of depression and improving social functioning. Similarly, a study from Finland reported that IPT was effective in reducing symptoms of depression and improving functioning and psychological well-being (194). This study has also found that 89% of the participants completed the treatment and the fidelity of the intervention was good. Furthermore, two meta-analysis studies reported that IPT was effective in reducing symptoms of depression, improving functioning and preventing relapse of depression (192, 195).

The researcher reviewed and summarized the result of 9 articles in table 4 below. Except for one study (48), all studies were conducted in high-income countries, indicating that there is

insufficient information with regard to LMICs. The majority of the studies employed a RCT design. The age range of participants ranged from 12-20 years, the sample size ranged between 10 (45)-186 (196), three studies were conducted at secondary schools, one study was conducted in a university setting and four studies used individual counseling. The intervention was between 6-24 sessions delivered weekly talking 45'-90' minutes per session. IPT showed significant mental health outcomes changes. The major gaps that the researcher observed were: (a) IPT was not sufficiently implemented in university setting both in high-income countries and LMICs, despite the focus areas of IPT being highly prevalent among students and (b) there are a lack of IPT studies in LMICs.

Table 4: Summary of studies on feasibility and acceptability of Interpersonal psychotherapy

Author	Country	Study design	Sample	Sampling technique	Setting	Total sessions	Length of session	Format	Measures	Intervention provider	Outcome evaluator	Outcomes	Results	Limitations
Mufson et al., 2015 (45)	America	One-group pretest/ posttest design	10 12-19 years	Purposive	Primary care	6 weekly session	60’	Individual	CDRS-R CGAS SAS-SR BDI-II	Psychologist	Independent assessor	Depression Functioning	90% completion rate All participants were very satisfied Improved depression and function	No comparison group Small sample No follow-up Fidelity was not assessed
Parhiala et al., 2019 (194)	Finland	RCT	55 12-16 years	Purposive	School based	6 weekly session	45’	Individual	BDI YP-CORE CGAS ECCI	Psychologists Social workers School nurses	Independent assessors	Psychological distress Functioning Feasibility Acceptability Fidelity	Decreased symptoms of depression and improved function 89% completion rate adolescents were satisfied	Small sample size Outcome assessors were not masked. Fidelity was not assessed
Bledsoe et al., 2017 (193)	America	One-group pretest/ posttest design	14 14-20 years	Purposive	Community based	9	60’	Individual	CESD HRSD SAS IIP BAI	Social workers	No independent assessor	Depression Anxiety Feasibility Social adjustment Interpersonal difficulties	Decreased symptoms of depression 73% met eligibility criteria 87.5% consented to participate 93% completed IPT	Small sample No comparison group No follow-up Assessor was not blinded Fidelity was not assessed

O'Shea 2015 (49)	Australia	RCT	39 13–19 years	Purposive	School based	12	50-60'-individual 90'-group	Both	K-SADS BDI-II SCAS-C CGAS	Psychologists	No independent assessor	Depression Anxiety Global functioning	Significant improvements in depression and anxiety Improved function	Small sample Fidelity was not assessed
Young et al., 2016 (196)	America	RCT	186 Mean 14 years	Purposive	School based	10	45–90' group 30-50' individual	Both	CES-DK-SADS-PL CGAS	School counselors	Independent assessors	Depression Overall functioning	Significantly decreased depression symptoms Significantly improved function	50% did not consent Short follow-up sessions
Gunlicks et al., 2016 (197)	America	RCT	15 12–17 years	Purposive	Hospital	14	45'	Both	CDRS-R CGAS CBQ CSQ-8	Clinical psychologist	Independent assessors	Depression General functioning Satisfaction	Improved depressive symptoms and general and family function IPT was feasible High satisfaction	Small sample No follow up sessions Lack of generalizability
Miller et al., 2018 (198)	America	RCT	19 12–17 years	Purposive	Psychiatry clinics	24 weekly	45-60'	Individual	CDRS-R SCARED CGAS	Clinicians	Independent assessor	Irritability Anxiety Impairment Satisfaction	80% completion rate Participants were satisfied Decreased symptoms	Underrepresentation of males Small sample No follow-up
Gunlicks-Stoessel et al., 2019 (123)	America	RCT	40 12–17 years	Purposive	Hospital	12	45'	Both	HRSD ECR-R	Trained psychologists	Independent assessor	Insecure attachments Depression	Reduction in depressive symptoms Decreased anxiety and avoidance attachments	No follow up Absence of comparison group
Ferizi et al., 2015 (48)	Iran	RCT	24 mean age of 21 years	Convenience sampling	University	8 weekly session	90'	Group	BDI	Clinical psychologist	Not mentioned	Depression	Decreased symptoms of depression	Small sample size Lack of controlling some extraneous variables

2.8. Interpersonal Psychotherapy adapted for Ethiopia

IPT has been adapted to the Ethiopian context in collaboration with Toronto Addis Ababa Psychiatry Project (TAAPP) and the Biaber Project and named as IPT-E (38). The TAAPP was founded in 2003 to assist build sustained capacity for psychiatry residency training and mental health services in Ethiopia. Since the inception of the first Ethiopian psychiatry program in 2003, the number of psychiatrists in Ethiopia has increased (199). Then, IPT is included in the TAAPP curriculum and its' training courses given for psychiatry residents. The train-the-trainers workshops have been given for psychiatrists, where the majority of the country's psychiatrists participated in this training. Clinical field test spanned for six years and focus groups with 25 key informant Ethiopian psychiatrists who practice both urban and rural settings provided feedback to improve treatment validity, acceptability, and relevance (38).

Through the Biaber project that aimed to scale up IPT in Ethiopia, training materials were prepared to disseminate the knowledge and skills of IPT-E for midlevel mental health specialists and front-line primary health workers to treat clients with CMDs (38). As a result, the Biaber project has provided IPT-E training many times for these health workers throughout Ethiopia. The Biaber project has a slogan of *"Der biaber anbessa yaser"* which is an Amharic saying that translates into English as, *"together we will weave a spider web to tie a lion."* This expression evokes the intentions of "The Biaber Project," to tame the lion of untreated mental illness (38).

The IPT-E, which is culturally adapted talk therapy is a brief manualized evidence supported intervention used to treat clients with CMDs associated with loss, life transitions/role changes, and interpersonal conflicts (38). The IPT-E manual has eight modules, four that contains a basic and interactive orientation to mental health in Ethiopia, including mental health service delivery, mental health risks and resilience, the therapy relationship, safety issues, mental health screening and four modules on the IPT-E beginning phase, middle phase, termination phase, using relevant cases and includes an evaluation of IPT-E training outcomes. In addition, the manual has Amharic language case-based training videos and action note (Appendix W).

IPT-E has counseling techniques used for all clients receiving IPT-E independent of the specific focus of therapy, namely: role play, brainstorming, communication analysis and recruiting psychosocial supports. The first three techniques were discussed in the literature part of this

dissertation. Psychosocial support: Is a counseling technique in which the client with mental health problem receives support (emotional, economic, or social) from the surrounding people or organization/s through creating a social network system, which is very common in the collective society, like Ethiopia. When university students experience mental distress, they need to recruit and receive support from others to better cope with their mental distress. Receiving support from others enables these students to decrease their loneliness, sadness, or shame and increases the self-esteem and resilience. The sources of social support are friends, instructors, families, relatives, religious leaders, the experience of church, the mosque and other student or community based organizations. In IPT-E, the identification of individuals or organizations to support clients was done using interpersonal inventory or closeness circle.

The interpersonal inventory (closeness circle) serves to identify the people and relationships in the client's life, those who are supportive and those who are not. It also identifies which relationships are stressful and should be revisited in greater depth. Practically, this can be done by drawing three concentric circles on a sheet of paper, placing the client with an 'X' in the center. The client is encouraged to identify the people in their life, the counselor asks the client to describe each individual and relationship and mark in one of the circles the sense of closeness they feel toward the person described. If there is an important relationship that is placed in a distant circle (far from the 'X'), or omitted such as a friend or close family member, then the counselor asks about this relationship. The counselor asks about the expectations that the client has toward each relationship; the positive and negative aspects of the relationship; their view of problems between them and how they imagine things might change (Appendix O 1).

IPT-E has three counseling phases. The IPT-E beginning phase includes screening a client for mental distress; how to select cases appropriate for IPT-E; ensuring consent to participate in the treatment; and screening for client safety such as suicide, domestic violence, harming others and substance use. The counselors understand clients' problems, symptoms, functioning and explanatory models using a Treatment Tracking Form. They also conduct an interpersonal inventory and provide tailored psycho-education for the client. Finally, the counselors formulate one or maximum two IPT-E focus area/s for the next middle phase.

The middle phase of IPT-E is the heart of the intervention, where general techniques such as role play, psychosocial supports, brainstorming, and communication analysis were practically implemented on the selected IPT-E focus area/s. This occurred in combination with several techniques to address the focus area specifically. In this phase, symptoms and functioning are tracked at each session using the TTF of IPT-E. In the termination phase, the counselors review the client's efforts, progress, therapeutic achievements and changes made in the beginning and middle phases. For further information, see table 5 below.

Table 5: Tasks included in the Interpersonal Psychotherapy adapted for Ethiopia phases

Tasks	Phases of IPT-E		
	Beginning phase (1-2 sessions)	Middle phase (3-6 sessions)	Termination phase (7-8 sessions)
Establish therapeutic alliance	X		
Screen client for mental distress	X		
Select cases appropriate for IPT treatment	X		
Consents to participate in treatment	X		
Screen for client safety	X		
Learn about the client's problem	X		
Interpersonal inventory/closeness circle	X		
Psycho-education	X		
Choose the IPT-E problem area/s			
✓ Grief	X		
✓ Interpersonal conflict			
✓ Role transitions			
Treat the problem using therapeutic techniques for each focal area		X	
✓ Psycho-social support			
✓ Brainstorming			
✓ Communication analysis			
✓ Role play			
Identify people in the client's life		X	
Review client's effort and progress			X
Terminating the intervention			X
Evaluating the change after termination			
✓ Change in symptoms of mental distress			X
✓ Change in functioning			
Develop contingency plan if symptoms worsen			X

Throughout treatment the counselor has an IPT-E treatment checklist to note the various IPT-E activities used in the counseling process. The IPT-E was conducted on a weekly basis and lasted for 40-60 minutes per session. The number of sessions attended in the IPT-E ranged from 4-8. IPT-E has a screening tool which consists of 6-items used to identify participants with mental distress. Both the screening and treatment were given by four counselors under the close

supervision of the researcher in their own counseling offices, which were well furnished, ventilated and attractive.

All the counseling offices are situated in the same building as the student's clinic, which promoted a robust referral system and avoided stigma of student clients having separate mental health services. The sessions were not audio recorded, because clients were not comfortable with this. The delivery of the IPT-E manual in every session was documented by the counselors using the IPT-E treatment checklist. All counselors had their clients' cell phone numbers to remind them the time of their appointment. Clients who had to miss a session due to unexpected events agreed in advance to communicate with his/her counselor via cell phone and rebook for the next appropriate day. The researcher supervised the counselors' work every week.

2.9. Conceptual framework of the study

The researcher built the conceptual framework based on the previous literature findings. This framework connected different variables that link with the present study. The challenges that cause mental distress among university students are associated with bio-psycho-social-spiritual-cultural model (3, 17, 18, 23, 41, 83, 123, 200). The biomedical model states that anxiety or depression is resulted from chemical imbalance in the brain, brain injury or due to hereditery predisposition. Thus, the biomedical factors associated with mental distress among university students are: sex (19, 41, 78, 80, 81, 83), age (75, 81), substance use (19, 77, 79, 83, 84, 91, 92) and family history of mental illness (18, 41, 83). Biomedical model cannot fully address the occurrence of mental distress. Psychological well-being plays a great role in optimizing the mental health of university students which in turn increases their academic achievement. Easily adapting to the new environment, avoiding excessive worry or thinking too much and experiencing normal grief at the time of losing a close person are common psychological phenomena among most university students. However, studies have reported that when university students experience prolonged grief, when they are unable to adapt to university culture and experience excessive worry or thinking too much about their existing and future situations, they encounter mental distress (20, 75, 121).

Social factors, including interpersonal conflicts (3, 18, 19, 41, 75, 83, 84, 88, 119, 120), poor social support (41, 80, 81, 83, 91), academic problems (41, 72, 75, 83, 92), death of relatives (20, 75, 121) and economic hardship (19, 41, 72, 80, 83, 88) are also the most frequently reported risk factors for experiencing mental distress among university students. Solving or adapting to these problems has positive impacts on their mental health outcomes. For example, a recent study reported that university students who had a good relationship with their family and friends had positive self-esteem and high resilience, respectively (8). The same study has reported that the good relationship students have with their family is significantly associated with high psychological self-care that in turn improved their mental health outcomes. On the contrary, another study found that participants who reported they did not have a very close relationship with their family were at a three-fold increase in the risk of developing depression than participants who had a very close relationship with their family members (201).

Similarly, spiritual factors are also associated with mental distress either positively or negatively. Spiritual connectedness helps people strengthen their resilience to mental distress. For example, Hovey et al (202) reported that high religiosity and spirituality are associated with a reduction in depressive symptoms. Other studies have reported that lack of religiosity or not following a religion has significant impact on developing mental distress (3, 77, 83, 91). So, through creating a social support network, it is possible to help individuals get relief from their mental distress, and acquire emotional and material support from others (203). Evidence shows that people with a high quality of social support manifest less emotional distress and depression (203, 204). In IPT, by helping the client improve their social supports, it is possible to help those students who are distanced from their church or mosque by connecting with religious leaders and friends who regularly attend church or mosque. Doing this initiates these students to use positive religious coping styles that are used to decrease their mental distress. The finding indicated that students who used positive religious coping styles showed more symptoms reduction in mental distress, whereas those students who used negative religious coping styles tended to have increased symptoms of anxiety and depression (205).

The perceived bio-psycho-social-spiritual-cultural factors that university students have toward their mental distress have an impact on the types of mental health services they prefer, although this is not the concern of the present study. For instance, prior studies have identified that most people who believed mental distress has resulted from spiritual and cultural factors, tend to prefer informal treatment sources, such as religious leaders and traditional healers (148, 149). Whereas, those who attributed mental distress to biomedical factors preferred to contact a physician for medical treatment (206, 207). Individuals who attributed mental distress to psychosocial factors tend to prefer professional mental health intervention, including psychotherapy (147, 208).

School-based IPT studies have shown promising results in solving the above-mentioned factors through communication analysis, creating a social support network, brainstorming, problem-solving and role-play techniques among adolescents (48, 49, 194, 196). The degree to which adolescents receive support from others, including from teachers and other students within their school environment plays a great role in coping with stressful situations. For instance, studies have reported that receiving adequate social support from parents, classmates and close friends

enabled students to significantly reduce their levels of depressive symptoms (209, 210). Having enough social support contributes to better mental health and functioning outcomes (211). As well, receiving adequate support from teachers and other students served as a protective factor from experiencing mental distress and in maintaining emotional intelligence in the school setting (212-214). Longitudinal studies have shown that having good interpersonal relationships with teachers and peers decreased the risk of depressive symptoms, fostered a felt sense of connectedness and thoughts of and suicidal attempts among adolescents (215-217). The IPT studies also showed that most adolescents had significantly decreased symptoms of mental distress and improved functioning after receiving the intervention (45, 194).

The explanatory models of mental distress shaped by culture determine the need to receiving professional mental healthcare; determine the value of care received (175) and the type of help to seek. They determine the preferred type of support system and the types of coping styles to manage mental distress (218). For example, in some cultures seeking professional mental health services for psychiatric disorders are considered as a sign of weakness so that people preferred to seek support from family and religious leaders (218). The explanatory models of mental distress people have associated with symptoms severity of mental distress and barriers to receiving professional mental health treatment (148, 201). For instance, previous studies have reported that university students considered mental distress as a normal (10, 28) and even they deny their existing mental health problems (27).

Positive coping strategies, such as support seeking from others, problem-solving, listening to music songs, reading books, doing physical exercise, fasting, listening to religious songs, reading religious books, watching movies, and prayer are used to get relief from mental distress among university students (72, 120, 133-135, 205). However, negative coping styles, including substance use, social isolation, denial, sleeping less, procrastination, and self-blaming escalate the severity of mental distress among university students (72, 132, 134, 135). Hence, in the provision of mental health interventions, considering the explanatory models the students have toward their mental distress are vital to bringing sustainable mental health outcomes. As the evidence shows mental health interventions which are culturally tailored are four times more effective in improving mental health outcomes, because they decrease barriers to receiving treatment (219).

The causal attribution beliefs of mental distress are also linked with more treatment barriers that block or delay receiving mental healthcare (29, 137). The existence of treatment barriers in the university exacerbates the severity of mental distress that widens the mental health treatment gap (27, 164). However, accessing feasible, acceptable, and culturally sensitive IPT addresses these treatment barriers, decreased symptoms of mental distress, fulfill mental health treatment need, change explanatory models of mental distress, and lead to improve outcomes, functioning, improved education achievement, social activities, interpersonal relationship, and motivation to work (45, 49, 151, 192-194, 196, 198). Whereas, the inabilitiy to fulfill students' professional mental health needs may lead to increasing severity of mental distress and related outcomes such as withdrawal from the university, poor interpersonal relationships, poor academic functioning, teenage pregnancy, suicide attempts and substance use (30, 66, 127). For further information, see figure 2 below.

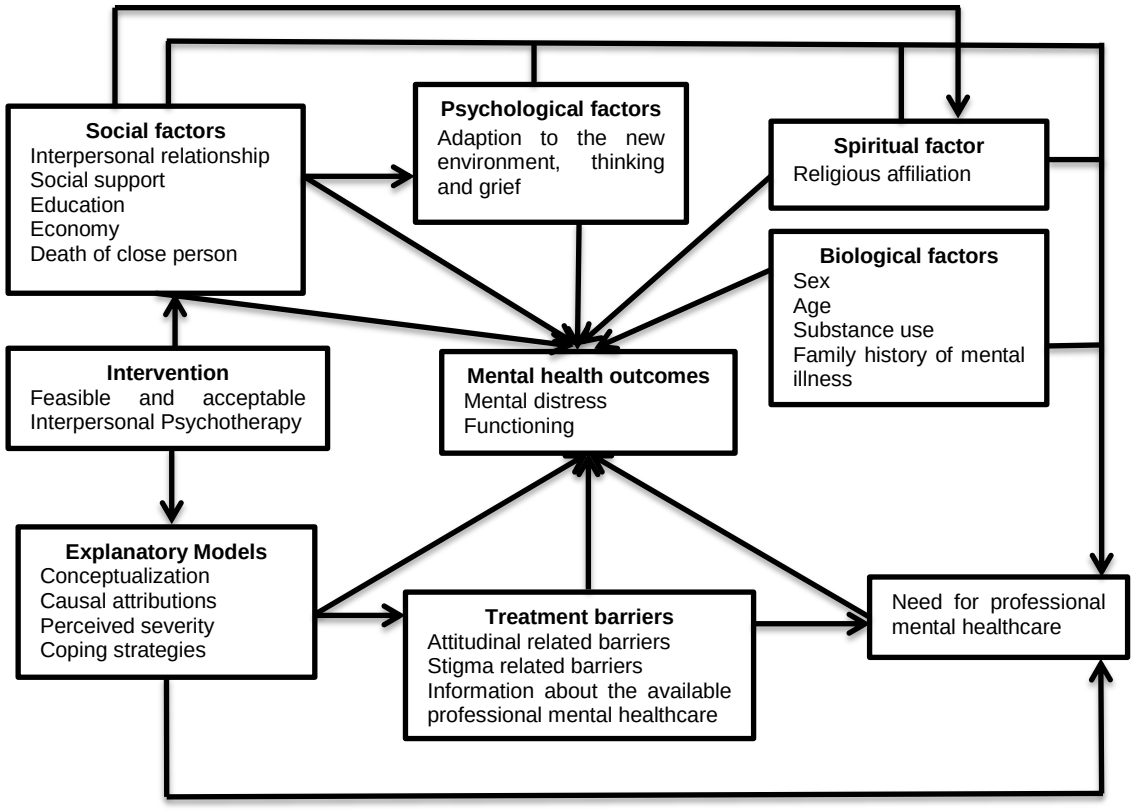

Figure 2: Conceptual framework of the study

3. OBJECTIVES OF THE STUDY

3.1. Research objectives

3.1.1. General objective

The general objective of the present study was to examine the implementation of IPT-E for students with mental distress.

3.1.2. Specific objectives

This study addressed four specific objectives.

1. To assess the prevalence of mental distress, need and barriers to mental health treatment for mental distress among undergraduate students in WSU **(Study One)**.
2. To explore explanatory models of mental distress among undergraduate students in WSU **(Study Two)**.
3. To evaluate the feasibility and acceptability of IPT-E among undergraduate students in WSU **(Study Three)**.
4. To examine the preliminary outcomes of IPT-E with regard to symptoms and function among undergraduate students in WSU **(Part of study three)**.

4. RESEARCH METHODS AND MATERIALS

4.1. Study setting and context

The present study is carried out at WSU, which is one of the public Ethiopian universities located in Wolaita Sodo town of Wolaita zone, Southern Nations, Nationalities and People Regional State (SNNPR). The zone has received zonal status in 2000, since then it has shown rapid development, especially the capital town where an ethnic diversity of people live harmoniously together. The societies in this zone are composed of 200 clans, where similar clans do not marry each other (220). It is the most densely populated area in Ethiopia that covers a total area of 4541-kilometers square with an estimated population of 1,527,908, of whom 752,668 are males and 775,240 are females (221).

Wolaita zone has 12 districts (namely: Sodo Zuria, Humbo, Offa, Kindo Didaye, Kindo Koyesha, Damota Sore, Damota Gale, Damota Woyde, Damota Pulasa, Duguna Fango, Boloso Sore and Boloso Bombe) and three towns (namely: Areka, Boditi and Wolaita Sodo) that are structured for administrative purpose. Wolaita Sodo is the capital town and economic and political center of the zone located 320-kilometers south of Addis Ababa through Butajira to the Alaba road. The main source of livelihood for the majority of the city dwellers is trade, whereas agriculture (crop production, such as *Enset* also known as false banana) followed by small-scale animal husbandry are the main economic sources for the rural people that account for 89% of the total population. The average annual rainfall in this zone is estimated to 956 millimeters in the rainy season from June to September and the mean annual average temperature is 12.6^{o}C (222). The majority of people in this area are Protestant Christians, followed by Orthodox Christians and Muslims. The most widely spoken language is Wolaitigna and the official working language is Amharic language, the official language of Ethiopia. The following figure 3 shows the geographical location of the present research study area.

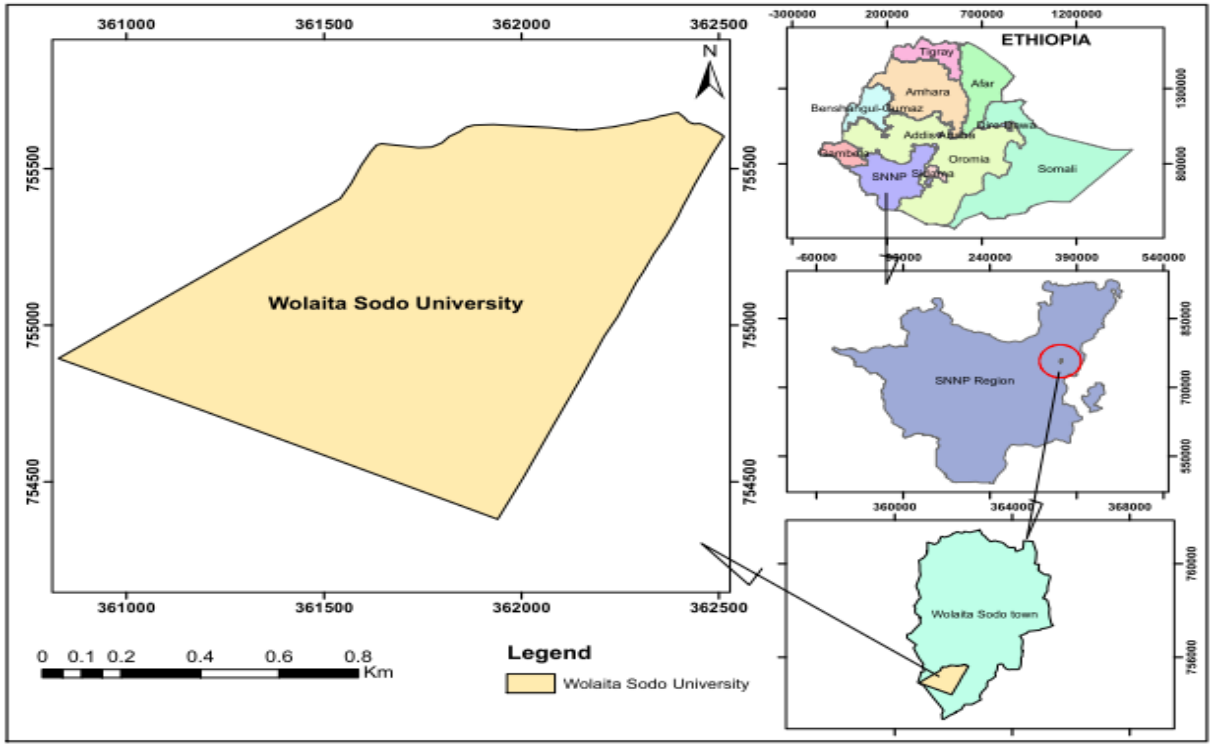

Figure 3: Geographical location of the study area

Wolaita Sodo zone has one non-profit public university, the WSU. The University was established in the 2007 Gregorian calendar and began with an intake of 801 students (609 male and 192 female) in four faculties and sixteen departments in the undergraduate program. It has now, undergraduate and graduate programs in six colleges and five schools with more than 1300 academic staff and 2500 support staff. At the time of data collection for the current study, the number of total students in all programs was 28,789, where 7321 male and 4707 female registered as undergraduate students. Dedicated to provide quality education, WSU is fully engaged in conducting research and delivering community services.

The University has health service facilities, including four full-time counselors (psychologists at Master's and Bachelor degree level) with four counseling offices (one conseling office was established in 2007 and the remaining three were established in 2020) to provide free counseling services for students with mental health and psychosocial problems. Three of the counselors are male and one is female. The University has also established a new center called "the mental health and psychosocial support for university students" designed to help students with Corona-virus related issues. Apart from this, WSU has a referral teaching hospital (named the Otona hospital) that provides health care services, including outpatient and inpatient psychiatric care for

the surrounding community and the students. The University has a students' clinic that provides healthcare services for students and closely works with the students' counseling offices. This clinic has a referral system with the Otona hospital for students with severe physical and mental illnesses.

4.1.1. Context of mental health in Ethiopia

Ethiopia is the second most populous country in Africa, where the total population is approximately 109 million, where 67% of the population is under 30 years of age and 80% of the population live in rural areas (223). As in other low-icome countries, the prevalence and burden of anxiety and depression in Ethiopia is high. For example, a systematic review and meta-analysis study reported that the pooled prevalence of these disorders among the general population is 22% (224), which is associated with risk factors such as food insecurity (225), poverty, violence, migration and substance use (226).

The burden of depression alone contributes to about 6.5% of the burden of diseases (226), however, very few people are able to receive professional mental health services. Evidence showed that the pooled prevalence of help-seeking behaviors of people with depression is 38% in which majority of people with mental illness first contact non-professional care providers such as religious leaders and herbalists (227). Because there are as yet few professional mental health treatment services available in the country, seeking help from mental health professionals is the last resort for many people in Ethiopia i.e. if the client remains affected, he/she will go to trained psychiatric care providers, the majority of which are concentrated in the capital city of Ethiopia, Addis Ababa (228). People struggling with mental health issues can experience stigma, discrimination and violations of their rights in various ways, although the vision of the National Mental Health Strategy is to value, protect and promote mental health and protect the rights of people with mental illness in Ethiopia (229).

To scale-up the limited mental health services across the country, the government of Ethiopia has planned to expand 100% of mental healthcare by 2020 (230). The National Mental Health Strategy was developed in 2012 by the Federal Ministry of Health aimed to decentralize and integrate mental health services at the primary healthcare level (228). Now, this strategy is revised for the second time and aimed to promote mental health, prevent mental disorders,

provide care and enhance recovery of persons with mental health conditions and psychosocial disability starting from 2020-2025 (229). In the second edition of the National Essential Health Services package prepared in 2019, CMDs, including depression are given due attention and psychosocial interventions are identified to be implemented for these disorders (223).

Currently, the number of universities and students enrolled in Ethiopian universities are increasing. For example, the country has more than 45 public universities, where more than 392,788 (255,657 male and 137,131female) undergraduate students are enrolled and more than a hundred thousand students are graduating from universities every year. These students are young adults, economically dependent on their family and full-time learner; they came from rural-urban backgrounds, from different cultures and ethnicity, speaking a variety of languages. At the university level, mental health services have been established to support students with mental health problems, although the quality of the service provided is under question. As a result, the treatment gap is high among Ethiopian university students, where majority of the students receive treatment from informal sources such as family, friends, relatives and religious leaders (25).

4.2. Study design

In the present study, a mixed-method design called explanatory sequential design was used, where first quantitative data was collected and analyzed, followed by a qualitative approach to get detailed information on the topic of the study (231). The rationale for using this design is that the quantitative data addressed the prevalence of mental distress, need and barriers to receiving professional mental health services that need further elaboration with regard to how the students conceptualize mental distress. How they perceived its causes, symptoms, onset, severity and impacts and what help-seeking behaviors and coping mechanisms they utilize. The quantitative results of study one guide the selection of the qualitative data sources and data collection of study two and the qualitative findings of the study play a crucial role in interpreting the quantitative findings of study one (64). The findings of studies one and two associated with the existence of high prevalence of mental distress, the need to receiving professional mental healthcare, treatment preference (brief, individual format, duration of a session and frequency of the sessions), and the report of perceived causes of mental distress that fit with the IPT-E focal areas led to conduct study three. Study three used a pre-post quasi-experimental design to

evaluate the feasibility and acceptability of the psychological intervention, IPT-E. The specific design used for each study is noted in table 6 below.

Table 6: Summary of the study designs used in each phase of the study

Study number	Title	Design	Data collection time
Study one	Mental distress, need and barriers to receiving professional mental healthcare among university students in Ethiopia	Cross-sectional	December 2017 to January 2018
Study two	Explanatory models for mental distress among university students in Ethiopia	Phenomenological	December 2017 to January 2018
Study three	Feasibility and acceptability of brief individual interpersonal psychotherapy among university students with mental distress in Ethiopia	A single group pre-post-test quasi-experimental design	December 2019 to February 2020

4.3. Study one: Mental distress, need and barriers to receiving professional mental healthcare among university students in Ethiopia

The objective of this study was to assess the prevalence of mental distress, perceived need and barriers to receiving professional mental healthcare. The data were collected from December 2017 to January 2018.

4.3.1. Sample size

A sample size of 1135 was estimated with an assumed prevalence rate of mental distress 40.9% among undergraduate students in Gondar University (83), precision of $\pm$ 3%, 95% confidence interval and 10% non-response rate are considered. The sample size was calculated using a single proportion formula $n = z^2pq/w^2$ with 95% confidence interval, a standard normal value of (Z) = 1.96, margin of error (W) = 3%, p = 0.49 and q = 1-p. For the other two objectives (perceived need and barriers to receiving mental healthcare) separate sample sizes were not estimated. All the participants who were screened positive for mental distress ($\geq$ 8) were used as the denominator to estimate the proportion of students having a perceived need for professional mental healthcare. Those participants who had mental distress symptoms and who did not receive mental health services from professionals in the past three months were eligible to be part of the study.

4.3.2. Sampling technique and procedures

A stratified multi-stage sampling technique was used to recruit study participants. A list of students' names from first to fifth years was obtained from the registrar office of WSU. The first participant's name was selected randomly; the remaining participants were selected using systematic random sampling. The first step was stratifying undergraduate students by their schools/colleges (six colleges and five schools). For the second step, the total sample size was allocated into the 11 strata using probability proportional to the number of the students as a measure of size. The third step was selecting participants from each school and college based on the proportion of the size of each department. The fourth step was selecting participants from first to fifth-years based on the proportion to each year. Then, the final step was randomly selecting the first participant and systematically selecting the rest participants from each level and section of the study year.

4.3.3. Data collection instruments

The survey questionnaire consisted of four parts: Demographic Characteristic Questionnaire: used to document variables including participants' sex, age, religion, ethnicity, marital status, current place of living, origin, year in university, substance use and family history of mental illness.

Self-Reported Questionnaire (SRQ-20): Is a screening tool for mental distress developed by WHO (232). SRQ-20 is a self-report instrument with 20 binary responses (Yes/No) questions. It has the potential to detect cases and non-cases with sensitivity ranging from 63-90 and specificity ranging from 44-95 (233). WHO recommends SRQ-20 as a reliable and valid instrument to detect general CMDs (233). It was developed specifically for use in LMICs (232). SRQ-20 has been previously translated into Amharic language in Ethiopia, locally validated (234, 235), and used in different community (236-238) and institution-based surveys (83, 84, 239, 240) with cut-off points $\geq$ 4 (240), $\geq$ 7 (239), $\geq$ 8 (83) and $\geq$ 11 (84). SRQ-20 has good psychometric properties (i.e. sensitivity 86% and specificity 84%) for detecting individuals with mental distress in the Ethiopian population with an optimal cut-off point at $\geq$ 8 (241). To identify cases in the current study, a cut-off point of $\geq$ 8 was used based on a previous validation study of SRQ-20 in Ethiopia that resulted in good sensitivity and specificity using a cut-off point of 8

(241). The pilot data collected from 38 undergraduate students in a similar population but in a different setting to the current study showed that the internal consistency of SRQ-20 was 0.77.

The Perceived Need for Professional Mental HealthCare Questionnaire: Used to assess the perceived need for professional mental health services in the past three months. It has been used in the previous studies (28, 242). The question is phrased as follows: 'Was there a time when you thought you should see a doctor, counselor or other health professionals for your mental distress, but you did not go in the past three months?' with the response options of Yes/No. "Yes" response implies the perceived need for professional mental healthcare but that was not received in the past three months, whereas "No" response implies no perceived need for professional mental healthcare for mental distress. Therefore, the perceived need for professional mental healthcare in this study implies the number of students who reported "Yes" option. In line with this instrument, some questions were incorporated to measure students' treatment preference, treatment modality, the total number of sessions, duration of a session, frequency of sessions, the preferable place for counseling, and help-seeking behaviors.

Barriers to Access to Care Evaluation (BACE-III): BACE was originally developed to identify barriers to receiving professional mental health service for people with mental health problems (161). It has 30 items to be completed by the participant (self-complete measure). This instrument has good psychometric properties (i.e. validity, reliability, and acceptability) (161). BACE-III has three dimensions of potential barriers of stigma (12 items), attitudinal (10 items) and instrumental (8 items) related. This instrument asks about a range of issues that have ever stopped, delayed or discouraged an individual from receiving professional care for a mental health problem in the past three months. The response scale ranges from 0 (not at all) to 3 (a lot); the higher score indicating a greater barrier. Five of the thirty items contain a fifth option: "Not applicable". Findings for each barrier are presented in three ways: mean score for the item, barrier to any degree (the percentage of answering 1, 2 or 3) or major barrier (the percentage of answering 3) based on BACE-III manual for researchers.

For the current study, BACE-III was translated into the Amharic language by two Amharic language experts whose first language is Amharic and their second language English. One expert who knows the subject matter translated the instrument based on the BACE-III translation guide.

The masked back-translation was made by two English language experts and one mental health expert. The back-translated instrument was compared with the original version of BACE-III and the consistency of the translation was agreed upon. The translated BACE-III was piloted on 40 undergraduate students in a similar population but in a different area of the current study setting. Its internal consistency was 0.85.

After the pilot study, the researcher examined the applicability of each question in the university set-up and noticed that item number 27 and 28 need some modifications. Discussion was made with a mental health expert who has experience of adapting mental health instruments. Then, question number 27 which says 'difficulty taking time off work' was modified as 'difficulty taking time off education' and question number 28 which says 'concern about what people at work might think, say or do', was modified as 'concern about what students might think, say or do'. The final version of the instrument was administered to students who scored $\geq$ 8 on the SRQ-20 and who had a perceived need (those who answered "Yes") for professional mental healthcare in the past three months of the study period. The internal consistency of the overall BACE-III scale after the revision was 0.85, whereas for stigma sub-scale = 0.83; attitudinal sub-scale = 0.67 and instrumental sub-scale = 0.60. Those participants who answered "No" for the perceived need for mental healthcare measuring questionnaire were asked 'In the past three months, did you receive help from a psychologist, doctors, friends, family, religious leaders or traditional healers?' by skipping the BACE-III questionnaire.

4.3.4. Training of data collectors and data collection procedures

Classroom representatives served as data collectors. A half day training was given by the principal investigator to data collectors about the aim of the research, the contents of data collection tools, how to approach participants, ethical issues and responsibility to minimize missing data. The classroom representatives both males and females were contacted by the researcher through the help of their department heads, because they had cell phone numbers of each classroom representative. Then, with the assistance of the classroom representatives, the student participants came to the selected lecture halls and classrooms and the data collectors explained the aim of the study. Finally, after verbal agreement was received, the data collectors started to collect the data by explaining the instructions of all questionnaires with the close

supervision of the principal investigator. To protect the confidentiality of the participants, personal identifiers were not included in the questionnaires; instead, a code was applied.

The data collection was carried out well before approaching the students' final examination to avoid an inflation of the prevalence of mental distress. Those who scored $\geq$ 8 on SRQ-20 were asked to answer the questions about the perceived need for professional mental healthcare and then answer questions in the BACE-III questionnaire. Participants who answered "No" the question about the perceived need for professional mental healthcare skipped the BACE-III and answered why they did not need mental healthcare in the past three months. Finally, after the participants completed the self-administered questionnaires, the data collectors immediately checked the existence of incomplete and missed information before the participants left the room.

4.3.5. Data analysis

Data cleaning and cross-checking were done before analysis using Statistical Packages for the Social Sciences (SPSS version 20). Descriptive statistical measures (i.e. percentage, frequency, mean, and standard deviation) were employed to summarize demographic characteristics of the participants and to identify barriers to mental health care services. Pearson chi-square test was used to examine the association between demographic variables with mental health care seeking intention and with the five most commonly reported barriers to receiving mental health services. Furthermore, multiple linear regression was used to model the association between demographic variables with a mean score of BACE-III sub-scales. Univariate regression analysis was used to identify potential candidate variables for multivariable linear regression with a p-value of < 0.2 by referring to previous published articles (243, 244). Then, further analysis was carried out using multivariable linear regression. Similarly, the association between demographic factors and mental distress was analyzed using logistic regression; univariate logistic regression was used to identify potential candidate variables for the multivariable model. Only those variables their p-values < 0.2 (41, 79) were modeled in multivariable logistic regression. Odds ratios are used to determine the strength of associations in the selected variables with a 95% confidence interval (CI). The result was reported as being statistically significant whenever the p-value is less than 0.05.

4.4. Study two: Explanatory models of mental distress among university students

This qualitative study aimed to explore the explanatory models for mental distress used by undergraduate students in WSU. The phenomenological research design was employed to explore the meaning of the lived experiences of students concerning conceptualization, perceived symptoms and causes, help-seeking behavior, severity, onset pattern, coping mechanisms, and impacts of mental distress (245). Constructivism philosophical perspective that favors the "emic"or insider (as opposed to the "etic" or outsider observation) approach was used to guide this study based on the idea that mentally distressed students have their understanding of their mental distress (246) that was derived from perceptions, experiences and actions concerning social contexts and driven by their cultural explanations (105).

4.4.1. Participants and procedures

The study participants were recruited from study one that aimed to assess the prevalence of mental distress, perceived need for professional mental health services and barriers to receiving the service among university students. In this screening phase of the prevalence study, participants were informed that if they experience any symptom of mental distress and volunteer to receive professional psychological support, they can write their phone number on the middle page of SRQ-20 or they can contact in person the researcher. In this process, 29 volunteer students wrote their cell phone number (all of them scored $\geq$ 8 points on the SRQ-20 total score scale). Of these, 21 (72.4%) students were contacted using their cell phone and following written informed consent, they voluntarily participated in the interview and received counseling services. The eligibility criteria for this study were: being undergraduate student; scoring 8 or more on SRQ-20; willingness to participate in the study; and 18 years or older. A referral system to the Otona hospital was available for any student with a risk of self-harming or with severe mental illness. The remaining eight students did not answer their phones when they are called for interview repeatedly. Redundancy of answers to the Short Explanatory Model Interview [SEMI] was an indicator of information saturation, which indicated the maximum number of participants was sufficient to the present qualitative study (247).

4.4.2. Data collection instruments

Demographic information of the participants included sex, age, religion, ethnicity, marital status, current place of living, origin, university year and monthly pocket money were collected. Mental distress was assessed using SRQ-20 with a cut-off point of $\geq$ 8 (described in study one).The explanatory models for mental distress were explored using SEMI, which was developed from Kleinman's original concept. This instrument has been translated into different languages to explore the "emic" perspective of distress using semi-structured open-ended questions. SEMI is a simple brief instrument. Furthermore, it consists of non-technical words, easily translated, and any interviewer from any background can administer it after receiving training to use it. According to Azale et al (248), SEMI was adapted to an Ethiopian context by an expert consensus meeting involving mental health professionals and qualitative researchers. It has seven sections that cover perceived symptoms, conceptualization, perceived causes, perceived severity, impacts, help-seeking behaviors and coping mechanisms of mental distress. The face-to-face interview was conducted in Amharic language in the private counseling room of WSU. The participants were encouraged to talk openly about their experiences. Probing was done to further elicit and explore ideas of mental distress. The interviews were audio-recorded with consent. The average duration of the 21 interviews was 42 minute ranging from 21-118 minute.

4.4.3. Data Analysis

The audio taped interviews were transcribed into Amharic. The transcribed data were translated into the English language. Framework analysis was chosen over the other qualitative analysis methods (249). This analysis method emphasizes how both prior issues and emergent data-driven themes should guide the development of the analytic framework (250). This approach fit better with the aim of the current study. The predetermined themes in the SEMI are designed to explore the lived experiences of university students with mental distress and the researcher was open to discover new emerging theme/s. The other justification for the use of framework analysis is that it is suitable for the analysis the present data generated based on the basic research question, "what are university students' explanatory models for mental distress?" and compatible with the phenomenological research design.

In the process of using framework analysis, the researcher followed five sequential steps. These steps were: immersing one's self with the audio recorded interviews (listening carefully) and transcribing the data by reading again and again (familiarization), identifying a framework, indexing (coding), charting (summarizing), and interpreting the result (250). Great attention was given during coding the data because the coded information should capture the meaning of what the participants exactly said. To ensure this, five translated interviews were coded by the researcher and another experienced qualitative researcher independently to check inter-rater coding reliability that resulted in almost similar codes. The researcher then coded all the remaining interviews alone. Predetermined themes were identified. Free open code version 4.02 (251) was used to facilitate the analysis that enabled to manage data.

4.4.4. Trustworthiness

Rigor in a qualitative research is highly related with trustworthiness of the work done in a specific study that includes credibility, dependability, conformability, and transferability (252). To ensure the credibility of the research, the following works have done: (a) the data collection instrument was carefully designed to elicit and generate data; (b) prolonged familiarization with the data was passed through steps of interviewing, transcribing and translation; and (c) five randomly selected translations were coded by the researcher and one expert who knew the subject matter of the study to ensure the accuracy of the codes (intercoder agreement). The whole process and the tasks performed in the present study were supervised and reviewed by supervisors to confirm dependability and conformability of the study. All the necessary files are available and the study setting was well described that indicate the transferability of the study findings to other settings. However, the researcher did not deny that his role in the study and his experience or knowledge of analyzing qualitative data might influence the interpretation of this qualitative study.

4.5. Study three: Feasibility and acceptability of brief individual Interpersonal Psychotherapy adapted for Ethiopia among university students with mental distress

The primary aim of this study was to evaluate the feasibility and acceptability of brief individual IPT-E among WSU students. The secondary objective was to evaluate the preliminary effectiveness of IPT-E in reducing symptoms of mental distress and improving functioning. A

single group pre-post-test quasi-experimental research design was employed that used to evaluate the impact of the intervention on purposefully selected participants (253).

4.5.1. Study participants and their recruitment procedures

The source population was undergraduate students in WSU. The researcher posted flyers in target areas, including: the students' dormitories and cafeteria, the main gate of the university, the library and student's health clinic. In addition, three banners were prepared in collaboration with the WSU student's Dean and counseling offices. These banners were posted in the same strategic areas as the flyers. The flyers and banners were written in Amharic, the official language of Ethiopia, which most students speak. The flyers and banners encouraged those students who experienced symptoms of psychological distress to come to student services for IPT-E. The flyers and banners included the names, addresses and contact data of the counselors as well as their time of availability. The following images (figure 4) are those of the posted flyer and banner.

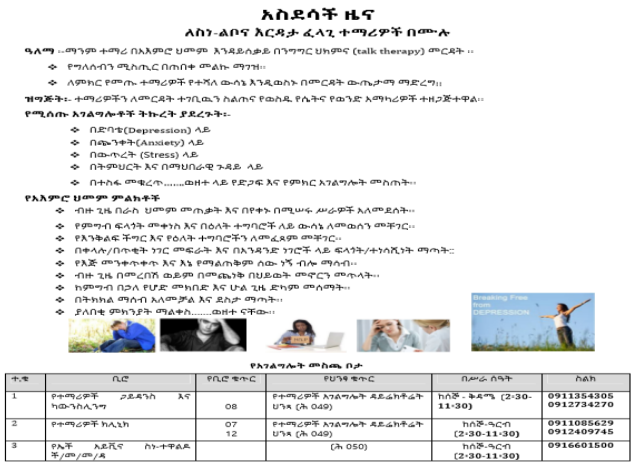

Figure 4: Sample of posted flyer and banner

The counselors registered students that came to the counseling offices requesting assistance following the distribution of the flyers and erection of the banners, and screened them based on eligible criteria for IPT-E. The eligibility criteria were: being undergraduate student; score $\geq$ 8 on SRQ-20; 18 years or older; willing to attend at least 4 IPT-E sessions and able to speak the Amharic, Wolaitigna or Afan Oromo language. The exclusion criteria were: students with serious physical and mental illnesses; acute suicidality; problematic substance use; and already receiving psychiatric medication or psychological treatment. The counselors used some questions

to identify these exclusion criteria. Twenty six eligible students were recruited and participated in the IPT-E sessions. See figure 5 below.

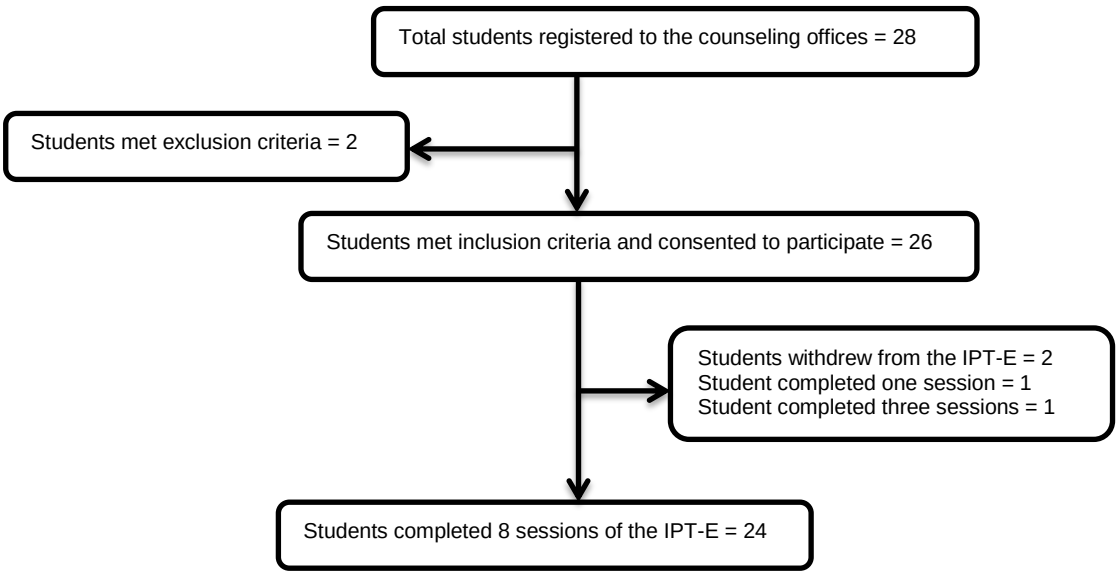

Figure 5: Flow of study participants

4.5.2. Interpersonal Psychotherapy adapted for Ethiopia training for counselors

The intensive IPT-E training was given for four consecutive days and included practical sessions on the clinical skills required. Initially, five counselors participated in the training, but four of them completed the training. The two women counselors had a Bachelor degree in Public Health, one male counselor had a Master's degree in Public Health and the other had a Master's degree in Counseling Psychology. Three of them could speak both Amharic and Wolaitigna languages fluently and one counselor could speak both Afan Oromo and Amharic fluently. The training was given by the researcher who has a Bachelor's degree in Psychology, a Master's degree in Counseling psychology, has two years counseling experience in WSU counseling office and has attended the theoretical and practical training of IPT-E given by the manual adaptors (Appendix V). The following pictures (figure 6) depict counselors attending IPT-E training.

Figure 6: Photos captured during the Interpersonal psychotherapy adapted for Ethiopia training

To evaluate the outcome of the training, the trainer administered pre- and post-tests prepared from the IPT-E manual and a training satisfaction feedback measuring tool. All counselors showed a significant change (above the median point) in the post-test result compared to the pre-test indicating that the counselors received the necessary knowledge to implement IPT-E in the practical session. The practical sessions also helped them to acquire the clinical skills necessary to implement IPT-E. Besides this, all (100%) the counselors rated the training as excellent and reported that the standard quality of the training was high and fulfilled their expectations. They reported that they had received practical knowledge that enabled them to treat students with mental distress.

4.5.3. Data collection instruments

Five instruments were used to collect the demographic and outcome data. The IPT-E screening tool and TTF were used together to collect data including participants' age, sex, marital status, perceived cause of the problem, treatment received, onset of the problem, concurrent problems, medication, substance use, experience of gender based violence, suicide ideas, plan and past attempts and thoughts and past attempts of harming others. The second instrument was the IPT-E feasibility measuring tool, which was used to evaluate the number of students who attended the intervention session, consent rate, completion rate, attrition rate, the duration of the intervention session attended and the mean and modal number of sessions completed over 8-weeks.

The third instrument was the Client Satisfaction Questionnaire-8 items (CSQ), which was used to measure acceptability of IPT-E. The 8-items were rated on a Likert scale ranging from 1 to 4 that yield a minimum total score of 8 and a maximum total score of 32, higher score indicates higher satisfaction (254). Mental health professionals have carefully translated this instrument for this study. In addition to this, a semi-structured interview was conducted with 10 clients to explore further their satisfaction received from the intervention. Redundancy of clients' response to the open ended questions framed from the CSQ indicated the saturation of the data. The qualitative data were audiotaped. Fidelity to the IPT-E treatment included intervention adherence and the number of session attended (255). This treatment adherence was assessed by the IPT-E counselors self-report treatment checklist, which was coded as "Yes" or "No" ("Yes" indicates the accomplishment of the expected key tasks within each session and "No" represents a failure

to accomplish the expected key activities in each counseling session). The counselors completed the checklist for every session of the IPT-E.

The fifth tool was the World Health Organization Disability Assessment (WHODAS-2.0) (256). This instrument is a self-administered 12-item scale designed to measure functional difficulties caused by mental distress in the past 30 days. It has six functional domains which are: understanding and communicating, getting around, self-care, getting along with people, life activities and participation in society with a Likert scale ranging from 1 [none] to 5 (extreme/cannot do). Scores are computed either by adding the response of items in each domain separately or by adding all the responses together to get a global score. A higher score indicates greater functional impairment. WHODAS-2.0 has been adapted and validated in Ethiopia for people with severe mental illness (257). The sixth instrument was SRQ-20 that is used to assess mental distress with a cut-off point of ≥ 8 (described in study one). See table 7 below.

Table 7: Summary of outcomes and measures

Outcomes		Measures
	Sociodemographic factors	✓ IPT-E screening tool ✓ IPT-E Treatment Tracking Form
Primary outcome	Feasibility	✓ Number of participants agree to participate ✓ Number of participants complete the IPT-E ✓ Number of participants withdraw from the IPT-E ✓ Mean and mode of the sessions
	Acceptability	✓ CSQ-8 items ✓ Open-ended questions framed from CSQ-8
	Fidelity	✓ IPT-E checklist • Yes/No
Secondary outcome	Mental distress	✓ SRQ-20 ✓ IPT-E screening tool
	Functioning	✓ WHODAS-12 items

4.5.4. Data analyses

In the present study, data were collected at baseline and at eight-weeks after the start of treatment. The data collected using SRQ-20 and WHODAS-2.0 were measured twice, whereas the remaining data measured by CSQ, IPT-E feasibility measuring tool and in-depth interviews were collected at eight weeks. The data were analyzed using Statistical Packages for the Social Sciences version 20 after cleaning the data, checking the missing values, outliers and normality of the distribution of the data. The demographic variables, feasibility and acceptability of IPT-E were summarized using percentage, frequency, mean and standard deviation.

The preliminary effectiveness of IPT-E measured by SRQ-20 at pre-post-tests was analyzed using paired t-test and the functioning data measured by WHODAS-2.0 at baseline and post-assessment were analyzed by Wilcoxon signed-rank test. Furthermore, independent samples t-test and one-way ANOVA tests were used to assess the mean score difference of the socio-demographic variables for continuous outcomes at baseline and/or at eight weeks. Statistical significance was reported whenever p-value was less than 0.05. The audiotaped qualitative data of the acceptability of IPT-E were transcribed verbatim and translated and then analyzed using thematic analysis supported with a qualitative software, open code 4.02 (251).

4.6. Data management and processing

The quantitative data collected by trained data collectors under the close supervision of the researcher were first imported into data analyzing software. Then, the data cleaning was done before starting the analysis. After checking the neatness of the imported data (detecting missed data, unusual values and normal distribution of the data), the researcher analyzed the data using SPSS version 20. The audio recorded qualitative data elicited by the in-depth interview were transcribed into Amharic in written form and translated to English. Then, inductive coding was conducted. To ensure the accuracy of the codes, some of the translations were first coded by the researcher and by one expert who knew the subject matter of the study. Then, after checking the inter-rater coding similarity, the researcher coded the remaining translations. Finally, the translated data was analyzed with the assist of open code version 4.02. All the collected and audio recorded data were kept anonymized and confidential throughout the whole study process using a locked computer using a password known only by the researcher. The data documented on the hard copies were kept in a locked box of the researcher's house.

4.7. Data quality assurance

In any scientific study, the data quality assurance is uncompromised, because contamination of the data dismisses the whole study results. Therefore, having this in mind, the quality of the data has been given significantly emphasis starting from the selection of data collection instruments. The data collection instruments have good psychometric properties (validity and reliability) and were validated in the Ethiopian context. The instruments that were not adapted for Ethiopia previously were translated following the procedures mentioned in the guideline and piloted to

check their validity and reliability. After doing this, half-day training been was given for the data collectors which was focused on how to administer the instruments and explaining the aim of the study to the research participants to optimize the quality of the data.

During the data collection and the IPT-E intervention, the researcher closely supervised the overall process. The researcher randomly selected a sample of the completed data collection form then checked for accuracy, incompleteness, and inconsistency. The collected data were reviewed and checked for completeness before the data entry. A data entry format was produced and programmed. Then, the researcher entered the data into SPSS. The data collection, transcriptions and translations of the qualitative study by the researcher also increased the quality of the qualitative data along with the random selection and coding of the five translations by the researcher and expert on the area. Furthermore, the counselors who participated in the intervention study were well qualified and had a Bachelor's or Master's degrees in public health and psychology that contributed to the quality of services delivered to the students.

4.8. Ethical considerations

All the ethical considerations and the methodological credibility of this study were done according to Addis Ababa University College of Health Sciences Institutional Review Board guideline. Ethical clearance was obtained from the Institutional Review Board of Addis Ababa University College of Health Sciences with a protocol number of 045/17/Psy. Before starting the interviews of the clients, the objectives of the study were clearly explained and a copy of information sheet written in the Amharic language was distributed to the study participants; volunteer students participated in the study after obtaining their informed consent (oral informed consent for study one and written for studies two and three). Personal identifiers were not included in the questionnaires or recorded; rather codes only known by the researcher were used for the prevalence and qualitative studies. However, in the IPT-E intervention study, in the screening tool did include a personal identifier related to participants' cell phone numbers. Care was taken to keep this information private. The need to have participants' cell phone numbers was required to remind them of the counseling sessions, to prevent missed sessions.

To reduce potential risks to study participants, the following precautions were taken: (a) informed consent was obtained; (b) respecting clients' needs; (c) counseling took place in a

private room; (d) confidentiality was respected; (e) the participant was assured of their right to ask questions and (f) clients had the right to withdraw from the study at any time if they were not comfortable participating in the study, without prejudice. The potential benefits clients might gain from the present study included receiving counseling services and facilitating a referral system to the psychiatric clinic for severe mental problems if required. For instance, there was a referral system through the students' clinic to the Otona hospital for those students who met the exclusion criteria of the intervention (IPT-E) study. As a result, two students who were previously diagnosed with severe mental illness and who were taking psychotropic medications were referred to the Otona hospital for further psychiatric care.

All participants who participated in the qualitative study received counseling services and the participants who participated in study one were also informed of the availability of free counseling services in the university. Apart from this, there was no transport payment for the participants, because they all were living within the WSU compound during the study period. Concerning confidentiality, the collected data were kept anonymized and confidential throughout the whole study process by locking the computer and using a password known only by the researcher. The data documented on the hard copies were kept in a locked box in the researcher's house.

4.9. Brief summary of the dissertation

The above-mentioned studies were briefly summarized in table 8. The table includes the type of design employed in each study, the number of participants involved, sampling techniques, data collection instruments and statistical tools used to analyze the data.

Table 8: Summary of the three studies' methods incorporated in the dissertation

Number of study	Study design	Study population	Sample size	Sampling technique	Data collection tool	Data Analysis
1	Cross-sectional	Undergraduate university students	980	Multistage sampling	SRQ-20 BACE-III Perceived need questionnaire	Descriptive statistics (percentage, frequency, mean, and standard deviation) Pearson chi-square test Linear regression Logistic regression
2	Phenomenology	Mentally distressed	21	Purposive sampling	SEMI	Framework analysis

		university students				
3	Single-group pre-post-test design	Mentally distressed university students	24	Purposive sampling	SRQ-20 WHODAS-12 CSQ-8 Semi-structured interviews	Descriptive statistics (percentage, frequency, mean, and standard deviation) T-test, Wilcoxon signed-rank test and one way-ANOVA Qualitative analysis

5. RESULTS

This section of the study presents the three study objectives findings sequentially. It begins with presenting the cross-sectional study results that aimed to assess the prevalence of mental distress, perceived need and barriers to receiving professional mental healthcare. Followed by the qualitative study findings which aimed to explore the explanatory models for mental distress and conclude with the third interventional study findings that focused on the feasibility and acceptability of IPT-E for students with mental distress.

5.1. Study one: Mental distress, need and barriers to receiving professional mental healthcare among university students

This cross-sectional study was aimed to identify the magnitude of mental distress, mental healthcare need and barriers to receiving professional mental health services that served as a springboard for the remaining two consecutive studies. The detail of this study's findings is presented in the following way.

5.1.1. Demographic characteristics of the study participants

A total of 980 undergraduate students completed the screening phase survey from the sample of 1135 students approached, yielding 86.34% response rate. One third (34.6%) of the participants had scored $\geq$ 8 on SRQ-20. The majority (60.5%) were male. The age of the participants ranged from 17 to 38 years with a mean age of 21.53 years (SD = 2.42). The participants were from diverse ethnic groups, the largest proportion were from Amhara (34.6%) and Wolaita (20.9%) ethnic groups. Regarding marital status, 82.8% were single and 95.3% were living in the campus. Over half (54.7%) were from urban backgrounds. First-year, second-year, and third-year undergraduate students comprised 27.7%, 26.6%, and 25.9% of the sample, respectively (see table 9).

Table 9: Demographic characteristics of the study sample

Variables	Total Sample (n) % N (980)	Screened positive for mental distress (n) % N (339)	Participants with mental distress who have not received professional mental healthcare % N (239)
Sex			
Male	593 (60.5)	176 (51.9)	127 (53.1)
Female	387 (39.5)	163 (48.1)	112 (46.9)

Age			
Mean	21.53	21.21	21.22
SD	2.42	1.95	1.82
Minimum	17	18	18
Maximum	38	30	28
Religion			
Christian Orthodox	543 (55.4)	241 (71.1)	164 (68.6)
Christian Protestant	330 (33.7)	50 (17.7)	46 (19.2)
Islam	80 (8.2)	30 (8.8)	22 (9.2)
Christian Catholic	8 (0.8)	2 (0.6)	2 (0.8)
No religion	8 (0.8)	4 (1.2)	3 (1.3)
Others	11 (1.1)	2 (0.6)	2 (0.8)
Ethnicity			
Amhara	339 (34.6)	164 (48.4)	110 (46.0)
Oromo	155 (15.8)	58 (17.1)	41 (17.2)
Wolaita	205 (20.9)	44 (13)	35 (14.6)
Gurage	80 (8.2)	24 (7.1)	15 (6.3)
Tigre	24 (2.4)	11 (3.2)	8 (3.3)
Sidama	58 (5.9)	9 (2.7)	7 (2.9)
Hadiya	32 (3.3)	8 (2.4)	6 (2.5)
Gamogofa	30 (3.1)	8 (2.4)	6 (2.5)
Others	57 (5.7)	13 (3.9)	11 (4.6)
Marital status			
Single	811 (82.8)	268 (79.1)	194 (81.2)
In a relation	114 (11.6)	50 (14.7)	31 (13.0)
Married but not living together	35 (3.6)	11 (3.2)	9 (3.8)
Divorced	14 (1.4)	7 (2.1)	3 (1.3)
Married and living together	6 (0.6)	3 (0.9)	2 (0.2)
Residence			
In Campus	934 (95.3)	320 (94.4)	223 (93.3)
Off Campus	20 [2]	8 (2.4)	7 (2.9)
Both	26 (2.7)	11 (3.2)	9 (3.8)
Area of growing			
Urban	536 (54.7)	176 (51.9)	127 (53.1)
Rural	444 (45.3)	163 (48.1)	112 (46.9)
University year			
First-year	271 (27.7)	117 (34.5)	81 (33.9)
Second-year	261 (26.6)	85 (25.1)	58 (24.3)
Third-year	254 (25.9)	84 (24.8	67 (28.0)
Fourth-year	96 (9.8)	28 (8.3)	18 (7.5)
Fifth-year	98 (10.0)	25 (7.4)	15 (6.3)
Family history of mental illness			
Yes	67 (6.8)	34 (10.0)	22 (9.2)
No	913 (93.2)	305 (90.0)	217 (90.8)
Substance use			
Yes	58 (5.9)	39 (11.5)	31 (13.0)
No	922 (94.1)	300 (88.5)	208 (87)

5.1.2. Prevalence of mental distress

The prevalence of mental distress was 34.6%, indicated by 339 participants with SRQ-20 scored higher than 7. It was slightly higher (51.9%) among male students. The item-based response of

the study participants to the SRQ-20 is summarized in figure 7. The top three frequently reported symptoms were: loss of interest in things (37.60%), being tired (36.90), and thought of ending one's life (36.80%). The least reported symptom was handshaking/hand trembling (19.7%).

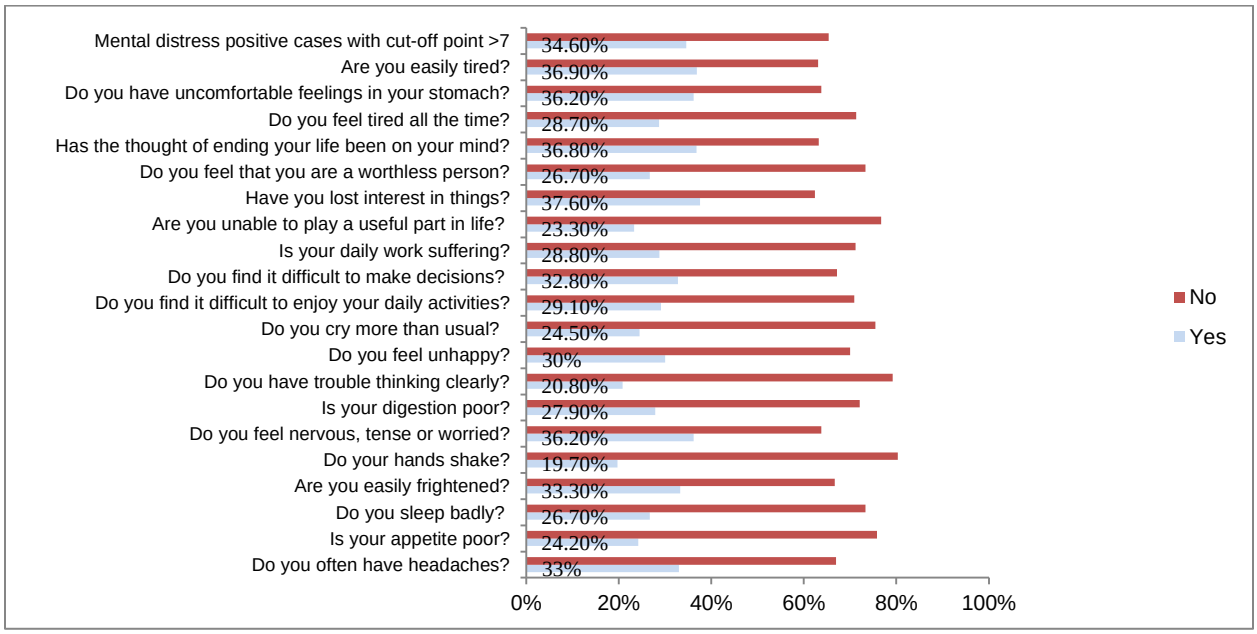

Figure 7: Prevalence of mental distress and its distribution of specific symptom of Self-Reported Questionnaire

5.1.3. Demographic factors associated with mental distress

Both univariate and multivariable logistic regression results were presented in table 10. As it can be shown in table 10 below, being female (COR = 1.72, 95% CI = 1.32, 2.25), being in age category of 18-19 years (COR = 2.39, 95% CI = 1.10, 5.21) and 20-25 years (COR = 2.10, 95% CI = 1.03, 4.26) and being first-year student (COR = 2.22, 95% CI = 1.33, 3.71) were positively and significantly associated with mental distress in the univariate model. In the multivariable model, female students were two times more likely to experience mental distress than male students (AOR = 2.06, 95% CI = 1.54, 2.75). First-year students had two times risk of developing mental distress compared to fifth-year students (AOR = 2.30, 95% CI = 1.31, 4.02). Students who reported a family history of mental illness were two times higher for developing mental distress than students with no family history of mental illness (AOR = 1.99, 95% CI = 1.17, 3.39). Furthermore, students who reported a history of substance use were six times more likely to experience mental distress than students who reported no history of substance use (AOR = 5.93, 95% CI = 3.26, 10.78).

Table 10: Demographic factors associated with mental distress

Variables		Mental distress		OR with 95% CI	
		Yes N (%)	No N (%)	Crude (COR)	Adjusted (AOR)
Sex					
	Female	163 (42.1%)	224 (57.9%)	**1.72 (1.32, 2.25)**	**2.06 (1.54, 2.75)**
	Male	176 (29.7%)	417 (70.3%)	1	1
Age					
	18-19 years	49 (38%)	80 (62%)	**2.39 (1.10, 5.21)**	1.59 (0.66, 3.84)
	20-25 years	280 (35%)	521 (65%)	**2.10 (1.03, 4.26)**	1.97 (0.91, 4.24)
	≥ 26 years	10 (20.4%)	39 (79.6%)	1	1
Area of growing					
	Rural	163 (36.7%)	281 (63.3%)	1.19 (0.91, 1.55)	1.32 (0.99, 1.76)
	Urban	176 (32.8%)	360 (67.2%)	1	1
University year					
	First-year	117 (43.2%)	154 (56.8%)	**2.22 (1.33, 3.71)**	**2.30 (1.31, 4.02)**
	Second-year	85 (32.6%)	176 (67.4%)	1.41 (0.84, 2.38)	1.29 (0.74, 2.23)
	Third-year	84 (33.1%)	170 (66.9%)	1.44 (0.85, 2.44)	1.26 (0.72, 2.18)
	Fourth-year	28 (29.2%)	68 (70.8%)	1.20 (0.64, 2.26)	1.02 (0.52, 1.99)
	Fifth-year	25 (25.5%)	73 (74.5%)	1	1
Family history of mental illness					
	Yes	33 (49.3%)	34 (50.7%)	0.49 (0.30, 0.80)	**1.99 (1.17, 3.39)**
	No	305 (33.4%)	608 (66.8%)	1	1
Substance use					
	Yes	39 (67.2%)	19 (32.8%)	0.24 (0.13, 0.41)	**5.93 (3.26, 10.78)**
	No	300 (32.5%)	622 (67.5%)	1	1

5.1.4. Need for professional mental healthcare

Of 339 participants with elevated symptoms of mental distress, 70.5% (n = 239) reported a perceived need for professional mental healthcare in the past three months. The remaining 29.5% did not report a need for professional mental health treatment, because they received help from informal sources (25.5% from religious leaders, friends, family, and traditional healers) and formal sources (4% from doctors and psychologists). The majority (86.4%) of mentally distressed participants preferred individual psychological counseling; 34.8% preferred to be counseled in a university counseling office, followed by preferring counseling in a hospital (28.6%); 44.8% and 14.2% preferred four and eight total counseling sessions, respectively. Forty-seven percent needed one session per week and followed by 30.7% two sessions per week; 37.8% and 34.2% wanted the duration of a single session to range 20-30 minutes and 40-60 minutes, respectively. There was no significant gender difference among students seeking mental health service, $\chi 2$ [1] = 0.48, p = 0.49. Likewise, there were no significant differences among the remaining demographic variables in those seeking mental health services. See table 11 below.

Table 11: Demographic factors associated with need for professional mental healthcare

Variables	Need for professional mental healthcare		χ 2	P-value
	Yes (n)	No (n)		
Sex				
Female	112	51		
Male	127	49	0.48	0.49
Religious background				
Orthodox	164	77		
Protestant	46	14	3.02	0.39
Muslim	22	8		
Others	7	1		
Ethnicity				
Amhara	111	53		
Oromo	41	17		
Wolaita	35	9		
Gurage	15	9	3.77	0.88
Hadiya	6	2		
Tigre	8	3		
Sidama	7	2		
Gamogofa	6	2		
Others	10	3		
Marital status				
Single	193	75		
In a relationship	31	19		
Married but no living together	2	1	6.83	0.15
Divorced	10	1		
Married and living together	3	4		
Residence				
In campus	223	97		
Off campus	7	1	1.89	0.39
Both	9	2		
Origin				
Rural	112	51		
Urban	127	49	0.48	0.49
University year				
First-year	81	36		
Second-year	58	27		
Third-year	67	17	5.61	0.23
Fourth-year	18	10		
Fifth-year	15	10		
Family history of mental illness				
No	217	88		
Yes	22	12	0.61	0.44
Substance use				
No	208	92		
Yes	31	8	1.71	0.19

5.1.5. Barriers to receiving professional mental healthcare for mental distress

Of the 339 participants who screened positive for mental distress, 239 (127 male and 112 female) had not received mental health services in the past three months, because of the barriers to

receiving the treatment, despite desiring mental health care as indicated in table 12. This table shows the mean scores of an individual item, standard deviation, percentage to any degree, and major barriers to receiving mental healthcare. There were top five barriers to receiving mental healthcare the reported percentage was greater than 60% to any degree (sum of responses of a little, quite a lot, and a lot).

The first barrier to seeking mental health care was 'thinking the problem would get better by itself' reported by 74.4% to any degree and 37% thought that it would act as a major barrier to receiving mental health services. The second was 'being unsure where to go to get professional care' which accounted for 71.6% to any degree and 21% reported as a major barrier. The third was 'wanting to solve the problem on their own', whereby 71% of the participants reported this as a barrier to any degree and 28% thought that it would act as a major barrier to receiving mental healthcare. The fourth was 'denying a mental health problem', where 67.4% of the participants reported this as a barrier to any degree and 38% reported it as a major barrier. The fifth was 'preferring to get alternative forms of care' reported as any degree of the barrier by 67%, while 34% of the participants reported it as a major barrier to receiving mental health service.

Table 12: Barriers to receiving mental healthcare among students with mental distress (n = 239)

Barriers to receiving mental healthcare	Mental distress who did not receive professional mental health treatment (N = 239)		Total (N)	Item mean
	Barrier to any degree % (n)	Major barrier % (n)		
Stigma related barriers				
Concern about what my family might think, say, do or feel	48.1 (115)	18.4 (44)	239	0.98 (1.18)
Concern that I might be seen as weak for having a mental health problem	38.9 (93)	14.2 (34)	239	0.76 (1.10)
Feeling embarrassed or ashamed	29.8 (71)	10.9 [26]	239	0.58 (1.01)
Concern that I might be seen as 'crazy'	31.9 [76]	10.5 (25)	239	0.61 (1.02)
Not wanting a mental health problem to be on my medical records	26.0 (62)	8.4 (20)	239	0.50 (0.95)
Concern that people might not take me seriously if they found out I was having professional care	28.0 [67]	7.1 (17)	239	0.51 (0.93)
Concern that people I know might find out	28.4 (68)	6.7 [16]	239	0.47 (0.87)
Concern about what my friends might think, say or do	33.5 (80)	6.7 [16]	239	0.56 (0.92)
Concern about what students might think, say or do	31.4 (75)	6.3 (15)	239	0.53 (0.90)
Attitudinal related barriers				
Thinking I did not have a problem	**67.4 (161)**	**38.1 (91)**	**239**	**1.59 (1.29)**
Thinking the problem would get better by itself	**74.4 (178)**	**36.8 (88)**	**239**	**1.65 (1.22)**

Preferring to get alternative forms of care	**66.5 (159)**	**34.3 (82)**	**239**	**1.51 (1.27)**
Wanting to solve the problem on my own	**71.1 (170)**	**28.0 [67]**	**239**	**1.50 (1.18)**
Preferring to get help from family or friends	58.6 (140)	22.2 (53)	239	1.20 (1.20)
Dislike of talking about my feelings, emotions or thoughts	38.0 (91)	9.6 (23)	239	0.69 (1.02)
Concerns about the treatments available (e.g. medication side effects)	36.8 (88)	9.6 (23)	239	0.65 (1.01)
Thinking that professional care probably would not help	30.9 (74)	7.5 (18)	239	0.54 (0.93)
Fear of being put in hospital against my will	21.4 (51)	7.1 (17)	239	0.41 (0.89)
Having had previous bad experiences with professional care for mental health	16.7 (40)	4.6 (11)	239	0.30 (0.76)
Instrumental related barriers				
Not being able to afford the financial costs involved	56.0 (134)	25.5 (61)	239	1.23 (1.25)
Having no one who could help me get professional care	59.8 (143)	24.7 (59)	239	1.26 (1.22)
Being unsure where to go to get professional care	**71.6 (171)**	**21.0 (51)**	**239**	**1.36 (1.11)**
Difficulty taking time off education	55.2 (132)	17.6 (42)	239	1.10 (1.16)
Problems with transport or travelling to appointments	44.4 (106)	17.6 (42)	239	0.92 (1.18)
Being too unwell to ask for help	51.9 (124)	14.6 (35)	239	0.96 (1.11)
Professionals from my own ethnic or cultural group not being available	26.4 [63]	6.7 [16]	239	0.47 (0.89)

Note: Question number 5, 14, 24, and 29 in the BACE-III were not included in this table, because more than 97% of the participants responded "Not applicable" option for each item. Barriers reported percentage greater than 60% to any degree were indicated in bold color.

Of the top five barriers, the top four were attitudinal related barriers to receiving professional mental health services. The fifth, 'being unsure of where to get professional care' was an instrumental related sub-scale of BACE-III. As a result, the mean score of attitudinal related barriers sub-scale of BACE-III (M = 1.26, SD = 0.68) was the highest when compared with instrumental related barriers sub-scale (M = 0.78, SD = 0.43) and stigma related barriers sub-scale (M = 0.61, SD = 0.65) of BACE-III. Of all the demographic variables, only a family history of mental illness had a significant association, X^2 [3] = 14.48 =, p = 0.01 with 'denying mental health problem' of the top five barriers. See table 13.

Table 13: The association between demographic variables with common barriers to receiving mental healthcare

Variables	Common barriers to receiving mental health care																											
	Thinking the problem would get better by itself				χ 2	P	Being unsure where to go to get professional care				χ 2	P	Wanting to solve the problem by own				χ 2	P	Denying mental health problem				χ 2	P	Preferring to get alternative forms of mental care				χ 2	P
	Not at all	A little	Quite a lot	A lot			Not at all	A little	Quite a lot	A lot			Not at all	A little	Quite a lot	A lot			Not at all	A little	Quite a lot	A lot			Not at all	A little	Quite a lot	A lot		
Sex					3.2	0.37					1.22	0.75					4.34	.23					5.1	.2					3.70	.30
Female	34	21	16	41			33	34	21	24			32	27	28	25			41	17	12	42			36	14	19	43		
Male	27	29	24	47			35	34	31	27			37	22	26	42			37	15	26	49			44	26	18	39		
Religious background					16.3	0.36					14.38	0.50					18.99	.21					18.3	.3					9.45	.85
Orthodox	41	30	31	62			41	44	40	39			48	35	39	42			53	20	27	64			54	25	26	59		
Protestant	14	10	7	15			19	12	7	8			9	8	10	19			16	6	5	19			17	10	7	12		
Muslim	6	5	2	9			6	10	3	3			10	5	1	6			6	5	3	8			6	3	3	10		
Others	0	5	0	2			2	2	2	1			2	1	4	7			3	1	3	0			3	2	1	1		
Ethnicity					15.95	0.77					26.61	0.18					19.24	.57					38.6	.1					24.68	.26
Amhara	28	23	19	40			30	35	25	20			36	25	21	28			45	12	16	37			37	18	18	37		
Oromo	8	8	6	19			9	11	11	10			9	8	11	13			9	4	9	19			10	6	7	18		
Wolaita	10	7	8	10			11	9	8	7			9	4	8	14			9	6	4	16			14	7	7	7		
Gurage	6	3	0	6			4	8	1	2			3	4	2	6			2	7	1	5			4	6	1	4		
Hadiya	0	2	2	2			1	1	0	4			2	1	2	1			1	0	2	3			2	1	0	3		
Tigre	3	5	2	4			8	1	1	4			3	6	4	1			8	0	4	2			7	2	3	2		
Sidama	1	1	2	3			2	2	2	1			3	0	2	2			1	2	0	4			3	0	0	4		
Others	5	1	1	4			3	1	4	3			4	1	4	2			3	1	2	5			3	0	1	7		
Marital status					12.98	0.37					10.22	0.60					10.93	.54					10.84	.5					16.77	.16
Single	50	38	31	75			52	54	45	43			60	35	42	57			61	24	33	76			70	27	27	70		
In a relationship	5	11	8	7			11	7	7	6			5	11	8	7			9	7	5	10			7	9	6	9		
Married but not living together	4	1	1	3			2	5	0	2			3	2	3	1			4	1	0	4			3	2	3	1		
Divorced	1	0	0	2			2	1	0	0			0	1	1	1			2	0	0	1			0	1	0	2		
Married and living together	1	0	0	1			1	1	0	0			1	0	0	1			2	0	0	0			0	1	1	0		
Residence					3.64	0.73					6.82	0.34					10.32	.11					7.71	.3					5.48	.48
In campus	56	46	38	83			62	64	51	46			67	45	49	62			76	28	34	85			73	39	33	78		
Off campus	3	1	0	3			1	2	1	3			1	3	0	3			2	2	2	1			3	0	1	3		
Both	2	3	2	2			5	2	0	2			1	1	5	2			0	2	2	5			4	1	3	1		
Origin					1.20	0.75					1.96	0.58					4.10	.25					3.8	.3					2.60	.46
Rural	30	26	17	39			30	33	28	21			36	25	19	32			39	19	17	37			33	18	17	44		
Urban	31	24	23	49			38	35	24	30			33	24	35	35			39	13	21	54			47	22	20	38		
University year					13.36	0.34					9.52	0.66					9.06	.70					6.21	.9					15.47	.22
First-year	26	15	14	26			20	28	17	16			21	14	22	24			32	8	13	28			30	19	8	24		
Second-year	14	14	11	19			18	11	17	12			22	11	11	14			18	9	9	22			18	13	9	18		
Third-year	16	12	10	29			18	19	14	16			21	16	12	18			19	9	9	30			23	3	13	28		
Fourth-year	3	2	3	10			5	6	2	5			3	4	4	7			4	3	4	7			4	3	4	7		
Fifth-year	2	7	2	4			7	4	2	2			2	4	5	4			5	3	3	4			5	2	3	5		
Family history of mental ill ness					5.54	0.14					1.65	0.65					3.85	.28					14.38	.01					5.55	.14
No	57	42	39	79			64	62	46	45			65	45	50	57			70	32	29	86			77	37	32	71		
Yes	4	8	1	9			4	6	6	6			4	4	4	10			8	0	9	5			3	3	5	11		
Substance use					3.28	0.35					2.12	0.55					4.72	.19					5.10	.2					0.50	.92
No	56	41	33	78			61	58	47	42			60	46	43	59			67	31	30	80			68	35	33	72		
Yes	5	9	7	10			7	10	5	9			9	3	11	8			11	1	8	11			12	5	4	10		

5.1.6. Associated factors of attitudinal related barriers to receiving professional mental healthcare

In univariate regression analysis (table 14), fourth-year students perceived significantly more attitudinal related barriers (β = 0.27; 95%CI = 0.24, 1.16; p = 0.003) than the fifth-year students. Multivariable analysis also showed that only fourth-year students perceived significantly more attitudinal related barriers (β = 0.27; 95% CI = 0.21, 1.14; p = 0.01) than the fifth-year students.

Table 14: Associated factors of attitudinal barriers to receiving mental healthcare (n = 239)

		Attitudinal related barriers					
Variables		Univariate			Multivariable		
		Beta	95% CI	P	Beta	95% CI	P
Age		.09	-.02, .08	.18	.01	-.05, .06	.91
University year	First-year	.01	-.36, .38	.97	01	-.41, .42	.97
	Second-year	.03	-.33, .43	.80	.03	-.35, .46	.81
	Third-year	.11	-.20, .54	.37	.12	-.21, .57	.37
	Fourth-year	.27	.24, 1.16	.003	.26	.21, 1.14	.004
	Fifth-year (Ref.)	-	.80, 1.48	<0.01			
Family mental illness history	No (Ref.)	-	1.14, 1.32	<0.01			
	Yes	.12	-.01, .59	.06	.11	-.04, .56	.09
R2						0.08	

Note. Reference category results for multivariable were: β = 1.05; 95% CI: -.29, 2.40; P = 0.12. Ref. = Reference category for univariate regression analysis; CI = Confidence Interval for β and P = P-Value.

5.1.7. Associated factors of instrumental related barriers to receiving professional mental healthcare

In univariate regression analysis (table 15), female students perceived significantly fewer instrumental related barriers (β = -.15; 95%CI = -.24, -.02; p = 0.02) than male students. Students from rural background perceived significantly more instrumental related barriers (β = 0.18; 95%CI = 0.04, 0.26; p = 0.01) than students from urban background. Fourth-year students perceived significantly more instrumental related barriers (β = 0.28; 95%CI = 0.17, 0.76; p = 0.002) than the fifth-year students. Students who reported a family history of mental illness perceived significantly more instrumental related barriers (β = 0.16; 95%CI = 0.05, 0.43; p = 0.01) than students who reported no family history of mental illness. Students who reported substance use perceived significantly more instrumental related barriers (β = 0.15; 95%CI = 0.03, 0.36; p = 0.02) than students who reported no substance use. A one year increase in age was associated with 0.19 unit increased in instrumental related barriers to receiving mental health services (β = 0.19; 95%CI = 0.02, 0.07; p = 0.004). In multivariable analysis, students from rural

background perceived significantly more instrumental related barriers (β = 0.16; 95%CI = 0.03, 0.25; p = 0.01) than students from urban background. Besides this, second-year (β = 0.27; 95%CI = 0.02, 0.52; p = 0.03) and fourth-year students (β = 0.29; 95%CI = 0.19, 0.77; p = 0.001) perceived significantly more instrumental related barriers than the fifth-year students.

Table 15: Associated factors of instrumental barriers to receiving mental healthcare (n = 239)

		Instrumental related barriers					
Variables		Univariate			Multivariable		
		Beta	95% CI	P	Beta	95% CI	P
Sex	Male (Ref.)	-	.77, .92	<0.01			
	Female	-.15	-.24, -.02	.02	-.10	-.20, .02	.12
Age		.19	.02, .07	.004	.13	-.01, .07	.09
Origin	Urban (Ref.)		.64, .78	<0.01		.	
	Rural	.18	.04, .26	.01	.16	.03, .25	.01
University year	First-year	.11	-.13, .34	.39	.23	-.05, .47	.11
	Second-year	.14	-.10, .39	.25	.27	.02, .52	.03
	Third-year	.14	-.10, .37	.27	.23	-.02, .47	.07
	Fourth-year	.28	.17, .76	.002	.29	.19, .77	.001
	Fifth-year (Ref.)		.42, .86	<0.01			
Family mental illness history	No (Ref.)		.70, .82	<0.01			
	Yes	.16	.05, .43	.01	.09	-.05, .32	.15
Substance use	No (Ref.)		.70, .82	<0.01			
	Yes	.15	.03, .36	.02	.09	-.05, .28	.17
R2						0.14	

Note. Reference category for multivariable: β = -.16; 95% CI = -1.02, 0.70 p = .72. Ref. refers to reference category for univariate regression analysis; CI = Confidence Interval for β and P = P-Value.

5.1.8. Associated factors of stigma related barriers to receiving professional mental healthcare

Univariate regression analysis showed that students from rural background perceived significantly more stigma related barriers (β = 0.13; 95%CI = 0.00, 0.33; p = 0.05) than students from urban background. Students who reported a history of mental illness in the family perceived significantly more stigma related barriers (β = 0.13; 95%CI = 0.01, 0.57; p = 0.05) than students who reported no family history of mental illness. Students who reported substance use perceived significantly more stigma related barriers (β = 0.13; 95%CI = 0.00, 0.49; p = 0.05) than students who reported no substance use. A one year increase in age was associated 0.17 unit increased in stigma-related barriers to mental health services (β = 0.17; 95%CI = 0.02, 0.10; p = 0.01). In multivariable model, only fourth-year students perceived significantly more stigma related barriers (β = 0.24; 95%CI = 0.14, 1.01; p = 0.01) than the fifth-year students. See table 16.

Table 16: Associated factors of stigma barriers to receiving mental healthcare (n = 239)

Stigma related barriers							
Variables		Univariate			Multivariable		
		Beta	95% CI	P	Beta	95% CI	P
Age		.17	.01, .10	.01	.10	-.02, .09	.19
Origin	Urban (Ref.)		.42, .65	<0.01			
	Rural	.13	.00, .33	.05	.12	-.02, .32	.08
University year	First-year	.02	-.32, .37	.89	.11	-.25, .54	.47
	Second-year	-.002	-.36, .36	.99	.08	-.26, .50	.54
	Third-year	.13	-.18, .54	.32	.18	-.11, .63	.16
	Fourth-year	.24	.14, 1.01	.01	.24	.14, 1.02	.01
	Fifth-year (Ref.)	-	.19, .83	<0.01			
Family mental illness history	No (Ref.)	-	.50, .67	<0.01			
	Yes	.13	.01, .57	.05	.09	-.09, -.48	.19
Substance use	No (Ref.)		.49, .67	<0.01			
	Yes	.13	.00, .49	.05	.07	-.12, .39	.31
R2						0.10	

Note. Reference category for multivariable: β: -.45; 95% CI = -1.72 to .83; p = 0.49. Ref. refers to reference category for univariate regression analysis; CI = Confidence Interval for β and P = P-Value.

5.2. Study two: Explanatory models of mental distress among university students

This phenomenological qualitative study was nested in the above-mentioned quantitative study (study one) to trace students who were mental distressed and explore their explanatory models of mental distress. The findings of this study were presented in the following sub-sections.

5.2.1. Demographic characteristics of the study participants

Information collected from 21 study participants was analyzed and the key findings were elaborated under seven themes that include: (a) perceived symptoms, (b) conceptualization of mental distress, (c) perceived causes, (d) perceived severity, (e) impacts, (f) help-seeking behaviors and (g) coping mechanisms from mental distress. The participants were composed of five female and sixteen male students with a mean age of 21 years (SD = 1.71; range = 19-25 years). The majority of the participants were Orthodox Christian by religion, from the Amhara ethnic group and single. All participants lived in the University residence. More than half of the participants were from an urban background and were first-year students. The average monthly pocket money received from their family was 501 Ethiopian Birr (ETB) (range = 50-1000 ETB). All students scored positive for mental distress with a mean SRQ-20 score of 13.38 (SD = 2.78; range = 8-20). See table 17.

Table 17: Demographic characteristics of the participants with their Self-Reported Questionnaire score (n = 21)

Characteristics		Number of participants
Sex	Male	16
	Female	5
Age	18-25 years	21
Religious background	Orthodox	16
	Protestant	3
	Muslim	2
Ethnicity	Amhara	10
	Oromo	6
	Gurage	1
	Wolaita	1
	Other	3
Marital status	Single	17
	In relationship	3
	Divorced	1
Residency	In campus	21
Origin	Rural	9
	Urban	12
University year	I	10
	II	6
	III	4
	V	1
Monthly pocket money	50-500 Birr	16
	501-1000 Birr	5
SRQ-20	≥ 8 score	21

1 US Dollar = 37.08 ETB on October 15, 2020

5.2.2. Perceived symptoms of mental distress

Most participants experienced mixed symptoms of anxiety, depression and somatic distress (table 18). The most commonly reported complaints were: being anxious, physically fatigued, headache, and feeling of hopeless. The following three illustrative quotes captured these chief complaints.

> "Yeah, immediately when I sat in the classroom, I became anxious. I did not know that it was because of anxiety. When I go to church, I cannot stay until the church ceremony is finished, because of the headache. When I start to read, I become mentally unstable and then, I cannot open my two eyes, but after a few minutes my eyes become open; then after I started to read for a few minutes again my eyes become closed and A letter seems to me B. I feel tired, my body gets feeling of burning, and I also get joint pain… When my gastric get start, I cannot eat food and I feel pain in the stomach. I try to sleep but I cannot sleep due to the serious headache." (A 22-year-old female, in a relationship)

Other participants explained that:

> "I feel extreme hopelessness. I cannot properly concentrate on my education because of lack of motivation I have. I consider life as meaningless." (A 20-year-old female, single)

"Psychological problem cannot bring any problem, so I said to you, I am very happy to see the end of this world by being a mad person. Previously I had a hope to long live and had fear of death. But now, I know that if I am a mad person, I can survive so that why should I worry?" (A 20-year-old male, in a relationship)

Table 18: Types and frequency of chief complaints reported by study participants

Types of symptoms	Number of participants
Anxiety symptoms	
Being anxious	18
Being angry	12
Lack of sleep	11
Depression symptoms	
Hopelessness	13
Lack of motivation to read	11
Lack of concentration	8
Somatic symptoms	
Physical fatigue	15
Headache	14
Gastric pain	6

5.2.3. Conceptualization of mental distress

Eight and four participants labeled their problem as anxiety and stress, respectively. The interviewer also asked the participants how long the problem had lasted. Five students were suffering for a year; four students had their problem for three years and another five students reported that their distress started six months ago. Five students reported that their distress started two and four years ago. The remaining two students reported their problem had been with them since elementary school.

"I think this case is related with mental abnormality, specifically it is anxiety. It (my problem) started before six months." (A 25-year-old male, single)

Another student explained that:

"I don't know; it is difficult for me to give a name. But, I guess stress can express it. I started to experience the problem three years ago." (A 22-year-old male, single)

One student named her problem as evil spirit.

"As to me, the name of my problem is መንፈስ (bad spirit); it is the one who enforce me to conflict with my friends without having any reason and it is he (bad spirit) who changes my behavior and mood within a short period of time. When I was in elementary school, I have been experiencing this problem." (A 22-year-old female, in a relationship)

5.2.4. Perceived causes for mental distress

When participants asked about how their psychological distress began, they commonly reported mixed causes related to social causes: such as education difficulties and workload (14/21),

economic problems (8/21), family related issues such as conflict and loss (6/21), conflict with friends (3/21), psychological causes such as "thinking too much" (7/21), adjustment to the new environment (life changes) (4/21), mismatch of expectations (4/21), and love related issue (3/21).

> "Yeah, the main reasons for my illness are: thinking too much about what to do after graduation, because I am not equipped with the necessary knowledge and skills. Second, as I have told you before, my mother and father were died and the only source of support by this time is only my sister. She is not economically strong enough (hand to mouth) and she is uneducated. So, I always think about how I can change her life. She sacrificed a lot for my life starting from early childhood; she expects more from me after graduation. You know, when I face a shortage of money, I do not want to ask her, because I know her economic capacity. The third is difficulty of education. While I am thinking all about these issues, I become anxious and I start to think I am living meaningless life. Internally, I have a lot of unresolved issues." (A 22-year-old male, single)

5.2.5. Perceived severity of mental distress

More than half (12/21) of the participants perceived that their distress was very severe and they feared that their distress would become yet more severe. The remaining respondents rated their problem as mild (6/21) and moderate (3/21).

> "It (the distress) is very severe problem, even by this time I dislike learning. Can you believe that in our dorm, there are 32 freshman students and in every night they sing a song; when you inform them to stop disturbing, their response is do you want to control us while we are living more than 30 students together in a single class? When you think all these things, you prefer to leave the campus, but what can you do when your families are poor and live in rural area." (A 20-year-old male, single)

5.2.6. Impacts of mental distress

Participants were asked an open ended question concerning the difficulties that the distress caused them. Most of them replied that their distress adversely affected the interaction with other people (causing conflict with family and friends), reduced academic achievement, caused them to feel sad and angry and reduced their motivation to study (table 19).

Table 19: Consequences of experiencing mental distress

Impacts	Total	Illustrative quotes
Difficulty of interacting with other people	17	"When I become anxious, I hit the door; I fight with my friends. I was fighting with my family both physically (during break time) and via phone. They (family) did not give me the amount of birr I need. You know, farmers prefer to give you half quintal of cereal to 10 birr. Our family assumes that if one student entered to university, every cost of the student is covered by the government. I do not pick their cell-phone when they call me, because personally I do not like to give mercy for other people." (A 20-year-old male, single)

Poor academic result	15	"Yes, I did nothing in terms of my education; I scored low grade. The instructors knew that I did not attentively follow them and they said you are not here, body present mind absent. I sat in the classroom and I went back to the dormitory when the time is out." (A 22-year-old female, in a relationship)
Emotional difficulties	15	"The problem caused me to feel sad, isolated, angry, and thinking life is meaningless." (A 20-year-old female, single)
Lack of motivation to study	11	"…I disliked learning. Then, I decided to withdraw and asked the head of the department. He advised me to continue my education so that I completed that semester in that way. Still I am not motivated to read/careless and lack attention." (A 20-year-old male, single)
Mind, the most affected body part	16	"The problem is totally affected my mind, because always I feel pain in mind." (A 20-year-old male, single)

5.2.7. Help-seeking behaviors and intention to seek professional mental health treatment

Most of the participants received care from multiple informal sources such as friends (12/21, advice) and religious leaders (4/21, holy water, fasting, and praying) and family (4/21, advice). Only three students received professional mental healthcare. However, all participants intended to receive mental healthcare from professionals, because they were afraid their distress would worsen with time.

> "Yes, I have received advice from religious leaders. The religious leaders understood that the problem is related with bad spirit and they ordered me not to be far from the church and to drink and sprinkle holy water, fast, and prayer. The religious leaders also advised me not to give-up, worry, anxious. Moreover, my friends advised me not to worry that nothing will happen on me and to go to church regularly. I need help if the problem has a solution, because I have fear. From the things that I fear all the time, I may not be with my friends all the time. One day I may go somewhere alone and at that time, I cannot properly manage myself so that the problem can throw me into abysm or burrow." (A 22-year-old female, in a relationship)

5.2.8. Coping strategies

Under this theme, there were two sub-themes; positive and maladaptive coping strategies that students used to manage their mental distress. Attending church, discussing with friends, listening music and watching films were the most commonly reported positive coping strategies. On the other hand, sleeping too much was amongst the most commonly reported negative coping strategy. See table 20 below.

Table 20: Coping strategies to manage mental distress

Coping strategies	Number of participants	Illustrative quotes
Positive coping strategies		
Receiving support from friends	8	"I consulted my friend and he advised me to be planned,

		be cool, not to worry and use time effectively." (A 20-year-old male, single)
Attending church	10	"When I become anxious, I go to church alone and sit silently, even sometimes I dislike to prayer, because of being tired…" (A 22-year-old male, single)
Listening music and watching films	5	"I tried not to be anxious by watching films and listening music." (A 20-year-old female, single)
Negative coping strategies		
Sleeping too much	5	"To forget the problem, I sleep for a long time, even some times until missing my class/education." (A 20-year-old female, single)
Drinking alcohol	2	"I tried to manage the problem by things making me happy. For instance, drinking alcohol." (A 20-year-old male, single)

Based on the qualitative findings, a conceptual framework of explanatory models for mental distress was developed. The model shows the link among explored constructs. As it can be observed in figure 8, the psychosocial factors caused students to experience mental distress that was mainly manifested by psychological and somatic symptoms. This mental distress impacted students' emotions, motivation, relationships with others and educational outcomes. The impact of mental distress was the fear that it could become more severe in future, which led the students to need professional mental health services, despite using coping strategies and receiving support from informal sources to manage the problem.

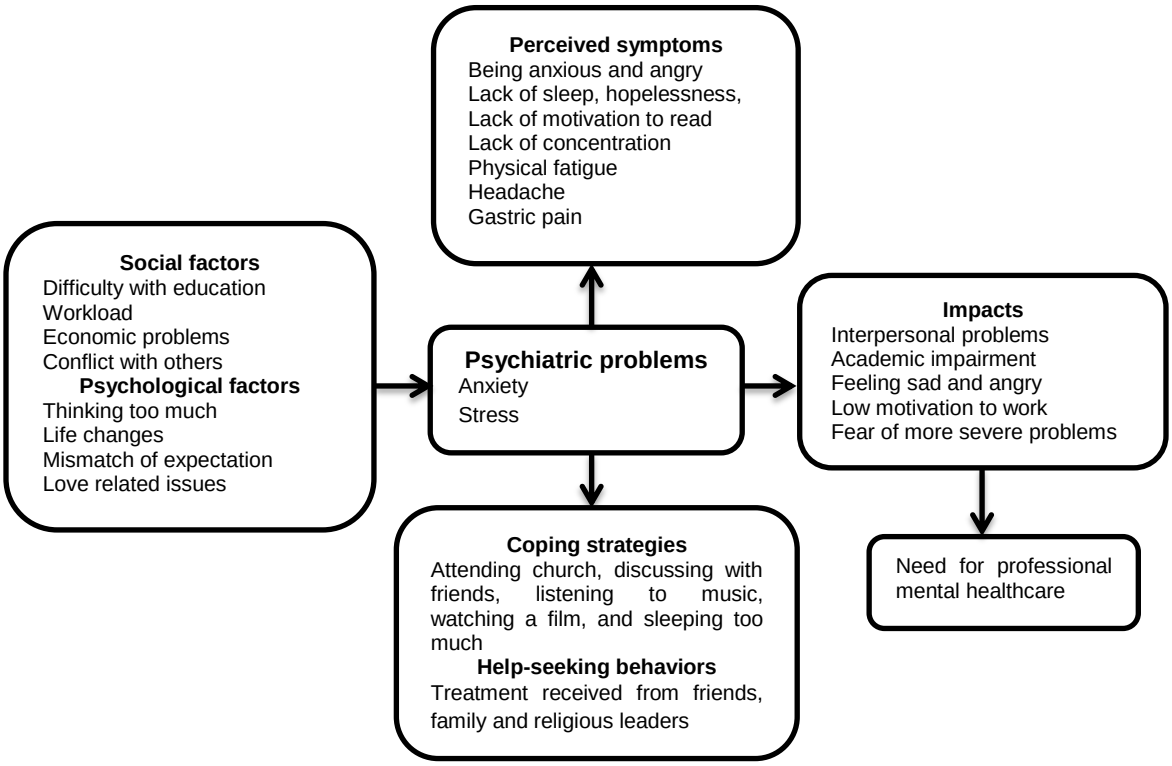

Figure 8: Conceptual framework of explanatory models of mental distress

5.3. Study three: Feasibility and acceptability of brief individual Interpersonal Psychotherapy adapted for Ethiopia among university students

This study was associated with the above-mentioned quantitative and qualitative studies. In the above mentioned two studies (study one and two), the researcher identified the prevalence of mental distress, professional mental healthcare need along with barriers, preferred treatment modality, the total number of intervention sessions and frequency of the session per week, preferred counseling place, duration of a single session and explanatory models of mental distress. All these findings were linked with study three that aimed to evaluate the feasibility, acceptability, and mental health outcomes of culturally adapted psychological intervention, IPTE. The details of the findings are presented below.

5.3.1. Demographic characteristics of the study participants

As can be seen from table 21 below, the proportion of male-female participants was equivalent (50%) and 79.2% were single. Their age ranged from 18 to 23 years with a mean age of 21years (SD = 1.49). The majority (75%) perceived that the causes for their mental distress were disagreement (conflicts with family, friends and dorm mates) and life changes (the problem of adapting to university life, separation or rejection by a lover and loss of support that caused economic hardship). None of the participants were receiving treatment from traditional healers or from other sources throughout the study period and 50% reported that their distress started two years prior to this study. All participants reported that they did not have concurrent medical conditions such as HIV, TB, malaria, diabetes and heart disease and substance use. They were not taking any medication during the intervention period; they reported no previous experience of gender-based violence and no past attempts of suicide and harming others. Nine students (37.5%) had thoughts of suicide and one student (4.2%) had a plan to commit suicide. Six students (25.0%) had thoughts of harming others in the past month. Students who had suicidal thoughts, a suicide plan and thoughts of harming others received regular follow-up from their counselors in each counseling session, although their thoughts of suicide, suicide plan and thoughts of harming others were not acute and did not hinder them from getting benefits from the IPT-E intervention.

Table 21: Demographic characteristics of the participants (n = 24)

Variable	Number	Percent

Marital status	Single	19	79.2
	Married	2	8.3
	In relationship	3	12.5
Age	Mean	20.67 (1.49)	
Perceived cause of mental distress	Grief	3	12.5
	Conflict	9	37.5
	Life change/role transition	9	37.5
	Conflict and life change	2	8.3
	Loss and life change	1	4.2
Did not received treatment from traditional healer during the study period		100	100
Problem has been present continuously for 2 or more years	Yes	12	50
Had ideas of suicide in the past month	Yes	9	37.5
Had plan of suicide in the past month	Yes	1	4.2
Had thoughts of harming others in the past month	Yes	6	25.0
Is the client appropriate for IPT-E?	Yes	24	100

5.3.2. Feasibility of Interpersonal Psychotherapy adapted for Ethiopia

All participants provided written consent to participate in the IPT-E. Of the 26 eligible participants who initially participated in the intervention, 24 completed the full eight-session treatment that resulted a completion rate of 92.31%. The remaining two withdrew from the intervention (one participant attended session one and the other attended three-sessions), which yielded in the attrition rate of 7.69%. The mean number of the intervention sessions attended was 8. All the counseling sessions were conducted in the Amharic language, because all the clients were able to speak the Amharic language.

5.3.3. Acceptability of Interpersonal Psychotherapy adapted for Ethiopia

The total mean score of client satisfaction received for IPT-E was 27.83 (SD = 4.47; range = 12-32). The majority (66.7%) rated the quality of the intervention they received being excellent and their qualitative expression also strength this evidence as follows:

> "As to me, I'm very happy, even when I saw the poster, I assumed that I got my solution and considered as እንደተፈወስኩ (healed). Then, I came here and discussed with the counselor; the service he gave me was comforting and very nice. The treatment I received was interesting and excellent." (A 20-year-old male, single)

Forty-six percent of the study participants reported that they definitely received the kind of the services they expected and almost all of their needs were met. Despite this, most students

reported the treatment they received was beyond their expectations and that it fully addressed their mental healthcare needs.

> "Normally, when I came to this office, it was because of my friend's advice. I was not expecting to get such kind of service; I just came to tell my የውስጤን ብሶት (translated as internal turmoil) if somebody is ready to listen to me; however, what I was thinking was completely different from what I received. It is beyond my expectation." (A 21-year-old female, single)

The majority (75.0%) of the participants reported that they would definitely recommend the intervention received to their friends in need of similar care. Over half (54.20%) reported that they were very satisfied with the intervention they received. They all reported being satisfied by the treatment given and they would recommend it to their friends with mental distress who were in need of similar mental healthcare.

> "I received important care that not only helps me, but also enables me to advise someone else; now, I can advise another person who has similar feelings of distress. I can refer or bring here students with such problems." (A 22-year-old male, single*)*

Most (70.80%) participants reported that the mental health service they received helped them to deal effectively with their problem and half (50%) of them rated their overall treatment satisfaction as mostly satisfied or very satisfied.

> "My face speaks; I am very happy today; my previous happiness has returned again. I did not know the name of the students in our class; I entered to the class before anyone and sat at the back, then I left the class at the end when all students went out. But now, I play and communicate with the students; we go together to the dormitory. I have a good relationship with dorm mates; there is a student who disturbs me in the dormitory; I tolerate him very well; if I were in my previous mental state, I would conflict with him." (A 23-year-old male, single)

Most (62.5%) participants reported that they would definitely return to the counseling office if they need care again.

> "I hope I would not have to face the problem, but if it occurs again, I will come back." (A 23-year-old male, in a relationship)

5.3.4. Fidelity of Interpersonal Psychotherapy adapted for Ethiopia

The majority of the participants attended 8 IPT-E sessions. Each session lasted 40 to 60 minutes as is recommended by the IPT-E guidelines. In addition to the provision of training for the counselors and regular supervision of the delivery of IPT-E counseling service, the accomplishment of the key activities to be done in each session were immediately evaluated. All

counselors ticked “Yes” for all activities, indicating that the necessary tasks were done in each of the IPT-E session (table 22).

Table 22: Treatment adherence and dose

Items	Session 1		Session 2		Session 3		Session 4		Session 5		Session 6		Session 7		Session 8	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Did you administer IPT-E screening tool and TTF?	✓		✓													
Did you discuss psycho-social stressors which occurred around the same time as the symptoms started or worsened?			✓		✓											
Did you ask about people in the patient’s life who may be helpful to them now?			✓		✓											
Did you discuss the goal of treatment?			✓		✓											
Did you discuss details of communication interactions or social role expectations in close relationships?					✓		✓		✓		✓		✓			
Did you use open questions and reflective, empathic statements to improve the patient’s experience of feeling understood by you?			✓		✓		✓		✓		✓		✓		✓	
Did you discuss ways to find or use people as social supports?					✓		✓		✓		✓		✓			
For grief, did you explore the events of the death, the relationship with the dead person, or ways to cope with the loss?					✓		✓		✓		✓		✓			
For role transitions did you explore the challenges of the patient’s new social role & what’s changed?					✓		✓		✓		✓		✓			

For disputes, did you explore the relationship with the disputed other; the issues in the disagreement; and identify problems and alternative ways to resolve misunderstandings?	✓	✓	✓	✓	✓	
Did you review the patient's experience of treatment?						✓
Did you discuss contingency plan in which the patient returns to the counseling office if they experience a relapse?						✓
Did you ask if the patient have any worries or feelings about concluding treatment?						✓

5.3.5. Outcome evaluation

The IPT-E showed preliminary effectiveness in decreasing symptoms of mental distress and improving function among students. There was a statistically significant decrease (p-value = 0.001) in mean symptoms score of mental distress from baseline (M = 14.13, SD = 3.70) to eight weeks post assessment (M = 3.21, SD = 3.12). At the post-assessment, four participants (16.6%) scored above the cut-off 8 on SRQ-20 (2 participants scored 10 points and another 2 participants scored 14), even though they showed symptoms reduction in mental distress from the baseline.

The data collected through the Treatment Tracking Form showed a reduction of mental distress in each session. Likewise, there was a reduction in the frequency of mental distress symptoms from pre-to-post assessment over two months. During the pre-test a large proportion of the participants reported that they experienced symptoms such as being sad, miserable or hopeless (46%); had little pleasure in doing things (54%); felt anxious (67%); and experienced a lack of energy on several days in the past one month (50%). Of all participants, 29% felt restlessness and 38% had trouble concentrating on conversations or reading nearly every-day in the past month. Of all participants, 33% felt bad about themselves and unable to control worrying several days or nearly every-day in the past one month and 42% had trouble sleeping nearly every-day in the last

month. Furthermore, 46% participants felt afraid that something awful might happen without a reason and 50% experienced more than 5 physical symptoms several days in the past month.

After the two months IPT-E intervention, the majority (75%) of the participants no longer felt sad, miserable or hopeless and 71% had pleasure in doing things. The majority (75%) reported they had no symptoms of anxiety and 79% recovered their energy after the intervention. Almost all (91.70%) of the participants found their restlessness and feeling bad about themselves had remitted. They no longer had difficulty concentrating on conversations or reading. Most (79%) participants no longer experienced problems controlling their worrying and 88% were sleeping well. Finally, the majority (75%) lost their dread of something awful happening without reason and 83% no longer had 5 or more physical symptoms. For further information see table 23.

Table 23: Pre and post-tests percentage occurrence of metal distress symptoms

Questions	Pre-test					Post-test			
	Not sure (%)	Several days (%)	Over half the days (%)	Nearly every day (%)	Never (%)	Several days (%)	Over half the days (%)	Nearly every day (%)	Never (%)
Felt sad, miserable, down or hopeless?		45.8	12.5	37.5	4.2	16.7	4.2	4.2	75
Felt little pleasure or interest in doing things?	4.2	54.2	8.3	25	8.3	16.7	4.2	8.3	70.8
Felt nervous/anxious?		66.7	25		8.3	12.5	8.3	4.2	75
Not enough energy, that everything is an effort?	4.2	50	20.8		4.2	8.3	8.3	4.2	79.2
Felt so restless it is hard to sit still?	8.3	25	25	29.2	12.5	4.2	4.2		91.7
Had trouble to concentrating on conversations/reading?	4.2	20.8	20.8	37.5	16.7	8.3	4.2		87.5
Felt really bad about yourself, that you are a failure or that you have let your family down?	12.5	33.3	12.5	20.8	20.8	4.2	4.2		91.7
Felt you could not stop or control worrying?	8.3	33.3		33.3	25	16.7	4.2		79.2
Had trouble sleeping?	8.3	12.5	20.8	41.7	16.7	4.2	4.2		87.5
Felt afraid as if something awful might happen without a reason?	16.7	45.8		20.8	16.7	20.8	4.2		75
How many days have you had more than 5 physical symptoms (aches and pains, palpitations, burning/numbness/crawling sensations)?	4.2	50	4.2	25	16.7	12.5	4.2		83.3

The overall mean score of WHODAS-2 was significantly improved (p-value = 0.001) from baseline (M = 34.33, SD = 10.70) to post assessment (M = 22.71, SD = 8.34). The mean scores of WHODAS sub-scales were significantly improved from baseline to eight weeks assessment. A total number of days suffering from mental distress were reduced following the intervention. For detail information, see table 24.

Table 24: Functioning at baseline and post-test

Measure	Baseline (n = 24)		8-weeks (n = 24)			
	M	SD	M	SD	Z	P
WHODAS sub-scales						
Understanding and communicating	5.83	2.04	4.00	2.17	-3.28	0.001
Getting around	5.63	2.14	3.88	1.94	-3.34	0.001
Self-care	3.92	2.12	2.83	1.24	-2.37	0.02
Getting along with people	5.67	2.71	3.96	2.03	-2.45	0.01
Life activities	6.42	2.24	3.38	1.35	-3.96	0.001
Participation in society	6.88	1.75	4.67	1.93	-3.80	0.001
Total WHODAS-2 score	34.33	10.70	22.71	8.34	-4.18	0.001

Note: M = Mean; SD = Standard deviation; Z = Z-value; P = P-value

5.3.6. Change in mental distress following the intervention stratified by selected variables

Baseline mean score of SRQ-20 was significantly influenced by gender, duration of depressive symptoms and reporting thoughts of harming others in the past month. However, at the post-test, mean score of SRQ-20 was not significantly affected by any of the pre-specified characteristics of the participants. There was no statistically significant difference in the mean score of SRQ-20 by marital status and perceived causes of mental distress at pre and post-assessments (table 25).

Table 25: Mean score and standard deviation of selected variables at baseline and post-test

Variable	SRQ-20 score at baseline				SRQ-20score at 8-weeks			
	M	SD	T/F	P	M	SD	T/F	P
Sex								
Male	12.58	3.29			2.00	3.19		
Female	15.67	3.55	2.21	0.04	4.42	2.64	2.02	0.06
Has the problem been present continuously for 2 or more years?								
No	12.25	3.70			3.58	3.26	0.58	
Yes	16.00	2.70	-2.84	0.01	2.83	3.07		0.57
Ideas of suicide								
No	12.87	3.50			3.73	3.45	1.07	
Yes	16.22	3.15	-2.36	0.03	2.33	2.40		0.3
Thoughts of harming others in the past month								
No	13.28	3.51			2.78	2.96	-1.2	0.25
Yes	16.67	3.27	-	0.05	4.50	3.51		

			2.08					
Marital Status								
Single	14.63	3.85			3.26	3.41		
Married	12.50	0.71	0.86	0.44	1.50	0.71	0.38	0.69
In relationship	12.00	3.46			4.00	1.73		
Perceived cause								
Loss	14.33	4.73			3.26	5.51		
Disagreement	14.88	3.89	0.26	0.90	4.33	2.00	1.57	0.22
Life change	13.11	4.08			2.22	3.07		
Disagreement and life change	15.00	0.00			0.00	0.00		
Loss and life change	14.00	0.00			7.00	0.00		

5.3.7. Impacts of Interpersonal Psychotherapy adapted for Ethiopia

The qualitative result of the IPT-E indicated that most participants reported they benefited a lot from the intervention and it enabled them to improve their interpersonal relationships, confidence, communication skills, hope, happiness and motivation to work. The following illustrative quotes were good examples that contain what has been said.

> "Ok, thank you, eh…the care that I received is like የደረቀን ዛፍ እንደጣቆጥቆጥ ነው (translated into English as "a dry tree is sprouting"). I received my previous identity; I am confident, strong, have good communication with my friends (my friends are surprised by my improvement), and I am also happy." (A 21-year-old female, single)

Another student stated that:

> "I said to you I have no hope previously and I came here to check whether it works or not because I decided to leave the University, but now I decided to continue my education." (A 23-year-old male, single)

6. DISCUSSION

The present study was aimed to examine three linked objectives. These were: (a) to assess the prevalence of mental distress, need and barriers to receiving professional mental health services among undergraduate students, which was institution based cross-sectional study (study one); (b) to explore explanatory models of mental distress among undergraduate students, phenomenological research design (study two); and (c) to evaluate the feasibility and acceptability of IPT-E among undergraduate students (study three), pre-post-test quasi-experimental design. In this section of the dissertation paper, the main findings of the three objectives were separately discussed in line with the previous evidence conducted in high-income and LMIC countries.

6.1. Mental distress, need and barriers to receiving professional mental healthcare

For this objective of the study, the prevalence of mental distress, need for professional mental healthcare and barriers to receiving mental healthcare were investigated. Furthermore, the associations between demographic variables with the prevalence of mental distress, with need for mental healthcare and with treatment barriers to receiving mental health services were assessed. Hence, these and other related findings are discussed and interpreted with the previous findings.

6.1.1. Prevalence and demographic factors associated with mental distress

The prevalence of mental distress in university students reported in the present study is higher than that reported in the meta-analysis of the general population studies in Ethiopia (224). Perhaps this finding is not surprising, because university students are more likely than the general population to experience mental stress (258). The possible difference between individual studies reviewed in the meta-analysis (224) and the present study could be partly attributed to the discrepancy in data collection instrument with cut-off points used, age group, and setting. The data collection tools used in the most individual article within the meta-analysis study were ICD-10, PHQ-9, EPDS, K10, HADS etc. with different cut-off points, but the present study used SRQ-20 that might be one cause for the discrepancy. The other was a difference in age group and setting, where young person experience higher mental distress compared with adults in the general population.

The current prevalence of mental distress is higher than that reported in previous studies conducted among university students (19, 84). One possible reason for the discrepancy is the difference in the cut-off values used to define mental distress (19, 84). The other explanation for the difference is that other studies did not use locally validated instrument (19). Although the present findings rates of distress is lower than in some reported in previous studies of students in Ethiopian universities (25, 77). The first possible justification for the difference might be the data collection tool being used to screen mental distress (25, 77). The second possible reason for the difference could be the timing of the data collection, where the current data collected well in advance of the final examinations. The present finding is comparable with a study report conducted in Jima University (259). This might be resulted from the similarity of the data collection tool and the cut-off points used to define mental distress.

After controlling for confounding variables, female students were twice more likely to experience mental distress than male students. This finding is consistent with the previous evidence reporting that female university students encountered more mental distress than male students (19, 41, 78, 80, 81, 83). The possible reason for this could be associated with being open to express symptoms of mental distress, a higher rate of gender-based violence compared to men and rumination (260). Although some studies found there was no significant difference in the degree of mental distress between female and male students (73, 75, 82, 92). The present study has also shown that first-year students had twice the risk of developing mental distress than fifth-year students, which is similar to previous studies' reports (41, 81, 82, 92, 97). The high prevalence of mental distress among first-year students could be associated with (a) loss of one's high school friends; (b) the need to form new relationships and groups; (c) moving away from home and becoming acquainted with new university roommates; (d) dealing with different methods of learning, and (e) the expectation of increased autonomy in life and studies (126).

In the present study, students who reported a family history of mental illness were twice as likely to develop mental distress than students with no family history of mental illness, which is consistent with the prior evidence (18, 41, 83, 84). The possible reason could be the association of biological factors with the development of mental distress; for instance, students with a family history of mental illness might be more vulnerable to mental distress. In addition, the present study has shown that students who reported a history of substance use were six times more likely

to experience mental distress than students who reported no history of substance use. This finding is consistent with previous studies that reported university students who experienced harmful substance use were more likely to encounter mental distress (19, 77, 79, 83, 84, 91, 92). But, the present finding contradicts finding from a study in Hawassa University that reported a history of substance use was not a significantly associated risk factor for mental distress (82). The difference might be due to the sample size variation and the participants were restricted to medical students (82). The report of a family history of mental illness and substance use were associated factors for mental distress only in the adjusted model. Such a phenomenon was probably occurred due to the interaction effects of other controlled variables in the model that needs further analysis.

6.1.2. Need for professional mental healthcare

The high need for professional mental health services in the current study suggests that most students with mental distress in WSU remain untreated. This may not be surprising, because most universities in LMICs are ill-equipped to provide services for students' mental health issues (17), although most students have a positive attitude toward receiving counseling service (61). A previous study reported only a few university students received mental health services for their mental health problems as a result of lack of appropriate services (261). The present finding is higher than previously reported in the general population of Ethiopia. For instance, a meta-analysis study reported that the pooled prevalence of the professional mental healthcare seeking intention of people with depression in Ethiopia is 42% (227), which is much lower than the current finding. The possible explanations for the difference could be a difference in mental health literacy, study population and the data collection instruments being used. The present finding supports the previous findings that 57.9%-66.8% of university students screened positive for mental distress but did not receive any professional mental health service (28, 140, 141). The similarity of the results may be due to using similar data collection tool for a similar age group of participants. Moreover, the present finding exceeds a study result from India, where 44% of medical students reported perceived mental healthcare needs (170). The difference might have resulted from sample size variation, study setting and combination of the participants.

Furthermore, in the present study, 29.5% of students with mental distress did not seek professional mental health services, which is similar to previous finding, where 26% of

undergraduate students did not want to receiving professional mental health services despite feeling the need for it (170). The students reported their unwillingness to access mental health services was because the majority received support from informal sources, such as from religious leaders, friends, family and traditional healers. This supports the previous finding, where among the reasons why most college students did not want professional mental health services were that they were receiving support from family and friends (27). Besides this, the majority of mentally distressed students preferred a brief individual psychological intervention in the university counseling office lasting for 20-60 minutes over eight weeks. As evidence has shown the majority (95%) of college students preferred individual psychotherapy to group counseling (27) and most (50-60%) of them preferred brief psychological interventions over long-term therapies (262).

6.1.3. Barriers to receiving professional mental healthcare

Among the top five reported barriers to students from receiving professional mental health services, but who recognized a need for care, the first was thinking their mental distress would get better by itself. This belief may be associated with considering mental health problems less serious and so they are reluctant to use the available mental health services (263); it may also be associated with poor mental health literacy (264). The current finding supports a study reporting that the majority of college students believed that time itself would solve their mental problem (242).

Lack of knowing where to go to get professional care was reported as the second barrier to receiving mental health service in the University. However, WSU has four counseling offices and a teaching referral hospital that aim to provide mental health services for students with mental health problems. This information gap is probably caused by a lack of a general awareness of these services. This finding is supported by prior studies, where the majority of university students had no information about the availability of mental health service in their university (27, 61, 163, 265). However, the current finding contradicts the previous finding, where the majority of medical undergraduate students mostly reported lack of time as a major barrier to receiving mental healthcare among the instrumental barriers (170). The difference could be associated with sample size variation in the two studies, study setting and combination of the research participants.

Wanting to solve mental health problems by oneself was reported as the third common barrier to receiving mental health service in the present study. This suggests that most students may not want to share their mental health problems with professionals preferring to handle the problem by themselves. This is possibly due to perceiving their problem as not serious or transitory (10), being skeptical about the effectiveness of professional mental health service, fear of stigma, and privacy issue (28). As a result, they might prefer to manage their mental distress alone perhaps utilizing both positive and negative strategies such as problem-solving (266), substance uses and isolation (72) as examples. The present finding is consistent with the past studies reporting that a major barrier to receive professional mental healthcare among university students with mild to moderate depression and anxiety was preferring to self-medicate (142, 164, 170, 267).

The fourth barrier identified in the present study was denying mental health problems. Students may not want to recognize their mental health problems due to lack of knowledge about mental illness (264) or they may cope by denying their mental health problem by rejecting reality and not taking appropriate action to get help for their problem (72). This finding supports the prior finding that the majority of university students deny mental health problems which hindered them from receiving mental healthcare (29).

The fifth commonly reported barrier to using mental health service was preferring to get support from informal sources. This suggests that the majority of students receive mental health help from friends, family, relatives, religious leaders and traditional healers (25), which is also common practice in the general population of Ethiopia (268). The present finding supports the previous studies, where informal sources of mental healthcare reported by college students was cited as a reason for not receiving mental health services at their university (27, 164, 264). Surprisingly, of the five major barriers reported, except for the information gap about the availability of counseling services in the university, the remaining four were attitudinal related barriers. This supports prior findings, where the majority of undergraduate students commonly reported attitudinal related barriers to receiving mental health services (164, 170).

6.1.4. Demographic factors associated with barriers and the need to receiving mental healthcare

Interestingly, the current study found that fourth-year students with mental distress were more likely than fifth-year students to report attitudinal, instrumental, and stigma related treatment barriers despite their number being small. Since, the majority of the fourth- and fifth-years students in the present study were from the engineering department, the possible difference could be that as the level of study year/age increases, students become more stable and have better mental health literacy (269, 270). In this sense, fourth-year students might encounter more barriers to receiving mental health care compared to fifth-year students. However, the present finding contradicts a study reporting first-year students are more likely than third-year and senior students to perceive a greater number of barriers to receiving mental healthcare (29). The difference possibly relates to the difference in the data collection tool, study setting, and sample size in each level of the study year. Another study found that there was no correlation between academic year and barriers to receiving professional mental healthcare among medical undergraduate students (170) contradicting the present finding. This dissimilarity might be explained by sample size variation, data analysis statistical tool difference, study setting and combination of the research participants.

The current study also found that students from rural backgrounds were more likely than students from urban backgrounds to face instrumental related barriers to accessing professional mental healthcare. This might be because students from rural areas have less knowledge about mental distress so that they may not have sufficient information about the availability of free mental health services in the university or consider such services are relevant to their needs (271). The present finding compare positively with a study conducted in Australia reporting that adolescents from rural areas have more instrumental related challenges for receiving formal mental healthcare than adolescents from urban areas (272). The current study also shows that second-year students reported more instrumental related barriers compared with fifth-year students. This was probably due to the interaction effects of other controlled variables in the adjusted model that need further study in the future.

Furthermore, the present study shows that a family history of mental illness is significantly associated with the barrier to services caused by the students denying their mental distress. This could be because students had negative experiences of mental illness in others and denying their distress worked as a coping mechanism (159). Surprisingly, the present study has found no association between demographic variables and perceived need for professional mental healthcare, which is similar to previous findings reporting that there was no difference in mental healthcare need based by gender (145) and urban/rural place of origin (158). However, it contradicts with several prior findings that report university students' need to receiving professional mental healthcare was associated with sex (53, 143, 154, 155), age (154-157), level of study year (141) and substance use (160).

6.2. Explanatory models of mental distress among undergraduate students

In this qualitative study, feeling anxious, fatigue, headache, and hopelessness were the most commonly reported complaints by university students. Most of the participants labeled these complaints as anxiety or stress. The most commonly reported causal explanations were related to social and psychological issues. More than half of the participants perceived their mental distress as a severe problem. Most students reported that the onset of their mental distress ranged from six months to four years. Their mental health problem mainly affected their head which in turn had significant negative impacts on their interaction with other people, their academic achievement, emotions, and motivation to study. Almost all participants received care for their mental distress from informal sources and all of them had the intention to receive mental healthcare from professionals, because they feared their distress would worsen with time. Participants reported that they managed their mental distress by using both positive and negative coping strategies.

Most of the students conceptualized their mental health problems in terms of psychological and somatic symptoms. The most frequently reported psychological symptoms were being anxious and feeling of hopelessness. Even though there is a difference in a context in the present study, these symptoms have also been previously identified in LMICs and in a high-income country where most young adults elaborated their distress by feeling of anxiety (273) and lack of hope (274). Other frequently reported complaints in the current study were physical fatigue and headaches. Somatization of mental distress is common worldwide, for example, in many African

countries (275), in Oman (276), in Iran (277), and in India (107) where people with anxiety and depression express their distress in terms of medically unexplained symptoms. The expression of mental distress in terms of somatic symptoms is a complex question and might be linked among other things to fear of public stigma (278) and cultural influences (16).

Most of the students labeled both psychological and somatic symptoms as a manifestation of anxiety or stress. Although the context is different, a similar result is also found in Vietnam, where most students labeled depression symptoms as stress or anxiety (115). Being able to give a specific psychiatric term to the complaints may be because of the students' educational status which may have influenced their mental health literacy; the symptoms of anxiety and stress are very common among university students and considered as normal life challenges (10). Most students attributed their mental distress to more than one causal factors, similarly in North Western Ethiopia (279) and Kenya (121) most participants reported psychosocial explanations as causes for their mental health problem. Of the causal factors, students reported more education related issues. These academic stressors are heavy academic loads, exam difficulty (280), difficulty with assignments (72) and the time constraints required by courses (276). Previous studies also found that most university students' major stressor for mental health problem was linked to educational stressors (281, 282).

The next commonly reported social factors were economic problem and interpersonal difficulties. Most of the students who join university in Ethiopia encounter economic challenges. This is especially challenging for students from rural background because: (a) their family assumes that if their student joined in a university, they expect every cost is covered by the university, but in reality a public university in Ethiopia covers only students' food, education, dormitory, and medication costs with a cost-sharing system; (b) almost all undergraduate students in Ethiopia are economically dependent on their families' income; and (c) there is difficulty of accessing bank and telecommunication services for students who come from rural areas. The inability to receive money from families in a timely way can cause mental distress; the death of a family member who was the main breadwinner for the family again creates mental distress for the student involved. Similar findings showed that poverty and conflict within the family are causal factors for psychological distress (72, 282, 283). In sum, this is not uncommon for most university students to attribute mental distress to psychosocial causal factors (147).

In the present qualitative study more than half the students reported that their mental distress was very severe. This in turn affected their interactions with others, their academic achievement, their emotional state, and their motivation to work. In prior studies most participants reported their mental distress was severe (275) and negatively affected their social interaction (284), feeling (277), education results (11, 276) and appetite to work (285). Students reported different coping strategies to manage the impacts of their mental distress. Of these, getting social support from friends, attending church, and listening to music and watching films were among the healthy coping styles used to recover and get relief from mental distress without causing negative health effects, which were also reported in the previous studies (11, 72, 281, 282, 286, 287).

On the other hand, the present study found that sleeping too much was reported as unhealthy coping mechanism that could harm the students' education outcomes by decreasing their motivation to study. The use of this maladaptive coping strategy might be caused by feeling hopelessness (288) or associated with being unable to control their mental distress (289). Apart from seeking help from alternative sources such as friends, religious leaders, and family, all students wished to receive mental healthcare because of fear and increasing severity of the distress. This might indicate the severity of their mental distress because most young adults perceive help from professionals as a last resort and the sign of weakness (11).

6.3. Feasibility and acceptability of Interpersonal Psychotherapy among university students

Findings of the current study indicated that IPT-E is feasible and acceptable for university students with mental distress. All eligible students consented to participate in the intervention and only two failed to complete the 8-session individual IPT-E intervention. Overall, participants were highly satisfied with the care they received. IPT-E provided a promising preliminary result in an Ethiopian University to decrease the symptoms of mental distress and improving the functioning of university students.

Most of the study participants completed the 8 weekly sessions, which is comparable with the previous feasibility studies where the majority of depressed adolescents completed brief individual interpersonal counseling (45, 194). The possible justifications for the feasibility of the IPT-E were: the counselors had received intensive training supported by clinical practice which helped them to engage the students; close supervision by the reasercher of this study; use of a

fidelity checklist and the preparedness of the clients to give their counselors advanced notice of their absence. As well, this study was conducted in a building where the students' general medical clinic is located so students are not seen to be attending a mental health clinic. This potentially minimized stigma and increased the likelihood of attending the IPT-E sessions regularly (45). In addition, the emphasis on developing a rapport in IPT-E also played a role for most participants who attended all 8 sessions (290). However, two participants withdrew from the IPT-E intervention, because one participant was transferred to a university near to his family and the other was not willing to continue the intervention because he was too busy with school work.

Study participants reported that they were highly satisfied with the intervention they received, indicating that IPT-E was acceptable. A previous study reported that adolescents who received brief IPT were highly satisfied with the care they received (45). Similarly, in another study adolescents who received 8 sessions of IPT treatment were mostly satisfied/very satisfied with the care they received (291). The small attrition rate in the present study indicates the acceptability of the intervention being provided to the students. The present study demonstrated very good treatment adherence with the majority attending 8 treatment session, which is comparable to a prior study where the treatment adherence of IPT was reported by the counselors as good (194). Along with the educational status of the counselors, the didactic training supported by clinical practice and ongoing clinical supervision enabled the counselors to deliver the IPT-E intervention effectively, which is likely linked to the participants' satisfaction with the rendered counseling service.

The implementation of IPT-E indicates promising results demonstrating a significant decrease of the symptoms of mental distress and improved functioning of the university students in the study. This finding is consistent with previous studies, where most adolescents showed significant improvement in symptoms of depression and social functioning after receiving IPT intervention (45, 49, 194). Another studies also reported that adolescents who received IPT showed a reduction of depression symptoms as compared to a control group (292, 293). Similarly, a study in a higher education institution reported that students who received IPT had significantly reduced symptoms of depression compared to a control group (48). Other reasons associated with this preliminary demonstration of effectiveness of IPT-E are the didactic

practical training and ongoing clinical supervision of the IPT-E counselors (294). As well, ongoing monitoring of the students' mental distress symptoms and functioning; and the fact that good cognitive capacities (295) and high educational level (296) are associated in the literature with a good response to mental health interventions. Besides, evidence has shown that culturally adapted psychological intervention is four times more effective in improving mental health outcomes than adopted psychological intervention. Cultural adaptations fosters clients' mental health literacy, decreases barriers to accessing mental healthcare and enables counselors to be culturally competent (219).

The first onset of most mental health disorders occurs in the age range of 15-25 years (297) and most undergraduate university students are within this age category. As evidence shows, the first-onset of mental health problem can be treated better than the recurrent mental health problem, which might explain why the preliminary effectiveness of IPT-E among the students is high (26). Other reports note that mild to moderate mental distress among adolescents responds more easily to IPT as compared to severe mental distress (194, 298). Culturally adapted IPT-E and the high completion of treatment rates of the participants contributed to the improvement of the above mentioned clinical outcomes. This accords with result from previous study, where culturally tailored mental health interventions enhanced the effectiveness of psychological therapy (299).

The ideal number of a brief counseling session for anxiety and depression ranges from 6 to 8 sessions (300), which fits with the present finding where the mean attendance of IPT-E session was 8. Of note, the greater number of counseling session attended predicted the success of mental health intervention (301). The current finding is also similar to the previous result in which all participants attended a mode of 8 out of 8 sessions of individual IPT intervention (302). Furthermore, the researcher had taught the counselors during the training and clinical supervision to deliver the counseling service by establishing a good therapeutic alliance and rapport that enhanced the preliminary success of IPT-E in remitting symptoms of mental distress and disability (303).

7. STRENGTHS AND LIMITATIONS OF THE STUDY

7.1. Strengths of the study

As far as the researcher can establish, this study was the first of its kind that studied the prevalence of mental distress, needs and barriers to receiving professional mental health services, explanatory models of mental distress, the feasibility and acceptability of IPT-E together may serve as a guide to policy makers, clinicians, and researchers to invest and nurture university students' mental health services. The following represent this study's strengths. First, a large number of students participated in the investigation of the prevalence of mental distress in the cross-sectional study. Second, the current study used locally adapted instruments such as SRQ-20, SEMI and WHODAS-2 to identify the prevalence of mental distress, to explore explanatory models of mental distress and to assess functional disabilities, respectively. Third, there was a balanced number of male and female counselors that matched the sex ratio of participants in the feasibility and acceptability of the IPT-E study. Four, the small attrition rate in the IPT-E study was an important strength of the present study. Fifth, the training of the counselors in IPT-E was both practical and didactic and all teaching documents were transferred to WSU students' counseling office and clinic. Six, the close clinical supervision of the counselors so soon after they trained, and their adherence to the treatment model also promoted the success of the treatment.

7.2. Limitations of the study

All research has its limitations and the present study is not limitations free. First, the data collected using self-reported questionnaires might have involved recall bias. Second, the barriers to receiving mental healthcare and treatment satisfaction measuring instruments were not locally adapted, although they were properly translated and piloted for the present research purpose. Third, for the prevalence study (study one), data collectors were classroom representatives and were in a position to know the participants' responses to each item while checking missing items on the questionnaires. Four, the face-to-face interview conducted in the qualitative data (study two) might be prone to social desirability bias when reporting negative coping strategies. Five, the cross-sectional study did not pre-specify potential confounders and the variables that would be included in the multivariable analysis. Six, in the qualitative study (study two), most

participants were male students and female students' perceived explanatory models of mental distress were under-represented.

Seven, the feasibility and acceptability of the IPT-E study (study three) did not include a comparison group, which reduced the confidence of reporting mental health outcomes changes after the intervention given. Eight, the small sample size in the feasibility and acceptability of the IPT-E study may limit the generalizability of the findings so that the interpretation of the clinical outcomes should be undertaken with caution. Nine, there were no follow-up sessions because of the disruption caused by the occurrence of COVID-19 in the country, leading to the closure of the university. Despite this, the counselors were trying to follow their clients' status by phone, although it was difficult to collect follow-up data. Follow-up with the clients three and six months post treatment would be helpful to understand if the benefits of IPT-E lasted longer than the course of treatment. Ten, the qualitative acceptability of IPT-E data collected by the researcher might be prone to information bias; it would have been better to collect the data by an independent individual. Finally, measuring counselors' competency was not undertaken and could be a limitation of this study; however, although there was a plan to audio record all the counseling sessions, the clients were not comfortable with this. In an attempt to compensate for this, regular supervision was conducted until the end of the IPT-E intervention.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1. Conclusions

In the present study, the researcher made the following data-driven conclusions for each study objective. The high prevalence of mental distress, the large mental healthcare need and the report of barriers to access professional mental healthcare among undergraduate students is a call to address the disparity. Most students perceived mental distress as anxiety or stress manifested in terms of psychological and somatic symptoms that were mainly caused by psychosocial factors. Students perceived that their distress was severe and it significantly affected their education and social interactions. Therefore, exploring the explanatory models of mental distress among university students must be part of understanding the students' needs for mental healthcare and implementing locally feasible and acceptable evidence-based mental health intervention/s. IPT-E was feasible, acceptable and it showed promising results in significantly decreasing symptoms of mental distress and improving functioning among university students in a low-income country setting. Thus, scaling up this intervention to the national level and implementing it in higher education institutions in Ethiopia is advised. This must take into account the various explanatory models of students from different universities and cultural contexts with regard to their psychological distress. Such an undertaking would potentially address the burden of mental distress and reduce the large mental health treatment gap among students.

8.2. Recommendations

In this sub-section, the implications of the study are aligned with the practical, policy, and future research recommendations to unify the recommendations to concerned bodies.

8.2.1. Recommendations for practice

The present study identified the prevalence and associated factors of mental distress, need for mental healthcare, barriers to receiving mental healthcare, and demographic associated factors for barriers to receiving mental healthcare. All these points to the students' need to access mental health services to alleviate their suffering from mental distress and minimize its impacts on their academic work, health, general and social functioning. Understanding the explanatory models of mental distress helps student service counselors to understand and empathize with the students'

perspective of their distress. Most students attributed their mental health problems to psychosocial factors, which indicate the psychosocial determinants of mental health must be explored and taken into account by the counselors for students seeking psychological support. The training materials used to teach the counselors' knowledge and skills required for the delivery of IPT-E were transferred to WSU students' health clinic and counseling office. The preliminary mental health outcomes were the practical benefits of the present study, although this needs further RCT studies. However, the present findings provide useful information and direction for the provision of university mental health service.

Based on the present findings and their implications, the following recommendations have been forwarded to the university mental health professionals.

- Mental health providers, including the counseling offices in the university advised to ensure mental health services are accessible to the students and advertise these services for better utilization.
- Developing positive mental health strategies by enhancing students' mental health literacy and creating conducive environment that promotes and sustain positive mental health for every student.
- Mental health providers and university administrators are encouraged to prepare for the celebration of mental health day in the university, which can play a role in changing the major barrier to accessing mental health services, which is the attitude of students towards mental distress. The agenda for the day may incorporate: (a) creating awareness about the frequency of mental distress in students and its treatability as with any other physical illness; (b) encouraging students to consider and work to optimize their mental health, being ready to recognize their mental distress should it occur; and (c) increasing students awareness of the benefits of receiving effective, private and empathic mental healthcare from professionals.
- Exploring the explanatory models for mental distress among university students is an important part of understanding the students' needs for mental healthcare and the successful implementation of locally feasible and acceptable evidence-based mental health interventions such as IPT-E.
- IPT-E has been found to effectively address students' mental health needs. University mental health professionals can seek training to promote this evidence-based, brief, and

effective treatment in Ethiopian universities. Doing this will reduce the burden of mental distress and satisfy the need for receiving mental health service through minimizing barriers to receiving professional mental health service.

8.2.2. Policy recommendations

In Ethiopia, according to reports from the Ministry of Education, an increasing number of young adults are found in the universities attending to their education. Cultivating students' mental health has a positive impact on their academic and health development. However, as the present study showed the prevalence of mental distress and mental health treatment gap are alarmingly high, which is a call to policy makers to use the present findings to design mental health policy for university students at the national level. Importantly, an understanding of the explanatory models students have of mental distress has policy implications. To be effective Western evidence-based treatment models, in this case IPT requires adaptation to be culturally effective, feasible, and acceptable for university students. IPT was adapted to the Ethiopian context and named IPT-E.

The following recommendations are forwarded to policy makers.

- Since the prevalence of mental distress and mental health treatment gap are alarmingly high in the university settings, Ministry of Education and higher officials in the universities should consider improved access to psychological services for students with mental distress.
- Policy makers are encouraged to give priority to the mental health of university students, because poor mental health is a growing public policy concern, it worsens with age and has systemic effects on economic aspects of society.
- An awareness of the reasons why university students are not receiving professional mental healthcare, despite having the perceived need can help policy makers encourage the implementation of mental health interventions in universities. Policy makers can use the present study finding that identified the major barrier to receiving mental health services is related to attitudinal barriers.
- Although universities have counseling offices designed to provide mental health services to students with psychiatric problems, they are not currently providing the services expected of them. This could be associated with lack of updated trainings on

psychological interventions that equip them with the necessary knowledge and skills. Hence, the Ministry of Education and higher officials in the universities can provide support for the ongoing and updated training of personnel in the students' clinic and counseling offices.

- Ministry of Education and higher university officials should encourage studies that focus on the feasibility and acceptability of psychological interventions to treat university students with mental distress.

8.2.3. Recommendations for future research

The present study findings have contributed to the body of knowledge by identifying treatment gaps and barriers, by exploring explanatory models of students' mental distress and evaluating the feasibility and acceptability of the psychological intervention, IPT-E among higher education students. This may serve as a springboard for conducting implementation research and RCT for future researchers. The promising outcomes of the present interventional study will initiate researchers in LMICs universities to conduct an evidence-based intervention, where the prevalence of mental distress and treatment gap are high among students. Based on these facts, the following recommendations are forwarded to future researchers who have an interest in conducting similar or topics related to this study.

- Future research is needed to study barriers to receiving professional mental healthcare among students with mental distress who do not wish to receive formal mental healthcare preferring to receive help from informal sources. This will enable us to understand whether they are aware of their needs for professional care or not.
- Explanatory models of mental distress should be an integral part of future adaptation of psychological interventions for university students to be feasible, acceptable, and effective.
- RCT of IPT-E along with a longer follow-up period would secure the promising mental health outcomes of IPT-E to further scale up the service in similar settings.
- Furthermore, future study is needed why fourth-year and students from rural background perceived significantly more barriers to receiving professional mental healthcare.

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APPENDICES

Appendix A: Sub-study-I. Published paper

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RESEARCH ARTICLE Open Access

Mental distress, perceived need, and barriers to receive professional mental health care among university students in Ethiopia

Assegid Negash*, Matloob Ahmed Khan, Girmay Medhin, Dawit Wondimagegn and Mesfin Araya

Abstract

Background: There is limited evidence on the extent of the perceived need and barriers to professional mental health service delivery to university students with mental distress in low- and middle-income countries (LMICs). This study was designed to assess the prevalence of mental distress, perceived need for professional mental health care and barriers to the delivery of services to affected undergraduate university students in Ethiopia.

Methods: A multi-stage sampling technique was used to recruit 1135 undergraduate university students. Symptoms of mental distress were evaluated using the Self-Reported Questionnaire (SRQ-20) and a score of above seven was used to identify positive cases. The perceived need for professional mental health care was assessed using a single 'yes or no' response item and barriers to mental health care were assessed using Barriers to Access to Care Evaluation (BACE-30) tool. Percentage, frequency, mean, and standard deviation were employed to summarize demographic characteristics of the participants and to identify common barriers to mental health care service. Moreover, the association of demographic variables with total mean scores of BACE-III sub-scales was modeled using multiple linear regression.

Results: The prevalence of mental distress symptoms was 34.6% and the perceived need for professional mental health care was 70.5% of those with mental distress. The top five barriers to receiving professional mental health service were (a) thinking the problem would get better with no intervention, (b) being unsure where to go to get professional help, (c) wanting to solve the problem without intervention, (d) denying a mental health problem existed, and (e) preferring to get alternative forms of mental care. Coming from a rural background, being a second and fourth-year student, and a family history of mental illness were significantly associated with barriers to receive professional mental health service.

Conclusion: The high prevalence of mental distress, the paucity of mental health care, and the report of barriers to access what professional mental health care there is among Ethiopian undergraduate students is a call to address the disparity.

Keywords: Mental distress, Perceived need, Barrier, Professional mental health care, Ethiopia, Undergraduate students

* Correspondence: assegidn@gmail.com
Department of Psychiatry, College of Health Sciences, School of Medicine, Addis Ababa University, Addis Ababa, Ethiopia

Background

Mental distress is among the most common type of experience that accompanies mental health problem characterized by a mixture of different complaints such as feeling sad, worried, tense or angry [1]. Common mental disorders are a collective noun for anxiety, depression, and somatoform disorders that can adversely affect individuals across the world [2, 3]. According to the World Health Organization [4] 2015 report, over 300 million (4.4%) and 264 million (3.6%) of the total word population are estimated to suffer from anxiety and depression, respectively [5]. In particular, the contribution of these disorders to the global mental health burden from low- and middle-income countries (LMICs) is high [6]. However, the accessibility of mental health service is still very low, which accounts for the 76–85% treatment gap [7]. This gap has been linked to the lack of skilled human resources, lack of mental health policies, lack of access to mental health services, poverty, the preference for informal treatments, a lack of mental health literacy, the fear of stigma, and a low commitment from funders to access the services [8–12]. As a result, the majority of people living with anxiety and depression in LMICs do not receive professional mental health care [13].

As in any other LMICs, the prevalence and burden of anxiety and depression in Ethiopia is high. For example, a systematic review and meta-analysis study reported that the pooled prevalence of these disorders is 22% [14], which is associated with risk factors such as food insecurity [15], poverty, violence, migration, and substance use [16]. The burden of depression alone contributes to about 6.5% of the burden of diseases [16], however, as noted above few people are able to receive formal mental health services. Evidence showed that the pooled prevalence of help-seeking behaviors of people with depression is 38% [17]. In Ethiopia, most people with mental illness first contact non-professional care providers such as religious leaders and herbalists [18]. But, if the patient remains affected, he/she will go to western trained psychiatric care providers [18]. The psychiatric services are mainly concentrated in the capital city of Ethiopia, Addis Ababa [19].

To scale-up the limited mental health services across the country, the government of Ethiopia has planned to expand 100% of mental health care by 2020 [20]. The National Mental Health Strategy was developed in 2012 by the Federal Ministry of Health aimed to decentralize and integrate mental health services at the primary health care level [19]. At the university level, mental health services have been established to support students with mental health problems, although the quality of the service provided is under question. Currently, Ethiopia has 45 public universities, where 392,788 (255,657 male and 137,131female) undergraduate students enrolled in 2017. These students are adolescents, economically dependent on their family and full-time learner, they came from rural-urban backgrounds with diversified cultures, languages, and ethnicity.

The prevalence of mental distress is high among university students [21]. A cross-cultural web-based survey of 17,348 university students from 23 high-middle-and low-income countries reported that the average depression prevalence is 20% [22]. Another study also reported that the prevalence of depression and anxiety is 68.5 and 54.4%, respectively [23]. Similarly, the prevalence of these disorders ranges from 21.6–49% among Ethiopian university students [24, 25]. This high prevalence is associated with several factors including: (i) vulnerability of adolescence age for early onset of mental distress [26]; (ii) new identity formation [27]; (iii) challenges of being away from home for the first time [28]; and (iv) academic pressure, substance use [29], and financial difficulties [30]. Moreover, family histories of mental illness, conflicts with friends, not attending religious services, and being freshman are risk factors for mental distress among university students in Ethiopia [31, 32]. On the other hand, having high social support and enough pocket money are protective factors from mental distress [32].

Mental distress has a negative impact on university students' academic performance [29]. Evidence shows that mentally distressed students scored poor examination result compared with non-distressed students [33]. Although mental distress has such impact, the treatment gap remains large ranging from 37 to 84% [34]. This treatment gap is also high among Ethiopian university students, where majority of the students receive treatment from informal sources such as family, friends, relatives, and religious leaders [35]. There are several barriers that hinder students with mental distress from receiving mental health services. Among these: (i) receiving help from friends or family; (ii) preferring to manage mental illness by self; (iii) normalizing mental illness; (iv) thinking that mental illness would get better by itself [36]; (v) lack of perceived need; (vi) being unaware of the existence of professional mental health services; (vii) fear of stigma, concerns about privacy; (viii) skepticism about treatment effectiveness; (iv) socio-economic problem [34]; and (x) denying mental illness [37].

There are associations between demographic variables and perceived need for mental health care. Female students have more positive attitudes to the utilization of mental health services compared with male students; the possible explanations could be that women experience more mental distress and they give more value for support received from professionals [38]. Conversely, male students are more likely to seek mental health care compared with female students; this might be caused by the interaction effect of other demographic variables in the

analysis model [39]. Despite this, there is a finding reporting gender is not a predictor for seeking mental health care; possibly this is caused by insignificance gender difference in mean scores of depression and self-esteem [40]. Likewise, there is no gender difference in reporting barriers to receive mental health care [41]. Older students are more likely to have positive attitudes toward seeking mental health care than younger students; possibly caused by the past mental health care received [42]. Adolescents have a more positive attitude to seek mental health care than adults, because adolescents had more confidence in and better experience of using modern mental health care [39]. There are also insignificant difference in reporting barriers to access mental health care based on age [41].

Class years, family history of mental illness, and substance use are also reported as predictors to receive mental health care. For instance, first and fourth-years students are less likely to use mental health services compared with second and third-years students [43], although there is no change based on rural-urban backgrounds [44]. However, students who had personal contact with someone with a history of mental illness were significantly associated with decreased help-seeking intention; this could be possibly due to the negative experiences students had with a person who they know to have a mental illness [45]. Moreover, students with mental distress use substances to manage feeling of discomfort, which might hinder their interest or preparedness in seeking mental health care [46]. Mental distress, predictors, and barriers to receiving mental health care among university students occur globally, however, there might be higher prevalence, more complex stressors, lower help-seeking behaviors, and a higher treatment gap in LMICs compared with developed countries [47]. For example, even if the prevalence of mental distress is high among university students in LMICs, the majority of them do not receive professional mental health care [48, 49].

Most studies conducted in Ethiopian universities are primarily focused on assessing the prevalence of mental distress rather than looking at the possible barriers to receiving professional help. Besides of this, there is a literature gap with regard to identifying the perceived need for mental health service and demographic factors associated with barriers to receive mental health care among university students in Ethiopia. Therefore, this current study is aimed to assess the prevalence of mental distress, perceived need, and identify common barriers to receive professional mental health care among undergraduate students in Wolaita Sodo University (WSU). Our study also investigated the demographic predictors of the barriers to mental health care. The current study findings will fill the literature gap on professional help-seeking intention, predictors, and barriers to receive mental health service among undergraduate students in LMICs. Besides this, our findings inform to adapt and study feasibility of psychological intervention for students with mental distress within Ethiopian universities with potential implication for other LMICs universities.

Methods

Study setting

The current study is conducted at WSU, a public university located in the Sodo town of Wolaita Sodo Zone, Southern Nations, Nationalities, and Peoples' Regional State (SNNPR) of Ethiopia. Sodo town is located 320 km south of Addis Ababa. WSU was established in 2007 as a result of the rapid expansion of higher education in Ethiopia. The university began with an intake of 801 students (609 males and 192 females) in four faculties and sixteen departments. Currently, the university runs undergraduate and graduate programs in six colleges and five schools. During the study period, a total of 12, 028 (7321males and 4707 females) undergraduate students were registered. These students qualify to join the university by taking the Grade 12 national entrance examination prepared by Ministry of Education. WSU has two counseling offices and two health centers. There are three psychologists in the counseling offices that provide counseling services for students with mental health problems. The two health care centers are the Ottona hospital and the students' clinic, both of which provide health care services. Ottona hospital is a referral hospital that provides health care services for the community and for the students with severe mental health problem by providing medication.

Study design, objectives and study period

An institution-based cross-sectional survey was conducted among WSU undergraduate students from December 2017 to January 2018. The objective was to estimate the prevalence of mental health problems, perceived need, and to identify barriers and demographic predictors to receive professional mental health care.

Sample size

A sample size of 1135 was estimated with an assumed prevalence rate of mental distress 40.9% [32], precision of ±3, 95% confidence interval, and 10% non-response considered. For the other two objectives (perceived need and barriers to receive mental health care) separate sample sizes were not estimated. All the participants who were screened positive for mental distress (> 7) were used as the denominator to estimate the proportion of students having a perceived need for professional mental health care. Those participants who had mental distress symptoms and who did not receive mental health

services from professionals in the past 3 months were eligible to be part of the study.

Sampling and procedures

A stratified multi-stage sampling technique was used to recruit study participants. A list of students' names from all first to fifth years was obtained from the registrar office of WSU. The first participant's name was selected randomly; the remaining participants were selected using systematic random sampling. To accomplish, the first step was stratifying undergraduate students by their schools/colleges (six colleges and five schools). For the second step, the total sample size was allocated into the 11 strata using probability proportional to the number of the students as a measure of size. The third step was selecting participants from each school and college based on the proportion of the size of each department. The fourth step was selecting participants from first to fifth-years based on the proportion to each year. Then, the final step was randomly selecting the first participant and systematically selecting the rest participants from each level and section of the study year.

Measurements

The survey questionnaire consisted of four parts: Demographic Characteristic Questionnaire: used to document variables including participants' sex, age, religion, ethnicity, marital status, current place of living, area where they grew up, level of the study years, family history of mental illness, and substance use.

Self-Reported Questionnaire (SRQ-20): It is a screening tool for mental distress developed by WHO [50]. SRQ-20 is a self-report instrument with 20 binary responses (yes/no) questions. It has the potential of detecting cases and non-cases with sensitivity ranging from 63 to 90 and specificity ranging from 44 to 95 [51]. WHO recommends SRQ-20 as a reliable and valid instrument to detect general Common Mental Disorders [51]. It was developed specifically for use in LMICs [50]. SRQ-20 has been previously translated into Amharic language in Ethiopia, locally validated [52, 53], and used in different community [54–56] and institution-based surveys [24, 25, 32, 57] with cut-off points ≥ 4 [57], ≥ 7 [25], ≥ 8 [32] and ≥ 11 [24]. SRQ-20 has good psychometric properties (i.e. sensitivity 86% and specificity 84%) for detecting individuals with mental distress in the Ethiopian population with an optimal cut-off point at ≥8 [58]. To identify cases in the current study, a cut-off point of > 7 was used based on a previous validation study of SRQ-20 in Ethiopia that resulted in good sensitivity and specificity using a cut-off point of 8 [58]. The pilot data collected from 38 undergraduate students in a similar population but in a different setting to the current study showed that the internal consistency of SRQ-20 was 0.77.

The Perceived Need for Professional Mental Health Care Questionnaire: Used to assess the perceived need for professional mental health services in the past 3 months. It has been used in the previous studies [59, 60]. The question is phrased as follows: 'Was there a time when you thought you should see a doctor, counselor or other health professionals for your mental distress, but you did not go in the past three months?' with the response options of Yes/No. "Yes" response implies the perceived need for mental health care but not received in the past 3 months, whereas "No" response implies no need for mental health care for mental distress. Therefore, the perceived need for professional mental health care in this study implies the number of students who reported "Yes" option.

Barriers to Access to Care Evaluation (BACE-III): BACE was originally developed to identify barriers to receive professional mental health service for people with mental health problems [61]. It has 30 items to be completed by the participant (self-complete measure). This instrument has good psychometric properties (i.e. validity, reliability, and acceptability) [61]. BACE-III has three dimensions of potential barriers of stigma (12 items), attitudinal (10 items) and instrumental (8 items) related. This instrument asks about a range of issues that have ever stopped, delayed or discouraged an individual from receiving professional care for a mental health problem in the past 3 months. The response scale ranges from 0 (not at all) to 3 (a lot); the higher score indicating a greater barrier. Five of the thirty items contain a fifth option: "Not applicable". Findings for each barrier are presented in three ways: mean score for the item, barrier to any degree (the percentage of answering 1, 2 or 3) or major barrier (the percentage of answering 3) based on BACE-III manual for researchers.

For the current study, BACE-III was translated into the Amharic language by two Amharic language experts whose first language is Amharic and their second language is English. One expert who knows the subject matter translated the instrument based on the BACE-III translation guide. The masked back-translation was made by two English language experts and one mental health expert. The research team compared the back-translated instrument with the original version of BACE-III and agreed upon the consistency of the translation. The translated BACE-III was piloted on 40 undergraduate students in a similar population but in a different area of the current study setting. Its internal consistency was 0.85.

After the pilot study, the authors examined the applicability of each question in the university set-up and noticed that item number 27 and 28 need some modifications. Discussion was made with a mental health expert who has experience of adapting mental

health instruments. Then, question number 27 which says 'difficulty taking time off work' was modified as 'difficulty taking time off education' and question number 28 which says 'concern about what people at work might think, say or do', was modified as 'concern about what students might think, say or do'. The final version of the instrument was administered to students who scored > 7 on the SRQ-20 and who had a need (those who answered "Yes") to receive professional mental care in the past 3 months of the study period. The internal consistency of the overall BACE-III scale after the revision was 0.85, whereas for stigma sub-scale = 0.83; attitudinal sub-scale = 0.67 and instrumental sub-scale = 0.60. Those participants who answered "No" for the perceived need for mental health care measuring questionnaire were asked 'In the past three months, did you receive help from a psychologist, doctors, friends, family, religious leaders or traditional healers?' by skipping the BACE-III questionnaire. See supplementary file 1.

Training of data collectors and data collection procedures

Classroom representatives served as data collectors. A half day training was given by the principal investigator to data collectors about the aim of the research, the contents of data collection tools, how to approach participants, ethical issues, and responsibility of controlling missing data. The classroom representatives both males and females were contacted by the researcher through the help of their department heads, because they had cell phone numbers of each classroom representative. Then, with the assistance of the classroom representatives, the student participants came to the selected lecture halls and classrooms and the data collectors explained the aim of the study. Finally, after verbal agreement was received, the data collectors started to collect the data by explaining the instructions of all questionnaires with the close supervision of the principal investigator. To protect the confidentiality of the participants, personal identifiers were not included in the questionnaires; instead, a code was applied.

The data collection was carried out before the students' final examination to control for an inflation of the prevalence of mental distress. Those who scored > 7 on SRQ-20 were asked to answer the questions about the perceived need for professional mental health care and then answer questions in the BACE-III questionnaire. Participants who answered "No" the question about the perceived need for professional mental health care skipped the BACE-III and answered why they did not need mental health treatment in the past 3 months. Finally, after the participants completed the self-administered questionnaires, the data collectors immediately checked the existence of incomplete and missed information before the participants left the room.

Data analysis

Data cleaning and cross-checking were done before analysis using Statistical Packages for the Social Sciences (SPSS version 20). Descriptive statistical measures (i.e. percentage, frequency, mean, and standard deviation) were employed to summarize demographic characteristics of the participants and to identify barriers to mental health care services. Pearson chi-square test was used to examine the association between demographic variables with mental health care seeking intention and with the five most commonly reported barriers to receive mental health services. Furthermore, multiple linear regression was also used to model the association between demographic variables with a mean score of BACE-III subscales. Univariate regression analysis was used to identify potential candidate variables for multivariable linear regression with a p-value of < 0.2 by referring previous published articles [62, 63]. Then, further analysis was carried out using multivariable linear regression. The result was reported as being statistically significant whenever the p-value is less than 0.05.

Ethical considerations

Ethical clearance for the conduct of the study was obtained from the Institutional Review Board (IRB) of Addis Ababa University College of Health Sciences. Information sheet containing details of the research and rights of the participants was attached to the questionnaire. Oral informed consent was obtained from the participants after we explained to them the purpose of the study, the participation was voluntary, and personal identifiers were not included in the questionnaires. Finally, the obtained data were kept anonymous and confidential during all stages of the research.

Results

Demographic characteristics

A total of 980 undergraduate students completed the screening phase survey from the sample of 1135 students approached, yielding 86.34% response rate. One third (34.6%) of the participants had scored > 7 on SRQ-20. The majority (60.5%) were male. The age of the participants ranged from 17 to 38 years with a mean age of 21.53 years (SD = 2.42). The participants were from diverse ethnic groups, the majority were from Amhara (34.6%) and Wolaita (20.9%) ethnic groups. Regarding marital status, 82.8% were single and 95.3% were living in the campus. Over half (54.7%) were from urban backgrounds. First-year, second-year, and third-year undergraduate students took 27.7, 26.6, and 25.9% of the sample, respectively (Table 1).

Table 1 Demographic characteristics of the study sample

Variables	Total Sample (*n*) % N (980)	Screened positive for mental distress (n) % N (339)	Participants with mental distress who have not received formal Mental Care % N (239)
Sex			
Male	593 (60.5)	176 (51.9)	127 (53.1)
Female	387 (39.5)	163 (48.1)	112 (46.9)
Age			
Mean	21.53	21.21	21.22
SD	2.42	1.95	1.82
Minimum	17	18	18
Maximum	38	30	28
Religion			
Christian Orthodox	543 (55.4)	241 (71.1)	164 (68.6)
Christian Protestant	330 (33.7)	50 (17.7)	46 (19.2)
Islam	80 (8.2)	30 (8.8)	22 (9.2)
Christian Catholic	8 (0.8)	2 (0.6)	2 (0.8)
No religion	8 (0.8)	4 (1.2)	3 (1.3)
Others	11 (1.1)	2 (0.6)	2 (0.8)
Ethnicity			
Amhara	339 (34.6)	164 (48.4)	110 (46.0)
Oromo	155 (15.8)	58 (17.1)	41 (17.2)
Wolaita	205 (20.9)	44 (13)	35 (14.6)
Gurage	80 (8.2)	24 (7.1)	15 (6.3)
Tigre	24 (2.4)	11 (3.2)	8 (3.3)
Sidama	58 (5.9)	9 (2.7)	7 (2.9)
Hadiya	32 (3.3)	8 (2.4)	6 (2.5)
Gamogofa	30 (3.1)	8 (2.4)	6 (2.5)
Others	57 (5.7)	13 (3.9)	11 (4.6)
Marital status			
Single	811 (82.8)	268 (79.1)	194 (81.2)
In a relation	114 (11.6)	50 (14.7)	31 (13.0)
Married but not living together	35 (3.6)	11 (3.2)	9 (3.8)
Divorced	14 (1.4)	7 (2.1)	3 (1.3)
Married and living together	6 (0.6)	3 (0.9)	2 (0.2)
Residence			
In Campus	934 (95.3)	320 (94.4)	223 (93.3)
Off Campus	20 (2)	8 (2.4)	7 (2.9)
Both	26 (2.7)	11 (3.2)	9 (3.8)
Area of growing			
Urban	536 (54.7)	176 (51.9)	127 (53.1)
Rural	444 (45.3)	163 (48.1)	112 (46.9)
Level of study year			
First-year	271 (27.7)	117 (34.5)	81 (33.9)
Second-year	261 (26.6)	85 (25.1)	58 (24.3)
Third-year	254 (25.9)	84 (24.8	67 (28.0)
Fourth-year	96 (9.8)	28 (8.3)	18 (7.5)

Table 1 Demographic characteristics of the study sample *(Continued)*

Variables	Total Sample (*n*) % N (980)	Screened positive for mental distress (n) % N (339)	Participants with mental distress who have not received formal Mental Care % N (239)
Fifth-year	98 (10.0)	25 (7.4)	15 (6.3)
Family history of mental illness			
Yes	67 (6.8)	34 (10.0)	22 (9.2)
No	913 (93.2)	305 (90.0)	217 (90.8)
Substance use			
Yes	58 (5.9)	39 (11.5)	31 (13.0)
No	922 (94.1)	300 (88.5)	208 (87)

Mental distress

The prevalence of mental distress was 34.6%, indicated by 339 participants with SRQ-20 scored higher than 7. It was slightly higher (51.9%) among male students. The item-based response of the study participants to the SRQ-20 is summarized in Fig. 1. The top three frequently reported symptoms were: loss of interest in things (37.60%), being tired (36.90), and thought of ending one's life (36.80%). The least reported symptom was handshaking/hand trembling (19.7%).

Perceived need for professional mental health care

Of 339 participants with elevated symptoms of mental distress, 70.5% ($n = 239$) reported a perceived need for professional mental health care in the past 3 months. The remaining 29.5% did not report a need for professional mental health treatment, because they have received the service from informal sources (25.5% from religious leaders, friends, family, and traditional healers) and formal sources (4% from doctors and psychologists). There was no significant gender difference in seeking mental health service, $\chi 2\ (1) = 0.48$, $p = 0.49$. Likewise, there were no significant differences among the remaining demographic variables in those seeking mental health services (Table 2).

Barriers to receive professional mental health care for mental distress

Of the 339 participants who screened positive for mental distress, 239 (127 male and 112 female) had not received mental health services in the past 3 months, because of the barriers to receive the treatment, although they desired mental health care as indicated in Table 3. This table shows mean scores of an individual item, standard

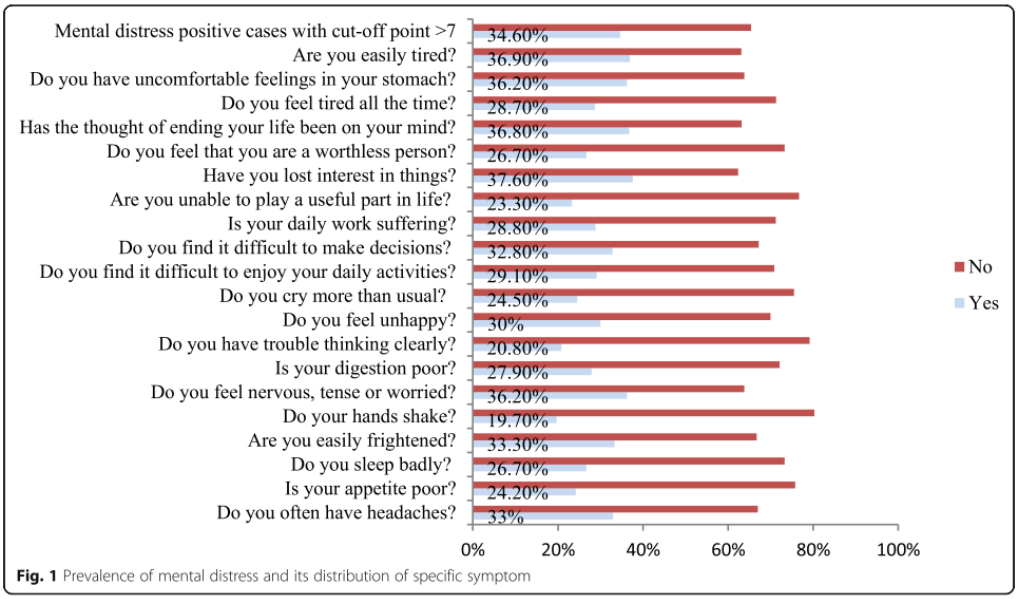

Fig. 1 Prevalence of mental distress and its distribution of specific symptom

Table 2 The association between demographic variables and perceived need for professional mental health care

Variables	Need for professional mental health care		χ 2	*P*-value
	Yes (*n*)	No (*n*)		
Sex				
Female	112	51	0.48	0.49
Male	127	49		
Religion				
Orthodox	164	77	3.02	0.39
Protestant	46	14		
Muslim	22	8		
Others	7	1		
Ethnicity				
Amhara	111	53	3.77	0.88
Oromo	41	17		
Wolaita	35	9		
Gurage	15	9		
Hadiya	6	2		
Tigre	8	3		
Sidama	7	2		
Gamogofa	6	2		
Others	10	3		
Marital status				
Single	193	75	6.83	0.15
In a relationship	31	19		
Married but no living together	2	1		
Divorced	10	1		
Married and living together	3	4		
Residence				
In campus	223	97	1.89	0.39
Off campus	7	1		
Both	9	2		
Area of growing				
Rural	112	51	0.48	0.49
Urban	127	49		
Level of study year				
First-year	81	36	5.61	0.23
Second-year	58	27		
Third-year	67	17		
Fourth-year	18	10		
Fifth-year	15	10		
Family history of mental illness				
No	217	88	0.61	0.44
Yes	22	12		
Substance use				
No	208	92	1.71	0.19
Yes	31	8		

deviation, percentage to any degree, and major barriers to receive mental health care. There were top five barriers to receiving mental health care the reported percentage was greater than 60% to any degree (sum of responses of a little, quite a lot, and a lot).

The first barrier to seeking mental health care was 'thinking the problem would get better by itself' reported by 74.4% to any degree and 37% thought that it would act as a major barrier to receive mental health services. The second was 'being unsure where to go to get professional care' which accounted for 71.6% to any degree and 21% reported as a major barrier. The third was 'wanting to solve the problem on their own', whereby 71% of the participants reported this as a barrier to any degree and 28% thought that it would act as a major barrier to receiving mental health care. The fourth was 'denying a mental health problem', where 67.4% of the participants reported this as a barrier to any degree and 38% reported it as a major barrier. The fifth was 'preferring to get alternative forms of care' reported as any degree of the barrier by 67%, while 34% of the participants reported it as a major barrier to receiving mental health service. Of all the demographic variables, only a family history of mental illness had a significant association, X^2 [3] = 14.48 = p = 0.01 with 'denying mental health problem' of the top five barriers. See supplementary file 2.

Of the top five barriers, the top four were attitudinal related barriers to receiving professional mental health services. The fifth, 'being unsure of where to get professional care' was an instrumental-related sub-scale of BACE-III. As a result of, the mean score of attitudinal related barriers sub-scale of BACE-III (M = 1.26, SD = 0.68) was the highest when compared with instrumental related barriers sub-scale (M = 0.78, SD = 0.43) and stigma related barriers sub-scale (M = 0.61, SD = 0.65) of BACE-III.

Predictors of attitudinal related barriers to receive professional mental health care

In univariate regression analysis (Table 4), fourth-year students perceived significantly more attitudinal related barriers (β = 0.27; 95%CI = 0.24, 1.16; p = 0.003) than the fifth-year students. Multivariable analysis also showed that only fourth-year students perceived significantly more attitudinal related barriers (β = 0.27; 95% CI = 0.21, 1.14; p = 0.01) than the fifth-year students.

Predictors of instrumental related barriers to receive professional mental health care

In univariate regression analysis (Table 5), female students perceived significantly fewer instrumental related barriers (β = −.15; 95%CI = −.24, −.02; p = 0.02) than male students. Students from rural background perceived significantly more instrumental related barriers

(β = 0.18; 95%CI = 0.04, 0.26; $p = 0.01$) than students from urban background. Fourth-year students perceived significantly more instrumental related barriers (β = 0.28; 95%CI = 0.17, 0.76; $p = 0.002$) than the fifth-year students. Students who reported a family history of mental illness perceived significantly more instrumental related barriers (β = 0.16; 95%CI = 0.05, 0.43; p = 0.01) than students who reported no family history of mental illness. Students who reported substance use perceived significantly more instrumental related barriers (β = 0.15; 95%CI = 0.03, 0.36; $p = 0.02$) than students who reported no substance use. A 1 year increase in age was associated with 0.19 unit increased in instrumental related barriers to receiving mental health services (β = 0.19; 95%CI = 0.02, 0.07; $p = 0.004$). In multivariable analysis, students from rural background perceived significantly more instrumental related barriers (β = 0.16; 95%CI = 0.03, 0.25; $p = 0.01$) than students from urban background. Besides this, second-year (β = 0.27; 95%CI = 0.02, 0.52; $p = 0.03$) and fourth-year students (β = 0.29; 95%CI = 0.19, 0.77; $p = 0.001$) perceived significantly more instrumental related barriers than the fifth-year students.

Predictors of stigma related barriers to receive professional mental health care

Univariate regression analysis showed that students from rural background perceived significantly more stigma related barriers (β = 0.13; 95%CI = 0.00, 0.33; $p = 0.05$) than students from urban background. Students who reported a history of mental illness in the family perceived significantly more stigma related barriers (β = 0.13; 95%CI = 0.01, 0.57; p = 0.05) than students who reported no family history of mental illness. Students who reported substance use perceived significantly more stigma related barriers (β = 0.13; 95%CI = .00, 0.49; p = 0.05) than students who reported no substance use. A 1 year increase in age was associated 0.17 unit increased in stigma-related barriers to mental health services (β = 0.17; 95%CI = 0.02, 0.10; $p = 0.01$). In multivariable analysis, only fourth-year students perceived significantly more stigma related barriers (β = 0.24; 95%CI = 0.14, 1.01; p = 0.01) than the fifth-year students (Table 6).

Discussion

In this study, there is high prevalence of mental distress and perceived need for professional mental health care services among university students. The top five frequently reported barriers to receive professional mental health service were: thinking the problem would get better by itself, being unsure where to go to get professional care, wanting to solve the problem by oneself, denying a mental health problem, and preferring to get alternative forms of care. Having a rural background, being a second and fourth-year student, and a family history of mental illness were significantly associated with barriers to receive professional mental health service.

The prevalence of mental distress which is reported in the present study is higher than what has been reported in the meta-analysis of the general population studies in Ethiopia [14]. Perhaps our finding is not surprising, because university students are more likely than the general population to be exposed to mental stress [21]. The possible difference between individual studies reviewed in the meta-analysis [14] and the present study could be partly attributed to the discrepancy in data collection instrument with cut-off points used, age group, and setting. The data collection tools used in the most individual article within the meta-analysis study were ICD-10, PHQ-9, EPDS, K10, HADS etc. with different cut-off points, but in our study we have used SRQ-20 that might be one cause for the discrepancy. The other was a difference in age group and setting, where young person experience higher mental distress compared with adults in the general population.

The current prevalence of mental distress is higher than that reported in previous studies conducted among university students [24, 64]. One possible reason for the discrepancy is the difference in the cut-off values used to define mental illness [24, 64]. The other explanation for the difference is other studies did not use locally validated instrument [64]. On the other hand, the present finding is lower than what was reported in previous studies in Ethiopian universities [35, 65]. The first possible justification for the difference might be data collection tool being used to screen mental distress [35, 65]. The second possible reason for the difference could be the timing of the data collection, where our data collected prior to the approaching final examinations. The present finding is comparable with a study report conducted in Jima University [66]. This might be resulted from similarity of the data collection tool and the cut-off points used to define mental distress.

The high prevalence of perceived need for professional mental health services in the current study suggests that most students with mental distress in Wolaita Sodo University remain untreated. This may not be surprising, because most universities in LMICs are ill-equipped to provide services for students' mental health issues [47]. Previous study also reported only a few university students receive mental health services for their mental health problems as a result of lack of appropriate services [67]. Our finding is higher than previously reported in the general population of Ethiopia. For instance, a meta-analysis study reported that the pooled prevalence of the help-seeking intention of people with depression in Ethiopia is 42% [17], which is much lower than the current finding. The possible explanations for the

Table 3 Barriers to receiving professional mental health care among students with mental distress who have not received mental care in the past three months ($n = 239$)

Barriers to Mental Health Care	Mental Distress who did not receive professional mental health treatment (N = 239)		Total (N)	Item Mean and (SD)
	Barrier to any degree % (*n*)	Major barrier % (*n*)		
Stigma-related barriers				
Concern about what my family might think, say, do or feel	48.1 (115)	18.4 (44)	239	0.98 (1.18)
Concern that I might be seen as weak for having a mental health problem	38.9 (93)	14.2 (34)	239	0.76 (1.10)
Feeling embarrassed or ashamed	29.8 (71)	10.9 (26)	239	0.58 (1.01)
Concern that I might be seen as 'crazy'	31.9 (76)	10.5 (25)	239	0.61 (1.02)
Not wanting a mental health problem to be on my medical records	26.0 (62)	8.4 (20)	239	0.50 (0.95)
Concern that people might not take me seriously if they found out I was having professional care	28.0 (67)	7.1 (17)	239	0.51 (0.93)
Concern that people I know might find out	28.4 (68)	6.7 (16)	239	0.47 (0.87)
Concern about what my friends might think, say or do	33.5 (80)	6.7 (16)	239	0.56 (0.92)
Concern about what students might think, say or do	31.4 (75)	6.3 (15)	239	0.53 (0.90)
Attitudinal-related barriers				
Thinking I did not have a problem	**67.4 (161)**	**38.1 (91)**	**239**	**1.59 (1.29)**
Thinking the problem would get better by itself	**74.4 (178)**	**36.8 (88)**	**239**	**1.65 (1.22)**
Preferring to get alternative forms of care	**66.5 (159)**	**34.3 (82)**	**239**	**1.51 (1.27)**
Wanting to solve the problem on my own	**71.1 (170)**	**28.0 (67)**	**239**	**1.50 (1.18)**
Preferring to get help from family or friends	58.6 (140)	22.2 (53)	239	1.20 (1.20)
Dislike of talking about my feelings, emotions or thoughts	38.0 (91)	9.6 (23)	239	0.69 (1.02)
Concerns about the treatments available (e.g. medication side effects)	36.8 (88)	9.6 (23)	239	0.65 (1.01)
Thinking that professional care probably would not help	30.9 (74)	7.5 (18)	239	0.54 (0.93)
Fear of being put in hospital against my will	21.4 (51)	7.1 (17)	239	0.41 (0.89)
Having had previous bad experiences with professional care for mental health	16.7 (40)	4.6 (11)	239	0.30 (0.76)
Instrumental-related barriers				
Not being able to afford the financial costs involved	56.0 (134)	25.5 (61)	239	1.23 (1.25)
Having no one who could help me get professional care	59.8 (143)	24.7 (59)	239	1.26 (1.22)
Being unsure where to go to get professional care	**71.6 (171)**	**21.0 (51)**	**239**	**1.36 (1.11)**
Difficulty taking time off education	55.2 (132)	17.6 (42)	239	1.10 (1.16)
Problems with transport or travelling to appointments	44.4 (106)	17.6 (42)	239	0.92 (1.18)
Being too unwell to ask for help	51.9 (124)	14.6 (35)	239	0.96 (1.11)
Professionals from my own ethnic or cultural group not being available	26.4 (63)	6.7 (16)	239	0.47 (0.89)

Note: Question number 5, 14, 24, and 29 in the BACE-III were not included in this table, because more than 97% of the participants responded "Not applicable" option for each item. Barriers reported percentage greater than 60% to any degree were indicated in bold color

difference could be a difference in mental health literacy, study population and the data collection instruments being used. Moreover, our study supports the previous web-based survey reporting that 37 to 84% of university students screened positive to mental distress did not receive any professional mental health service [34]. The similarity of the result may be due to using similar data collection tool and similar age group of participants.

Among the top five reported barriers to receive professional mental health service by the students who recognized a need for care, the first was thinking mental distress would get better by itself. This indicates that students perceive mental distress would get better without receiving any treatment, which may be associated with considering mental health problems as less serious so they are reluctant to use available mental health

Table 4 Predictors of attitudinal related barriers to receiving professional mental health care in univariate and multivariable linear regression ($n = 239$)

Variables	Attitudinal related barriers					
	Univariate			Multivariable		
	Beta	95% CI	*P*-value	Beta	95% CI	*P*-value
Age	.09	−.02, .08	.18	.01	−.05, .06	.91
Level of study years						
First year	.01	−.36, .38	.97	01	−.41, .42	.97
Second year	.03	−.33, .43	.80	.03	−.35, .46	.81
Third Year	.11	−.20, .54	.37	.12	−.21, .57	.37
Fourth Year	.27	.24, 1.16	.003	.26	.21, 1.14	.004
Fifth Year (Ref.)	–	.80, 1.48	< 0.01			
Family mental illness history						
No (Ref.)	–	1.14, 1.32	< 0.01			
Yes	.12	−.01, .59	.06	.11	−.04, .56	.09
R2				0.08		

Note. Reference category results for multivariable were: β = 1.05; 95% CI: −.29, 2.40; *P* = 0.12. Ref. = Reference category for univariate regression analysis and *CI* Confidence Interval for β

Table 5 Predictors of instrumental related barriers to receiving professional mental health care in univariate and multivariable linear regression ($n = 239$)

Variables	Instrumental related barriers					
	Univariate			Multivariable		
	Beta	95% CI	P-value	Beta	95% CI	*P*-value
Sex						
Male (Ref.)	–	.77, .92	< 0.01			
Female	−.15	−.24, −.02	.02	−.10	−.20, .02	.12
Age	.19	.02, .07	.004	.13	−.01, .07	.09
Area of growing						
Urban (Ref.)		.64, .78	< 0.01		.	
Rural	.18	.04, .26	.01	.16	.03, .25	.01
Level of study years						
First year	.11	−.13, .34	.39	.23	−.05, .47	.11
Second year	.14	−.10, .39	.25	.27	.02, .52	.03
Third Year	.14	−.10, .37	.27	.23	−.02, .47	.07
Fourth Year	.28	.17, .76	.002	.29	.19, .77	.001
Fifth Year (Ref.)		.42, .86	< 0.01			
Family mental illness history						
No (Ref.)		.70, .82	< 0.01			
Yes	.16	.05, .43	.01	.09	−.05, .32	.15
Substance use						
No (Ref.)		.70, .82	< 0.01			
Yes	.15	.03, .36	.02	.09	−.05, .28	.17
R2				0.14		

Note. Reference category for multivariable: β = −.16; 95% CI = −1.02, 0.70 $p = .72$. Ref. refers to reference category for univariate regression analysis and *CI* Confidence Interval for β

Table 6 Predictors of stigma related barriers to receiving professional mental health care in univariate and multivariable linear regression ($n = 239$)

Variables	Stigma related barriers					
	Univariate			Multivariable		
	Beta	95% CI	P-value	Beta	95% CI	*P*-value
Age	.17	.01, .10	.01	.10	−.02, .09	.19
Area of growing						
Urban (Ref.)		.42, .65	< 0.01			
Rural	.13	.00, .33	.05	.12	−.02, .32	.08
Level of study years						
First year	.02	−.32, .37	.89	.11	−.25, .54	.47
Second year	−.002	−.36, .36	.99	.08	−.26, .50	.54
Third Year	.13	−.18, .54	.32	.18	−.11, .63	.16
Fourth Year	.24	.14, 1.01	.01	.24	.14, 1.02	.01
Fifth Year (Ref.)	–	.19, .83	< 0.01			
Family mental illness history						
No (Ref.)	–	.50, .67	< 0.01			
Yes	.13	.01, .57	.05	.09	−.09, −.48	.19
Substance use						
No (Ref.)		.49, .67	< 0.01			
Yes	.13	.00, .49	.05	.07	−.12, .39	.31
R2				0.10		

Note. Reference category for multivariable: β: −.45; 95% CI = −1.72 to .83; p = 0.49. Ref. refers to reference category for univariate regression analysis and *CI* Confidence Interval for β

services [68] and it may also be associated with having poor mental health literacy [69]. The current finding supports a prior study reporting that the majority of college students believed that time by itself would solve their mental health problem [59].

Lack of information where to go to get professional care was reported as the second barrier to receiving mental health service in the University. However, WSU has two counseling offices and a teaching referral hospital that aim to provide mental health services for students with mental health problems. This information gap is probably caused by a lack of awareness creation of these services by the mental health service providers. Our finding is supported by prior studies, where the majority of university students had no information about the availability of mental health service in their university [70, 71].

Wanting to solve mental health problems by oneself is reported as the third common barrier to receive mental health service in the present study. This suggests that most students may not want to share their mental health problems with professionals preferring to handle the problem by themselves. This is possibly due to perceiving their problem as not serious or transitory, being skeptical about the effectiveness of professional mental

health service, fear of stigma, and privacy issue [34]. As a result, they might prefer to manage their mental health problem alone perhaps utilizing both positive and negative strategies such as problem-solving [72], substance uses, and isolation [73] as examples. The present finding supports past studies reporting a major barrier to receiving formal mental health service among university students with mild to moderate depression and anxiety is preferring to self-medicate [74, 75].

The fourth barrier identified in the present study is denying mental health problems. Students may not want to recognize their mental health problems due to lack of knowledge about mental illness [69] or they may deny their mental health problem as a coping strategy by rejecting reality and not taking appropriate action to treat their problem [73]. Our finding support a prior study finding reporting that the majority of university students deny mental health problems which hindered them from receiving mental health care [37]. Furthermore, the present study interestingly showed that a family history of mental illness significantly associated with a student denying mental distress. This could be due to students had negative experiences by being with individual with mental illness previously so that they could deny their illness as a coping mechanism [45].

The fifth commonly reported barrier for using mental health service is preferring to get mental health service from informal sources. This suggests that majority of the students receive mental health help from friends, family, relatives, religious leaders, and traditional healers [35], which is also common practice in the general population of Ethiopia [76]. The present finding is also supported by previous studies, where informal sources of mental health care reported by college students was cited as a reason for not receiving mental health services at their university [69, 77].

Interestingly, the current study found that fourth-year students with mental distress are more likely than fifth-year students to report attitudinal, instrumental, and stigma related treatment barriers. Since, the majority of the fourth- and fifth-years students in the present study were from the engineering department, the possible difference could be resulted from as the level of study year/age increases, students become more stable and have better mental health literacy [78, 79]. In this sense, fourth-year students might encounter more barriers to receiving mental health care compared to fifth-year students. However, our finding contradicts a study finding first-year students are more likely than their third-year and senior students to perceive a greater number of barriers to receiving mental health care [37]. The result difference with the present study possibly due to the difference in the data collection tool, study setting, and sample size in each level of the study year. Caution in the present study, the number of the fourth-year students was small.

Our study also found that students from rural backgrounds are more likely than students from urban backgrounds to face instrumental related barriers to access professional mental health care. This might be because of young person from rural areas may not have a knowledge of mental illnesses so that they may not have sufficient information about the availability of free mental health services in the university and they may not be psychologically open toward professional mental health services [80]. Our finding compare positively with a study conducted in Australia reporting that adolescents from rural areas have more instrumental related challenges for receiving formal mental health care than adolescents from urban areas [81]. Our study also shows that second-year students reported more instrumental-related barriers compared with fifth-year students. This was probably due to the interaction effects of other controlled variables in the adjusted model. This may need further study in the future.

The present study implies that mental distress is prevalent among undergraduate students. Likewise, the need for mental health services is increasing, even though the students are not be able to receive the service provided in the university. This was because of attitudinal, instrumental and stigma-related barriers. Particularly, fourth-year students and students from rural background were more likely to report these barriers compared with fifth-year and students from urban backgrounds, respectively. This indicates to a need for designing practical mental health interventions to treat students' mental distress, to alleviate their psychological suffering and minimize the effect on their academic work, general and social functioning [29]. Therefore, the present findings provide useful information and directions for university mental health service providers to create awareness about mental health problems and their service, the benefits of receiving mental health care, and when and where to seek mental health services by distributing flyers, preparing training, and mental health day. All these together enhance to develop active university-based mental health intervention to reduce the prevalence of mental distress and to satisfy the need for receiving mental health service by minimizing the reported major barriers.

Any research has its own limitations; similarly, the present study is not limitation free. First, data were collected using self-reported questionnaires so that recalling bias may occur for mental distress symptoms that happened in the past 1 month and rating the degree of barriers to mental health care may also difficult to remember. Second, the barriers to the provision of mental health care measuring instrument was not locally

adapted, although it was properly translated and piloted for the present research. Third, a screening tool was used to identify participants positive for mental distress; it would have been better to use a diagnosis tool. Fourth, data collectors were classroom representatives, so that they were in a position to know the participants' response to each item while checking missing on the questionnaires. Fifth, since the participants were recruited from a single public university, it is difficult to generalize the result to all public universities and private colleges that are found in Ethiopia. Finally, students who received treatment from the informal sources should have to complete BACE-III to understand whether they were aware of their needs for professional care or not, but we did not do that.

Further, future research is needed to study barriers to receiving professional mental health care among students with mental distress who do not wish to receive mental health care from professionals as a result of receiving treatment from informal sources. Additionally, the present study has also investigated some demographic predictors of barriers to receive mental health care, but further study is necessary to examine the associations of other variables such as mental health literacy and academic results with barriers to receive mental health services. Despite the limitations mentioned above, the present study has some strengths. First, a large number of students participated in the prevalence study. Second, the study used a locally adapted instrument, SRQ-20. Third, the research contains findings of the prevalence of mental distress, perceived needs, predictors, and barriers to receive professional mental health services together; all this information taken together can serve as input for future feasibility studies of mental health interventions for mental distress among university students.

Conclusions

There is high prevalence of mental distress and perceived need for professional mental health service among undergraduate students at Wolaita Sodo University that identify the need for professional mental health interventions. Mental health providers in the university should make their services accessible to the students and promote the service for better utilization. Besides the interventions, developing preventive mental health education strategies is essential to address the prevalence of mental distress with the creation of conducive environments that promote and sustain positive mental health for every student. Moreover, preparing for the celebration of mental health day in the university can play a role in changing the attitude of students toward mental health care and improving mental health literacy, because out of the five major barriers, four of them were attitudinal related. In this celebration day, creating awareness about the treatment of mental distress like any other physical illness can be emphasized, as well as the benefits of receiving mental health care from professionals, recognizing mental distress in the early stages, and educating students to seek mental health care from professionals in parallel with receiving treatment from alternative sources. Therefore, this paper is a call for action from university administrations, university mental health care providers, and the Ministry of Science and Higher Education for helping undergraduate students with mental distress and to work to minimizing mental health distress on campus.

Supplementary information

Supplementary information accompanies this paper at https://doi.org/10.1186/s12888-020-02602-3.

Additional file 1. Instruments used for data collection.

Additional file 2. The association between demographic variables and common barriers to receive professional mental health care.

Abbreviations

BACE: Barriers to Access to Care Evaluation; LMICs: Low- and Middle- Income Countries; SNNPR: Southern Nations, Nationalities, and Peoples' Region; SRQ: Self-Reported Questionnaire; SPSS: Statistical Packages for Social Sciences; M: Mean; SD: Standard Deviation; WHO: World Health Organization; WSU: Wolaita Sodo University; ICD-10: International Classification of Diseases 10th edition; PHQ-9: Patient Health Questionnaire; EPDS: Edinburgh Postnatal Depression Scale; K10: Kessler Psychological/Mental Distress Scale; HADS: Hospital Anxiety and Depression Scale

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Authors' contributions

AN led to conceiving the study, supervision of data collection, developed study design, data analysis, interpretation of the findings, drafted manuscript and revised the manuscript for submission in consultation with co-authors. MAK contributed to data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, and feedback. GM contributed to data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, and feedback. DW was involved in data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, and feedback. MA led to conceiving the study, data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, and feedback. All co-authors have approved the final version of the manuscript.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

Ethical clearance approval obtained from the Institutional Review Board (IRB) of Addis Ababa University College of Health Sciences. Respondents took part in the study after providing oral consent. Data kept anonymous and

confidential during all stages of the research process. Protocol number: 045/17/Psych. Oral consent was approved by the IRB.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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Publisher's Note

Appendix B: Sub-study-II. Published paper

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ORIGINAL RESEARCH

Explanatory Models for Mental Distress Among University Students in Ethiopia: A Qualitative Study

Assegid Negash[1,2]
Matloob Ahmed[1]
Girmay Medhin[3]
Dawit Wondimagegn[1]
Clare Pain[4]
Mesfin Araya[1]

[1]Department of Psychiatry, Addis Ababa University, Addis Ababa, Ethiopia; [2]Department of Psychology, Wolaita Sodo University, Wolaita Sodo, Ethiopia; [3]Aklilu Lemma Institute of Pathobiology, Addis Ababa University, Addis Ababa, Ethiopia; [4]Department of Psychiatry, University of Toronto, Toronto, Canada

Background: Socio-culturally determined processes account for how individuals give meanings to health, illness, causal attributions, expectations from treatment, and related outcomes. There is limited evidence of explanatory models for mental distress among higher education institutions in Ethiopia. The objective of this study was to explore the explanatory models for mental distress among Wolaita Sodo University.

Methods: The current study used a phenomenological research approach, and we collected data from 21 students. The participants were purposively recruited based on eligibility criteria. Semi-structured interviews were conducted from December 2017 to January 2018 using the Short Explanatory Models Interview. The interviews were audio-recorded, transcribed into the Amharic language and translated into English. Data were analyzed using framework analysis with the assistance of open code software 4.02.

Results: Most students experienced symptoms of being anxious, fatigue, headaches and feelings of hopelessness. They labeled these symptoms like anxiety or stress. The most commonly reported causal explanations were psychosocial factors. Students perceived that their anxiety or stress was severe that mainly affected their mind, which in turn impacted their interactions with others, academic result, emotions and motivation to study. Almost all the students received care from informal sources, although they wanted to receive care from mental health professionals. They managed their mental distress using positive as well as negative coping strategies.

Conclusion: The policy implication of our findings is that mental health interventions in higher education institutions in Ethiopia should take into account the explanatory models of students' psychological distress.

Keywords: explanatory models, mental distress, university students, Ethiopia

Introduction

University students experience mental distress (anxiety and depression) more frequently as compared with the general population.[1] This could in part be attributed to their youth making them more vulnerable to mental distress, academic pressure within university, the stress and strangeness of being away from home for the first time, new peer relationships, and lower social support.[1–3] However, most of these students do not access professional mental health services,[4] perhaps because local explanatory models of suffering prevail and resonate more strongly than formal western biomedical understandings of mental distress.[5,6]

Explanatory models describe the way people with mental distress conceptualize their distress, explanations they give for causes, the modes of expression of distress, how they rate the severity of the problem, its onset, help-seeking behavior, coping

Correspondence: Assegid Negash
Email assegidn@gmail.com

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mechanisms, treatment preference, and the adverse consequences of their distress.[7] Explanatory models of mental distress are not static entities; they are fluid and multilayered that are caused by cultural and live experiences of patients.[8] Students worldwide do not conceptualize mental distress based on biomedical models[8] because of cultural belief and social contexts.[9] Culture is a lens through which people perceive and interpret their world.[10] Therefore, the complex cultural explanations available to students are inevitable form and influence how they understand their psychological distress and its causes.[9,11]

University students find it difficult to recognize symptoms of anxiety as mental distress when compared with depression, which they more readily concede as distressing. They experience symptoms of anxiety as feeling nervous, and feeling of apprehension in their day-to-day activities, as a normal and to be expected.[12] However, they recognize symptoms of depression like sleeping difficulties, aggression, headaches, poor concentration, feeling sad, feeling down, feeling lonely, and hopeless.[12–17] They attribute their distress to grief, parental divorce, interactional difficulties, family history of mental illness, feelings of loneliness and isolation, school work, economic problem, time management, parental expectations, and negative life events.[13,18,19] Altogether, these causal factors can determine the help-seeking behavior of students and the impacts of mental distress.

Previous studies in Ethiopia have found most students are interested in using professional mental health care.[20] However, a number of them do not receive mental health care despite its availability.[21] A significant number of these students receive help from informal sources, such as family, friends, relatives, herbalists, and religious leaders.[22] As well, the coping styles of students can be more or less helpful in managing their distress. An increase in severity of mental distress and lack of access to professional mental health care are associated with adverse effect on students' academic achievement, physical health, emotion, self-esteem, social relationships, cognitive development, and their overall quality of life.[13,16,23–26]

In previous qualitative studies, adolescents used several coping strategies to manage mental distress.[13,17,26] These include: support-seeking from others, social isolation, problem-solving, distraction, changing negative thoughts, acceptance, minimization, redirecting of aggression into a powerless substitute target, emotional discharge, positive appraisal, trying to forget uncomfortable feelings and thoughts, leaving a distressing situation, crying, self-harm behavior, suicide attempts, violence, prayer, listening to music, and substance use.[13,17,26–29] Students also use meditation, telling oneself that everything will be "okay", doing physical exercise, eating more, sleeping less, procrastination, and increased use of internet as a coping mechanisms from mental distress.[30,31]

Despite the existence of a few studies exploring explanatory models for mental distress in the general population, to the best of our knowledge, there is no published study that explored the explanatory models for mental distress among university students in Africa. We believe that taking into account the explanatory models of mental distress among university students in low- and middle-income countries (LMICs) is one pre-condition to sustainably tackle the alarming increase in anxiety and depression.[2] Our study aimed to investigate the explanatory models for mental distress used by undergraduate students at Wolaita Sodo University.

Materials and Methods

Study Setting and Context

We carried out the current study at Wolaita Sodo University, which is one of the public Ethiopian universities located in Wolaita Sodo town of Wolaita zone, Southern Nations, Nationalities and People Regional State. This zone hosts multi-ethnic people that live harmoniously together. The societies in this zone are composed of 200 clans, and similar clans do not marry each other.[32] It is the most densely populated area in Ethiopia. Wolaita zone covers a total area of 4541 km^2 with an estimated population of 1,527,908, of whom 752,668 are males and 775,240 are females.[33] Wolaita zone has 12 districts and three towns that are structured for administrative purpose. Wolaita Sodo is the capital town and economic and political center of the zone located 320 km south of Addis Ababa through Butajira. The main source of livelihood for the majority of city dwellers is trade, whereas agriculture is the main economic source for the rural people. The majority of the people are Evangelical Protestant Christians.

Wolaita Sodo University was established in 2007 G. C. and began its work with an intake of 801 students (609 male and 192 female) in four faculties and sixteen departments. It now has undergraduate and graduate programs in six colleges and five schools with more than 1300 academic staff and 2500 support staff. At the time of data collection, the University had 7321 male and 4707 female

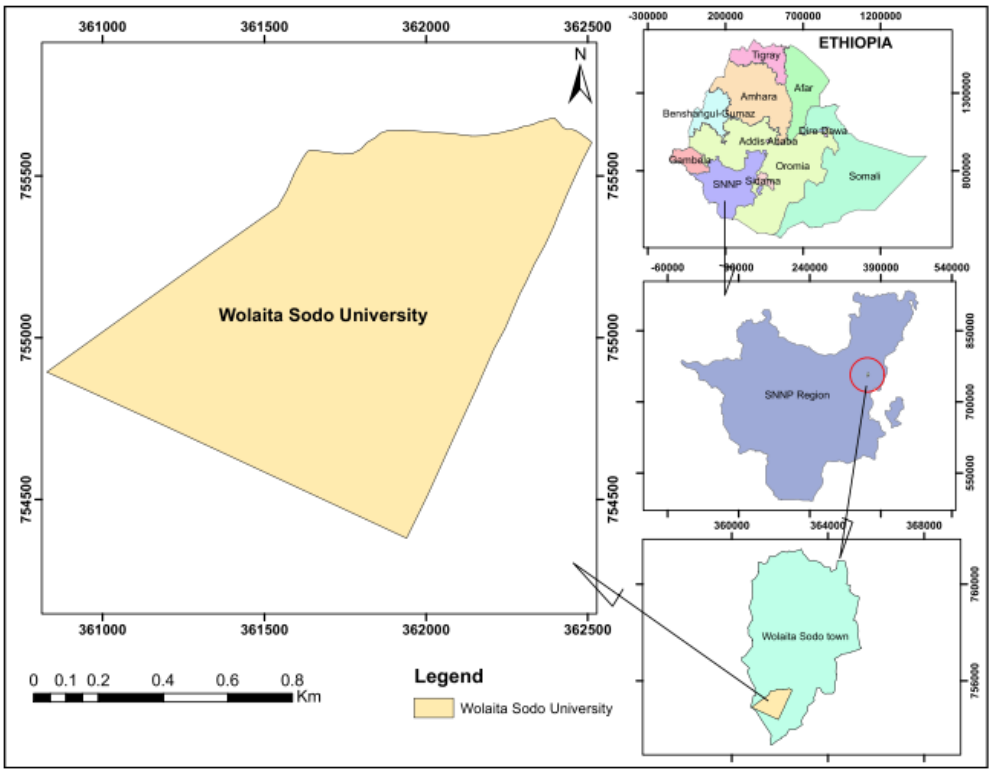

Figure 1 Geographical location of the study area.

perspective of distress using semi-structured open-ended questions.[40,41] SEMI is a simple brief instrument. Furthermore, it consists of non-technical words, easily translated, and any interviewer from any background can administer it after receiving training to use it.[42] According to Azale et al,[43] SEMI was adapted to an Ethiopian context by an expert consensus meeting involving mental health professionals and qualitative researchers. It has seven sections that cover perceived symptoms, conceptualization, perceived causes, perceived severity, impacts, help-seeking behaviors, and coping mechanisms of mental distress. The face-to-face interview was conducted in Amharic language by the principal author in a private and well-ventilated students' counseling room of Wolaita Sodo University. The participants were encouraged to talk openly about their experiences. Probing was done to further elicit and explore ideas of mental distress. The interviews were audio-recorded with consent. The average duration of the 21 interviews was 42 minutes ranging from 21 to 118 minutes.

Sampling Procedures

The study participants were recruited from study one that aimed to assess the prevalence of mental distress among university students,[21] which was conducted from December 2017 to January 2018. In the screening phase of the prevalence study, participants were informed that if they experience any symptoms of mental distress and volunteer to receive professional psychological support, they can write their phone number in the middle page of Self-Reporting Questionnaire (SRQ-20) or they can contact the first author of this article in person. In this process, 29 volunteer students wrote their cell phone number. Of these, 21 (72.4%) students were contacted using their cell phone and following written consent; they voluntarily participated in the interview. The eligibility criteria for

the current study were: being undergraduate student; scoring 8 or more on SRQ-20; willingness to participate in the study; and 18 years or older. The remaining eight students did not answer their phones when they were called. Redundancy of answers to the Short Explanatory Model Interview (SEMI) was an indicator of information saturation, indicating that the maximum number of participants was sufficient for the present qualitative study.[44]

Data Analysis

The audio taped interviews were transcribed into Amharic. The transcribed data were translated into the English language by the first author (AN). Framework analysis was chosen over the other qualitative analysis methods.[45] This analysis method emphasizes how both prior issues and emergent data-driven themes should guide the development of the analytic framework.[46] This approach fits better with the aim of the current study. The predetermined themes in the SEMI are designed to explore the lived experiences of university students with mental distress, and we were open to discovering new emerging theme/s. The other justification for the use of framework analysis is that it is suitable for the analysis of our data generated based on the basic research question, "what are university students' explanatory models for mental distress?" and compatible with the interpretive phenomenological research design.

In the process of using the framework analysis, we followed five sequential steps. These steps were as follows: immersing one's self with the audio-recorded interviews (listening carefully) and transcribing the data by reading again and again (familiarization), identifying a framework, indexing (coding), charting (summarizing), and interpreting the result.[46] Great attention was given during coding of the data because the coded information should capture the meaning of what the participants exactly said. To ensure this, five translated interviews were coded by the first author and another experienced qualitative researcher independently to check inter-rater coding reliability that resulted in almost similar codes. The first author then coded all the remaining interviews alone. Predetermined themes were identified. We have used a free open code version 4.02[47] to facilitate the analysis that enabled us to manage data.

Trustworthiness

Rigor in a qualitative research is highly related to the trustworthiness of the work done in a specific study that includes credibility, dependability, conformability, and transferability.[48] To ensure the credibility of our work the following were done: (a) what we did: the data collection instrument was carefully designed to elicit and generate data; (b) prolonged familiarization with the data was passed through steps of interviewing, transcribing, and translation; and (c) five randomly selected translations were coded by the principal author of this article and one expert who knew the subject matter of the study so as to ensure the accuracy of the codes. The whole process and the tasks performed in the present study were supervised and reviewed by senior co-authors of this study (MA, MK, GM, DW, and CP) to confirm the dependability and conformability of the current study. All the necessary files are available and indicate the transferability of our study findings to other settings.

Results

Information collected from 21 study participants was analyzed, and the key findings were elaborated under seven themes that include: (a) perceived symptoms, (b) conceptualization of mental distress, (c) perceived causes, (d) perceived severity, (e) impacts, (f) help-seeking behaviors and (g) coping mechanisms from mental distress. The participants were composed of five female and sixteen male students with a mean age of 21 years (SD = 1.71; range = 19–25 years). The majority of the participants were Orthodox Christian by religion, from the Amhara ethnic group and single. All participants lived in the University residence. More than half of the participants were from an urban background and were first-year students. The average monthly pocket money received from their family was 501 Ethiopian Birr (ETB) (range = 50–1000 ETB). All students scored positive for mental distress with a mean SRQ-20 score of 13.38 (SD = 2.78; range = 8–20). See Table 1 below.

Perceived Symptoms of Mental Distress

Most participants experienced a mixture of symptoms of anxiety, depression and somatic disorders (Table 2). The most commonly reported complaints were: being anxious, physically fatigued, headache, and feeling of hopeless. The following two illustrative quotes captured these chief complaints.

> Yeah, immediately when I sat in the classroom, I became anxious. I did not know that it was because of anxiety. When I go to church, I cannot stay until the church

Table 1 Demographic Characteristics of the Study Participants with SRQ-20 Score Above the Cut-off Point (n = 21)

Characteristics		Number of Participants (%)
Sex	Male Female	16 (76.2%) 5 (23.8%)
Age	18–25 years	21 (100%)
Religious background	Orthodox Protestant Muslim	16 (76.2%) 3 (14.3%) 2 (9.5%)
Ethnicity	Amhara Oromo Gurage Wolaita Other	10 (47.6%) 6 (28.6%) 1 (4.8%) 1 (4.8%) 3 (14.3%)
Marital status	Single In relationship Divorced	17 (81.0%) 3 (14.3%) 1 (4.8%)
Residency	In campus	21 (100%)
Origin	Rural Urban	9 (42.9%) 12 (57.1%)
University year	I II III V	10 (47.6%) 6 (28.6%) 4 (19.1%) 1 (4.8%)
Monthly pocket money	50–500 Birr 501–1000 Birr	16 (76.2%) 5 (23.8%)
SRQ-20	≥ 8 score	21 (100%)

Table 2 Types and Frequency of Chief Complaints

Types of Symptoms	Number of Participants (%)
Anxiety symptoms	
Being anxious	18 (85.7%)
Being angry	12 (57.1%)
Lack of sleep	11 (52.4%)
Depression symptoms	
Hopelessness	13 (61.9%)
Lack of motivation to read	11 (52.4%)
Lack of concentration	8 (38.1%)
Somatic symptoms	
Physical fatigue	15 (71.4%)
Headache	14 (66.7%)
Gastric pain	6 (28.6%)

ceremony is finished, because of the headache. When I start to read, I become mentally unstable and then, I cannot open my two eyes, but after a few minutes my eyes become open; then after I started to read for a few minutes again my eyes become closed and A letter seems to me B. I feel tired, my body gets feeling of burning, and I also get joint pain … When my gastric get start, I cannot eat food and I feel pain in the stomach. I try to sleep but I cannot sleep due to the serious headache. (A 22-year-old female, in a relationship)

Other students explained that:

> I feel extreme hopelessness. I cannot properly concentrate on my education because of lack of motivation I have. I consider life as meaningless. (A 20-year-old female, single)

> Psychological problem cannot bring any problem, so I said to you, I am very happy to see the end of this world by being a mad person. Previously I had a hope to long live and had fear of death. But now, I know that if I am a mad person, I can survive so that why should I worry? (A 20-year-old male, single)

Conceptualization of Mental Distress

Eight and four participants labeled their problems as anxiety and stress, respectively. The interviewer also asked the participants how long the problem had lasted. Five students were suffering for a year; four students had their problems for three years and another five students reported that their distress started six months ago. Five students reported that their distress started two and four years ago. The remaining two students reported their problem had been with them since elementary school.

> I think this case is related with mental abnormality, specifically it is anxiety. It (my problem) started before six months. (A 25-year-old male, single)

Another student explained that:

> I don't know; it is difficult for me to give a name. But, I guess stress can express it. I started to experience the problem three years ago. (A 22-year-old male, single)

One student named her problem as evil spirit.

> As to me, the name of my problem is (bad spirit); it is the one who enforce me to conflict with my friends without having any reason and it is he (bad spirit) who changes my behavior and mood within a short period of time. When

I was in elementary school, I have been experiencing this problem. (A 22-year-old female, in a relationship)

Causal Factors for Mental Distress

When participants asked about how their psychological distress began, they commonly reported mixed causes related to social causes: such as education difficulties and workload (14/21), economic problems (8/21), family related issues such as conflict and loss (6/21), conflict with friends (3/21), psychological causes such as "thinking too much" (7/21), adjustment to the new environment (life changes) (4/21), mismatch of expectations (4/21), and love-related issue (3/21).

Yeah, the main reasons for my illness are: thinking too much about what to do after graduation, because I am not equipped with the necessary knowledge and skills. Second, as I have told you before, my mother and father were died and the only source of support by this time is only my sister. She is not economically strong enough (hand to mouth) and she is uneducated. So, I always think about how I can change her life. She sacrificed a lot for my life starting from early childhood; she expects more from me after graduation. You know when I face a shortage of money; I do not want to ask her, because I know her economic capacity. The third is difficulty of education. While I am thinking all about these issues, I become anxious and I start to think I am living meaningless life. Internally, I have a lot of unresolved issues. (A 22-year-old male, single)

Perceived Severity of Mental Distress

More than half (12/21) of the participants perceived that their distress was very severe, and they feared that their distress would become yet more severe. The remaining respondents rated their problem as mild (6/21) and moderate (3/21).

It (the distress) is very severe problem, even by this time I dislike learning. Can you believe that in our dorm, there are 32 freshman students and in every night they sing a song; when you inform them to stop disturbing, their response is do you want to control us while we are living more than 30 students together in a single class? When you think all these things, you prefer to leave the campus, but what can you do when your families are poor and live in rural area. (A 20-year-old male, single)

Impacts of Mental Distress

Participants were asked an open-ended question concerning the difficulties that the distress caused them. Most of them replied that their distress adversely affected the interaction with other people (causing conflict with family and friends), reduced academic achievement, caused them to feel sad and angry and reduced their motivation to work (Table 3).

Help-Seeking Behaviors and Intention to Seek Professional Mental Health Treatment

Most of the participants received care from multiple informal sources, such as friends (12/21, advice) and religious leaders (4/21, holy water, fasting, and praying) and family (4/21, advice). Only three students received professional mental healthcare. However, all participants intended to receive mental healthcare from professionals because they were afraid their distress would worsen with time.

Yes, I have received advice from religious leaders. The religious leaders understood that the problem is related with bad spirit and they ordered me not to be far from the church and to drink and sprinkle holy water, fast, and prayer. The religious leaders also advised me not to give-up, worry, anxious. Moreover, my friends advised me not to worry that nothing will happen on me and to go to church regularly. I need help if the problem has a solution, because I have fear. From the things that I fear all the time, I may not be with my friends all the time. One day I may go somewhere alone and at that time, I cannot properly manage myself so that the problem can throw me into abysm or burrow. (A 22-year-old female, in a relationship)

Coping Strategies

Under this theme, there were two sub-themes: positive and maladaptive coping strategies that students used to manage their mental distress. Attending church, discussing with friends, listening to music and watching a film were the most commonly reported positive coping strategies. On the other hand, sleeping for a long time was amongst the most commonly reported negative coping strategy (Table 4).

Based on the qualitative findings, a conceptual framework for explanatory models of mental distress was developed. The model shows a link among the explored constructs. As it can be observed in Figure 2, the psychosocial factors caused students to experience mental distress

Table 3 Consequences of Experiencing Mental Distress

Impacts	Total (%)	Illustrative Quotes
Difficulty of interacting with other people	17 (81.0%)	When I become angry, I hit the door; I fight with my friends. I was fighting with my family both physically (during break time) and via phone. They (family) did not give me the amount of birr I need. You know, farmers prefer to give you half quintal of cereal to 10 birr. Our family assumes that if one student entered to university, every cost of the student is covered by the government. I do not pick their cell-phone when they call me, because personally I do not like to give mercy for other people. (A 20-year-old male, single)
Poor academic result	15 (71.4%)	Yes, I did nothing in terms of my education; I scored low grade. The instructors knew that I did not attentively follow them and they said you are not here, body present mind absent. I sat in the classroom and I went back to the dormitory when the time is out. (A 22-year-old female, in a relationship)
Emotional difficulties	15 (71.4%)	The problem caused me to feel sad, isolated, angry, and thinking life is meaningless. (A 20-year-old female, single)
Lack of motivation to study	11 (52.4%)	… I disliked learning. Then, I decided to withdraw and asked the head of the department. He advised me to continue my education so that I completed that semester in that way. Still I am not motivated to read/careless and lack attention. (A 20-year-old male, single)
Mind, the most affected body part	16 (76.2%)	The problem is totally affected my mind, because always I feel pain in the mind. (A 20-year-old male, single)

Table 4 Coping Strategies to Manage Mental Distress

Coping Strategies	Number of Participants (%)	Illustrative Quotes
Positive coping strategies		
Receiving support from friends	8 (38.1%)	I consulted my friend and he advised me to be planned, be cool, not to worry and use time effectively. (A 20-year-old male, single)
Attending church	10 (47.6%)	When I become anxious, I go to church alone and sit silently, even sometimes I dislike to prayer, because of being tired … (A 22-year-old male, single)
Listening to music and watching a film	5 (23.8%)	I tried not to be anxious by watching a film and listening to music. (A 20-year-old female, single)
Negative coping strategies		
Sleeping for a long time	5 (23.8%)	To forget the problem, I sleep for a long time, even some times until missing my class/education. (A 20-year-old female, single)
Drinking alcohol	2 (9.5%)	I tried to manage the problem by things making me happy. For instance, drinking alcohol. (A 20-year-old male, in a relationship)

that was mainly manifested by psychological and somatic symptoms. This mental distress impacted students' emotions, motivation, relationships with others and educational outcomes. The impact of mental distress was the fear that it could become more severe in future, which led the students to need professional mental health services, despite using coping strategies and receiving support from informal sources to manage the problem.

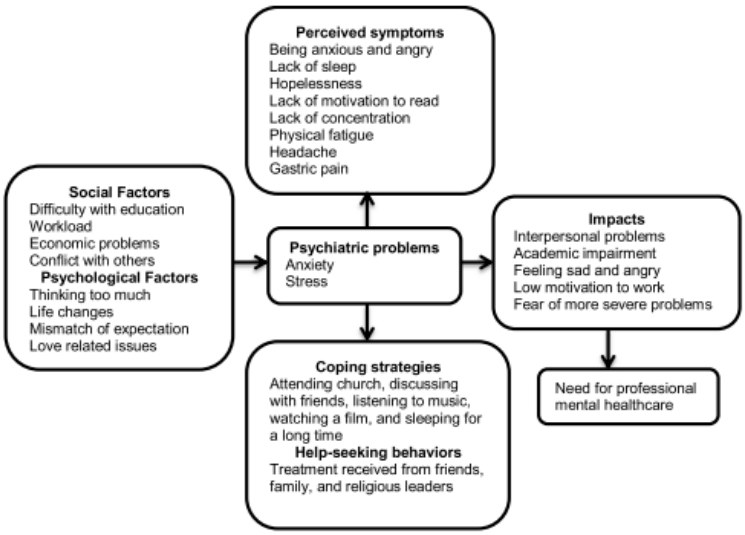

Figure 2 Conceptual framework of explanatory models of mental distress.

Discussion

In this qualitative study, anxiousness, fatigue, headache, and hopelessness were the most commonly reported complaints by university students. Most of the participants labeled these complaints as anxiety or stress. The most commonly reported causal explanations were related to social and psychological issues. More than half of the participants perceived their mental distress as a severe problem. Most students reported that the onset of their mental distress ranged from two months to four years. Their mental health problem mainly affected their head which in turn had significant negative impacts on their interaction with other people, their academic achievement, emotions, and motivation to work. Almost all participants received care for their mental distress from informal sources and all of them had the intention to receive mental health care from professionals because they feared their distress would worsen with time. Participants reported that they managed their mental distress by using both positive and negative coping strategies.

Most of the students conceptualized their mental health problems in terms of psychological and somatic symptoms. The most frequently reported psychological symptoms were being anxious and feeling of hopelessness, which are also used as diagnostic features of anxiety and depression, respectively, in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).[49] Although there is a difference in a context in the present study, these symptoms have been previously identified in LMICs and in high-income country where most adolescents elaborated their distress by feeling of anxiety[26] and lack of hope.[50] Other frequently reported complaints in the current study were physical fatigue and headaches that are recognized as diagnostic criteria for depression and anxiety, respectively.[49] Somatization of mental distress is common worldwide, for example, in many African countries,[51] in Oman,[52] in Iran,[53] and in India[54] people with anxiety and depression express their distress in terms of medically unexplained symptoms. The expression of mental distress in terms of somatic symptoms is a complex question and might be linked among other things to fear of public stigma[55] and cultural influences.[9]

Most of the students labeled both psychological and somatic symptoms as a manifestation of anxiety or stress. Although the context is different, a similar result is also found in Vietnam, where most students labeled depression symptoms as stress or anxiety.[56] Being able to give a specific psychiatric term to the complaints may be because of the students' educational status, which may have influenced their mental health literacy; the symptoms of anxiety and stress are very common among university

students and considered as normal life challenges.[12] Most students attributed their mental distress to more than one causal factor; similarly, in North Western Ethiopia[57] and Kenya,[58] most participants reported psychosocial explanations as causes for their mental health problem. Of the causal factors, students reported more education-related issues. These academic stressors are associated with heavy academic loads, exam difficulty,[59] difficulty with assignments,[28] and the time constraints required by courses.[52] Previous studies also found that most university students' major stressor for mental health problem was linked to educational stressor.[18,60]

The next most commonly reported social causes were economic problem and interpersonal difficulties. Most of the students who join university in Ethiopia encounter economic challenges. This is especially more challenging for students from rural background, because of: (a) their family assumes that if their student joined in a university, they expect every cost of the student is covered by the university, but the reality on the ground is that a public university in Ethiopia covers only students' food, dormitory, and medication cost with a cost-sharing system; (b) almost all undergraduate students in Ethiopia are economically dependent on their families' income; and (c) there is difficulty of accessing bank and telecommunication services for students who come from rural areas. The inability to receive money from families in a timely way can cause mental distress; the death of a family member who was the main breadwinner for the family again creates mental distress for the student involved. Similar studies have shown that poverty and conflict within the family are causal factors for psychological distress.[28,60–62]

In the present qualitative study, more than half the students reported that their mental distress was very severe. This in turn affected their interactions with others, their academic achievement, their emotional state, and their motivation to work. In prior studies, most participants reported that their mental distress was severe[51] and negatively affected their social interaction,[25] feeling,[53] education result,[13,52,63] and appetite for work.[64] Students reported different coping strategies to manage their mental distress. Of these, getting social support from friends, attending church, and listening to music and watching a film were among the positive coping styles that used to recover and get relief from mental distress without causing negative health effects, which were also reported in the previous studies.[13,17,18,28,60,65,66] On the contrary, sleeping for a long time was commonly reported as an unhealthy coping mechanism that could harm students' education and health outcomes. The use of maladaptive coping strategies by the students might be caused by feeling hopelessness[67] or associated with unable to control their mental distress.[68] Apart from seeking help from friends, religious leaders, and family, all students wished to receive mental healthcare due to fear and increasing severity of the distress from time to time. This might indicate how their problem is severe because most adolescents perceive help from professionals as a last resort and a sign of weakness.[13]

Limitations

All research has its limitations, and the present study is not limitations-free. First, the data collected using self-reported questionnaires might have involved recall bias. Second, the face-to-face interview might be prone to social desirability bias when reporting negative coping strategies. Third, most participants were male and female students' perceived explanatory models for mental distress are likely to be under-represented.

Conclusions

Most students perceived their mental distress in terms of psychological and somatic symptoms, most of them recognized their complaints as anxiety or stress that caused psychosocial factors. Most students perceived their distress as severe and affected their education and social interactions. Therefore, first, we recommend that exploring the explanatory models for mental distress among university students must be part of understanding the students' needs for mental healthcare and support and implementing locally acceptable and feasible evidence-based mental health intervention/s. Second, mental health professionals working in the university hospital, student clinic, and student counseling offices are expected to sufficiently access their mental health services to students with mental distress to reduce the burden of the problem.

Abbreviations

LMICs, low- and middle-income countries; SRQ, self-reporting questionnaire; SEMI, Short Explanatory Model Interview; SD, standard deviation; DSM-5, Diagnostic and Statistical Manual of Mental Disorders; ETB, Ethiopian Birr.

Data Sharing Statement

The datasets used and/or analyzed during the present study are available from the corresponding authors on reasonable requests.

Ethics Approval and Informed Consent

Ethical clearance approval was obtained from the Institutional Review Board of Addis Ababa University College of Health Sciences with a protocol number of 045/17/Psy. All participants provided written informed consent before participating in the study after they had received clarification about the objective of the study and received an information sheet. The participants' informed consent included publication of anonymized responses. They were informed that they could withdraw from the study at any time if they were not comfortable participating in the study, without prejudice. Concerning tracing the participants using their cell phone number, they were well informed about the availability of the counseling service given by mental health professional, if they need in our previous screening study;[21] then, they convinced and consented to receive mental health intervention so that they wrote their cell phone number in the middle of the mental distress screening tool. Then, the principal author of this study provided the counseling service for all participants involved in this study. The questionnaire that contained the participants' cell phone numbers was kept in a locked box of the principal author's house to keep confidentiality. The collected data were kept anonymous and confidential during all the stages of the study. Besides, this study was conducted in accordance with the Declaration of Helsinki ethical principles for medical research involving human participants.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare that they have no competing interests in this work.

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Appendix C: Sub-study-III. Published paper

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RESEARCH Open Access

Feasibility and acceptability of brief individual interpersonal psychotherapy among university students with mental distress in Ethiopia

Assegid Negash[1,2*], Matloob Ahmed Khan[1], Girmay Medhin[3], Dawit Wondimagegn[1], Clare Pain[4] and Mesfin Araya[1]

Abstract

Background: The prevalence of mental distress among university students in low- and middle-income countries (LMICs) is increasing; however, the majority do not receive evidence-based psychological intervention. This calls for the provision of culturally adapted psychological therapy in higher education institutions in LMICs. The aim of this pilot study is to evaluate the feasibility and acceptability of Interpersonal Psychotherapy adapted for Ethiopia (IPT-E) among Wolaita Sodo University students and to assess the preliminary outcomes of IPT-E in reducing symptoms of mental distress and in improving functioning.

Methods: We used a quasi-experimental single-group pre-post-test study design. As indicators of feasibility of IPT-E, we used consent, treatment completion and attrition. We used Client Satisfaction Questionnaire and semi-structured interview to measure the acceptability of the intervention, self-reporting IPT-E checklist to assess treatment adherence and World Health Organization Disability Assessment and Self-Reporting Questionnaire-20 tools to assess functional impairment and mental distress, respectively. We used percentage, frequency, mean and standard deviation to summarize the demographic variables, feasibility and acceptability of IPT-E. We analyzed changes from pre- to post-tests of mental distress and functioning results using paired t-test and Wilcoxon signed-rank tests. Independent sample t-test and one way-ANOVA used to assess the difference in mean score of in demographic variables at baseline and eight weeks. The qualitative data was analyzed with the support of open code 4.02.

Results: IPT-E was feasible (consent rate = 100%; completion rate = 92.31%; attrition rate = 7.69%; mean score of the sessions = 8 and mode of the session = 8). The total mean score of treatment satisfaction was 27.83 (SD = 4.47). After the delivery of IPT-E, symptoms of mental distress were decreased, functioning was improved and therapist adherence to the treatment model was 100% (i.e. treatment delivered according to the IPT-E guideline).

Conclusion: IPT-E was feasible and acceptable to treat university students with mental distress in low-income country setting. The preliminary results also suggest promising viability of IPT-E in higher education institutions of low-income country setting for students with symptoms of anxiety and depression.

Keywords: Mental distress, Feasibility, Acceptability, Interpersonal psychotherapy, University students, Ethiopia

*Correspondence: assegidn@gmail.com
[1] Department of Psychiatry, College of Health Sciences, School of Medicine, Addis Ababa University, Addis Ababa, Ethiopia
Full list of author information is available at the end of the article

Background

The prevalence of mental distress understood as the symptoms of anxiety and depression is higher among university students as compared with the general population [1] has increased over the past few years [2]. For instance, the prevalence of depression symptoms among university students is 30.6% worldwide [3], 24.4% in low- and middle-income countries (LMICs) [4] and the pooled prevalence of anxiety and depression is 37.73% among Ethiopian university students [5]. Globally reported risk factors of experiencing mental distress among students are: (i) academic pressure and financial constraints, [1, 6]; being away from home for the first time and starting new peer relations [7]; inadequate social support [8, 9]; (iv) loneliness [10]; (v) substance use [11]; (vi) earlier age of onset of symptoms [12], where most of university students' age range from 17 to 25 years [13]; and (vii) interpersonal conflicts [14].

Increased severity of mental distress along with the lack of access to professional mental healthcare are associated with an adverse effect on students' academic achievement, physical health, emotion, self-esteem, social relationships, cognitive development, and their overall quality of life. Evidence showed that students with mental distress and who did not receive mental healthcare timely experienced low academic performance [15] and suicidal thoughts and attempts [16]. A Previous study reported that college students who experienced depression and sleep disturbance in America had a high burden of comorbid anxiety and poor mental and physical functioning [17]. The burden and functional disabilities of mental distress are more severe in LMICs university students [7], where the accessibility of psychological interventions is limited.

Despite the increasing number of universities in LMICs and a growth in the proportion of students enrolled in these universities, the provision of professional mental health services for students remains underdeveloped, largely because there are insufficiently trained therapists/counselors [18]. As a result, the majority of the students in LMICs do not receive professional mental health care, even if the students request or require it [19]. Most students in need receive support from informal sources such as friends, family, traditional healers, and religious leaders [20]. In some settings in LMICs the inability of students to receive formal mental health services may be associated with an increase in the severity of mental distress and the development of Common Mental Disorders (CMDs), withdrawal from the university, substance use, self-harm and suicide, low self-esteem, isolation, and poor academic performance [21–24]. In so far as the prevalence and burden of anxiety and depression are rapidly increasing among students, universities are advised to ensure adequate student counseling services to prevent and treat student for distress and mental health symptoms [25]. Early detection of mental distress and feasible psychological interventions are needed in LMICs universities, to combat the negative impacts of mental distress on education performance, social interactions, health, and functional impairments of students [10, 26].

Psychological interventions are effective in treating CMDs (anxiety and depression) in LMICs [27] and are recommended by the World Health Organization intervention guide [28]. When employed they result in fewer relapses and premature treatment termination as compared to pharmacotherapy for students with depression [29]. Of the potential psychological interventions, Interpersonal Psychotherapy (IPT) is effective in resolving symptoms of depression and anxiety and improving interpersonal relationships and has been used in primary health centers in LMICs, including Kenya [30], South Africa [31], Egypt [32], and Ethiopia [33]. IPT is an evidence based brief time-limited manualized therapy, which is used to treat clients who struggle with depression associated with current interpersonal dispute/conflict, role transitions/life changes, grief/loss and social isolation/loneliness [34].

Interpersonal conflict is defined as "a situation in which the patient and at least one significant other person have non-reciprocal expectations about their relationship" [34] informally understood as disagreements, arguments and disputes. During the university stay, students who experience conflict with their friends and family increases their likelihood of developing mental distress [14, 35]. Interpersonal conflict is chosen as an IPT focus area when worsening symptoms are connected to disagreements and arguments. Role transition is focal area of IPT that is defined as an individual who is unable to adapt to new life changes (both positive and negative) that include moving away from the family, poverty, separation or rejection by a lover, caring for someone who is dying, serious illness and getting marriage [34]. All university students face role transitions and it is chosen as an IPT target when worsening symptoms are linked to significant life changes with challenges to adapt to new circumstances.

Grief is another IPT focal area that occurs when a student loses a significant person by death [36]. It is common to experience grief reactions such as sadness, feelings of discomfort, guilt and anger for most people across the world, but if it fails to resolve within a reasonable time dictated by local cultural expectations, it increases the risk for CMDs and it negatively affects students' academic performance and quality of life [36–38]. Besides, prolonged grief impairs participation in social or enjoyable activities, deprives mood and deny the death of

the closed person [39]. The last IPT focus area is social isolation, which is associated with the person talks about feeling lonely and separate from others that are caused by problem of maintaining relationships with friends, family, relatives or others [34].

However, the feasibility and acceptability of IPT has not been well studied in LMIC university setting, where most students' mental distress is mainly caused by role transitions, interpersonal conflicts and grief. At the global level, some studies showed the feasibility and acceptability of IPT among adolescents. For example, a quasi-experimental study conducted in Columbia reported that brief IPT was feasible and acceptable in reducing mild to moderate symptoms of depression and improving social functioning among adolescent students [40]. A systematic review and meta-analysis also reported that IPT was an effective therapy to treat adolescents with symptoms depression [10, 41]. Furthermore, an experimental study conducted among Iranian university students reported that students who received brief group IPT showed a significant reduction in depression symptoms compared to the control group [42]. However, a study conducted in Australia reported that individual IPT is more effective than group IPT for treating depressed adolescents at school setting [43]. Likewise, another evidence showed that the majority (95%) of the college students prefer individual psychotherapy to group counseling [44].

The high prevalence of mental distress and challenges encountered by university students in LMICs are a call to implement culturally appropriate evidence-based and practical psychological intervention. Although previous studies recommend the need for accessible and acceptable evidence-based mental health interventions for university students with mental distress, to our knowledge, there is no published evidence from studies conducted in Ethiopia on the feasibility and acceptability of IPT for university students with mental distress. The primary aim of this pilot study was to evaluate the feasibility and acceptability of brief individual Interpersonal Psychotherapy adapted for Ethiopia (IPT-E) among Wolaita Sodo University (WSU) students. And the secondary objective was to evaluate outcomes that include the preliminary effectiveness of IPT-E in reducing symptoms of mental distress and improving functioning.

Methods

Study area and context

The current study was conducted at WSU, a non-profit public university in Wolaita zone, Wolaita Sodo City which is located 320 km south of Addis Ababa, the capital of Ethiopia. The University was established in 2007 with intake of 801 students in four faculties and sixteen departments. Currently, the University runs undergraduate and graduate programs in regular, weekend and summer courses in six colleges and five schools with a total student population of 30,000. The University has its own health service facilities and it has four full-time counselors with four counseling offices that provide free counseling services for students with mental health and psychosocial problems. WSU has a referral teaching hospital (named as Otona) that provides health care services, including psychiatric care for the surrounding community and students. A dedicated clinic within the university compound provides health care services for students and it has a referral system with the hospital for students with severe physical and mental illnesses. In response to the occurrence of coronavirus (COVID-19) pandemic the University has established a Mental Health and Psychosocial Support center to help students with COVID-19 related issues.

Study design

We used a quasi-experimental single group pre- and post-test design with repeated measures for secondary outcomes. The data were collected from December 2019 to February 2020.

Study participants and their recruitment procedures

Our source population is undergraduate students in WSU. We posted flyers in target areas, including: the students' dormitories and cafeteria, the main gate of the university, the library, and student's health clinic. In addition, we prepared three banners in collaboration with the WSU student's Dean and counseling offices. These banners were posted in the same strategic areas as the flyers. The flyers and banners were written in Amharic, the official language of Ethiopia which most students speak. The flyers and banners encouraged those students who experienced symptoms of psychological distress to come to student services for IPT-E. The flyers and banners included the names, addresses and contact data of the counselors as well as their time of availability.

The counselors registered students that came to the counseling offices requesting assistance following the distribution of the flyers and erection of the banners, and screened them based on eligible criteria for IPT-E: they were an undergraduate student; scored 8 or more on SRQ-20; they were 18 years or older; willing to attend at least 4 IPT-E sessions and able to speak the Amharic or Wolaitigna or Afan Oromo language. The exclusion criteria were: students with serious physical illnesses; suffering from cognitive impairment; severe mental illness; and already receiving psychiatric medication or psychological treatment or traditional treatment. The counselors asked the students some questions to identify these exclusion

criteria. Twenty six eligible students were recruited and participated in the IPT-E sessions. See Fig. 1.

IPT has been adapted to the Ethiopian context in collaboration with Toronto Addis Ababa Psychiatry Project and the Biaber Project and named Interpersonal Psychotherapy adapted for Ethiopia (IPT-E) [33]. This culturally adapted talk therapy is a brief manualized evidence supported intervention used to treat clients with CMDs caused by loss, life transitions/role changes, and interpersonal conflicts [33]. Social isolation was not considered as focal area of IPTE, because in a country where everyone lives in a community, the issues of social isolation and IP deficit are rare foci for symptoms. The IPT-E manual has 8 modules, 4 that contains a basic and interactive orientation to mental health in Ethiopia, including mental health service delivery, mental health risks and resilience, the therapy relationship, safety issues, mental health screening, and 4 modules on the IPT-E: beginning phase, middle phase, termination phase, using relevant example cases and includes an evaluation of IPT-E training outcomes. In addition, the manual has Amharic language case-based training videos.

The IPT-E beginning phase includes screening a client for mental distress; how to select cases appropriate for IPT-E; ensuring consent to participate in the treatment; and screening for client safety such as suicide, domestic violence, harming others and substance use. The counselors understand clients' problems, symptoms, functioning, and explanatory model using a Treatment Tracking Form (TTF). They also conduct an interpersonal inventory, and provide tailored psycho-education for the client. Finally, the counselors formulate one or maximum two IPT-E focus area/s (grief, life change or disagreements) for the next middle phase of the intervention.

The middle phase of IPT-E is the heart of the intervention, where general techniques such as role play, psychosocial supports, brainstorming, and communication analysis were practically implemented on the selected IPT-E focus area/s. This occurred in combination with several techniques to address the focus area specifically. In this phase, symptoms and functioning are tracked at each session using the TTF. In the termination phase, the counselor reviews the client's efforts, progress, therapeutic achievements and changes made in the beginning and middle phases. Throughout treatment the counselor has an IPT-E treatment checklist to note the various IPT-E activities used in the counseling process.

The IPT-E was conducted on a weekly basis and lasted for 40–60 min per session. The number of sessions attended in the IPT-E ranged from 4 to 8. IPT-E has a screening tool which consists of 6-items used to identify participants with mental distress. Both the screening and treatment were given by four counselors under the close supervision of the principal investigator in their own counseling offices, which were well furnished, ventilated, and attractive. All the counseling offices are situated in the same building as the student's clinic, which promoted a robust referral system and avoided stigma of student clients having separate mental health services. The sessions were not audio-recorded because clients were not comfortable with this. However, the delivery of IPT-E in every session was documented by the counselors using the IPT-E treatment checklist. All counselors had their clients' cell phone numbers to remind them of the time of

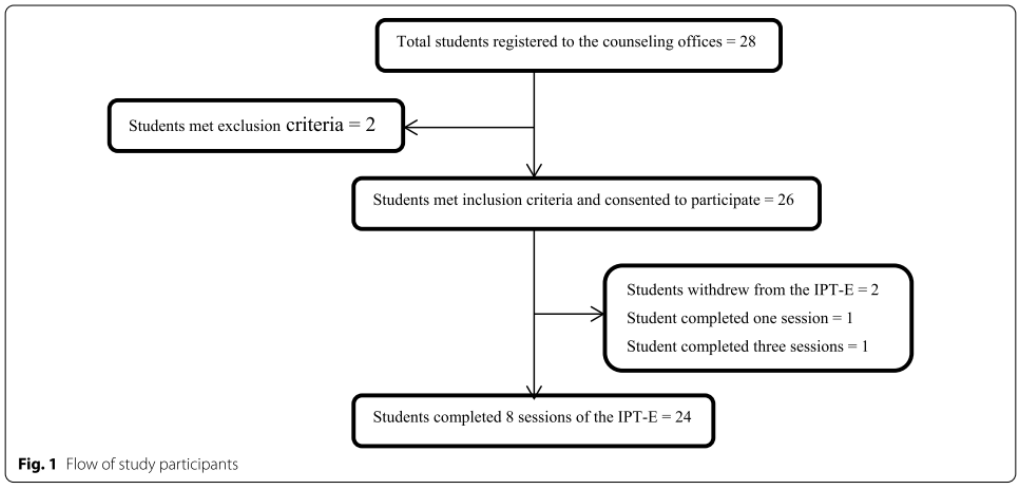

Fig. 1 Flow of study participants

their appointment. Clients who had to miss a session due to unexpected events agreed in advance to communicate his/her counselor via cell phone and then rebook for the next appropriate day. The first author of the article supervised the counselors' work every week.

IPT-E training for counselors

The intensive IPT-E training was given for four consecutive days and included practical sessions on the clinical skills required. Initially, five counselors participated in the training, but four completed the training. The two women counselors had a Bachelor degree in Public Health, one male counselor had a Master's degree in Public Health and the other had a Master's degree in Counseling Psychology. Three of them could speak Amharic and Wolaitigna languages fluently and one counselor could speak Afan Oromo and Amharic languages fluently. The training was given by the principal investigator who has a Bachelor's degree in Psychology, a Master's degree in Counseling psychology, had 2 years counseling experience in WSU counseling office and has attended the theoretical and practical training of IPT-E given by the manual adaptors.

To evaluate the outcome of the training, the trainer administered pre- and post-tests prepared from the IPT-E manual and a training satisfaction feedback measuring tool. All counselors showed a significant change in the post-test result compared to the pre-test indicating that the counselors received the necessary knowledge to implement IPT-E in the practical session. The practical sessions also helped them to acquire the clinical skills of implementing IPT-E. Besides this, all the counselors rated the training as excellent and reported that the standard quality of the training was high and fulfilled their expectations. They reported that they received practical knowledge that enabled them to treat students with symptoms of anxiety and depression.

Measures

Five instruments were used to collect the demographic and outcome data. IPT-E screening tool and TTF were used together to collect data including participants' age, sex, marital status, perceived cause of the problem, treatment received, onset of the problem, concurrent problems, medication, substance use, experience of gender based violence, suicide ideas, plan and past attempts, and thoughts and past attempts of harming others. The second instrument was IPT-E feasibility measuring tool, which was used to evaluate the number of students who attended the intervention session, consent rate, completion rate, attrition rate, the duration of the intervention session attended, and the mean and modal number of sessions completed over 8-weeks.

The third instrument was Client Satisfaction Questionnaire-8 items (CSQ), which was used to measure acceptability of IPT-E. The 8-items were rated on a Likert scale ranging from 1 to 4 that yield a minimum total score of 8 and a maximum total score of 32 [45]. In addition to this, a semi-structured interview was conducted with 10 clients to explore further satisfaction received from the intervention. Redundancy of the clients' response to the open ended questions framed from CSQ indicated the saturation of the data. The qualitative data were audiotaped. The fourth was fidelity to the IPT-E treatment that included intervention adherence and the number of session attended (dose) [46]. This treatment adherence was assessed by the IPT-E treatment self-report checklist, which was coded as "yes" or "no" ("yes" indicates the accomplishment of the expected key tasks within each session and "no" represents a failure to accomplish the expected key activities in each counseling session). The counselors completed the checklist for every session of the IPT-E.

The fifth tool was World Health Organization Disability Assessment (WHODAS-2.0) [47]. This instrument is a self-administered 12-item scale designed to measure functional difficulties caused by mental distress in the past 30 days. It has six functional domains which are: understanding and communicating, getting around, self-care, getting along with people, life activities, and participation in society with a Likert scale ranging from 1 (none) to 5 (extreme/cannot do). Scores are computed either by adding the response of items in each domain separately or by adding all the responses together to get a global score. A higher score indicates greater functional impairment. WHODAS-2.0 has been adapted and validated in Ethiopia for people with severe mental illness [48].

The six instrument was Self-Reporting Questionnaire-20 items (SRQ-20) used to measure the extent of mental distress in the last 30 days. This tool is primarily developed by WHO and recommended to LMICs to screen positive cases of mental distress [49]. It has binary options (yes = 1 indicating the presence of the symptom, no = 0 indicating the absence of the symptom). Adding each item gives a maximum total score of 20″ [50]. The SRQ-20 has been validated in Ethiopia with different cut-off points [51, 52]. For the present study, we used a cut-off point 8 or above on SRQ-20 to identify positive cases to mental distress based on a previous validation study [53].

See Additional file 1.

Data analyses

In the present study, data were collected at baseline and at eight-weeks. The data collected using SRQ-20 and

WHODAS-2.0 were measured twice, whereas the data measured by CSQ, IPT-E feasibility measuring tool, and interviews of the clients were collected at eight weeks. The quantitative data were analyzed using Statistical Packages for the Social Sciences version 20 after cleaning, checking the missing values, outliers, and after checking normality assumption of the distribution of continuous variables. The demographic variables, feasibility and acceptability of IPT-E and treatment satisfaction were summarized using percentage, frequency, mean, and standard deviation.

The preliminary effectiveness of IPT-E measured by SRQ-20 at pre- and eight weeks were analyzed using paired t-test and the functioning data measured by WHODAS-2.0 at baseline and post-assessment were analyzed by Wilcoxon signed-rank test. Independent samples t-test and one-way ANOVA were used to compare the mean score difference of two and more categorical variables with normally distributed continuous outcomes, respectively. The effect size was interpreted based on 0.01 = small effect; 0.06 = moderate effect; and 0.14 = large effect [54]. Statistical significance was reported whenever *p*-value was less than 0.05. The audiotaped qualitative data of the acceptability of IPT-E were transcribed verbatim and translated and then analyzed using thematic analysis approach supported with a qualitative software, open code 4.02 [55].

Ethical issues

All the ethical considerations and the methodological plausibility of the current study were done according to Addis Ababa University College of Health Sciences (AAU-CHS) Institutional Review Board [28] guideline. Ethical clearance was obtained from the IRB of AAU-CHS with protocol number of 045/17/Psych. The intervention was initiated after receiving written informed consent from all study participants. The participants were informed that they could withdraw from the study at any time if they were not comfortable participating in the study, without prejudice. There was a referral system through the students' clinic to the Otona hospital for those students who met the exclusion criteria of the present study. As a result, two students who were previously diagnosed with severe mental illness and taking psychotropic medications were referred to the Otona hospital for further psychiatric care. Finally, the collected data were kept anonymous and confidential throughout the whole study process by locking the computer using a password known only by the principal investigator. The data documented on the hard copies were kept in locked box of the principal author's house.

Result

Demographic characteristics of the study participants

The proportion of male–female participants was equivalent (50%) and 79.2% were single. Their age ranged from 18 to 23 years with a mean age of 21 years (SD = 1.49). The majority (75%) perceived that the causes for their mental distress were disagreement (conflicts with family, friends and dorm mates and life changes (being new to university life, separation or rejection by a lover and loss of support/economic hardship). All participants were not receiving treatment from traditional healers or from other sources throughout the study period and 50% reported that their distress started before two years prior to this study. All participants reported that they did not have concurrent medical conditions such as HIV, TB, malaria, diabetes and heart disease and substance use. They were not taking any medication during the intervention period; they reported no previous experience of gender-based violence and no past attempts of suicide and harming others. The majority (62.5%) had no thoughts of suicide and 95.8% had no plan to commit suicide. In the past month the majority (75.0%) had no thoughts of harming others (Table 1).

Feasibility of IPT-E

All participants provided written consent to participate in the IPT-E. Of the 26 eligible participants who initially participated in the intervention, 24 completed the full eight-session treatment resulting a completion rate of 92.31%. The remaining two withdrew from the intervention (one participant attended session one and the other attended three-sessions), which yielded in the attrition rate of 7.69%. These two participants were excluded from the data analysis. The mean, median and mode number of the intervention sessions attended were 8.

Acceptability of IPT-E

The total mean score of client satisfaction received for IPT-E was 27.83 (SD = 4.47; range = 12–32). The majority (66.7%) rated the quality of the intervention they received being excellent; they qualitatively expressed their satisfaction as follows:

A 21-year-old female student said:

> *"Ok, thank you, eh…the care that I received is like* የደረቀን ዛፍ እንደማቆጥቆጥ ነው *translated into English as changing a dried tree to a tree with wet leaf. I received my previous identity; I am confident, strong, have a good communication with my friends (my friends are surprised by my improvement) and I am also happy." (Interviewee #07).*

Table 1 Demographic characteristics of the participants (n = 24)

Variable	Number	Percent
Marital status		
Single	19	79.2
Married	2	8.3
In relationship	3	12.5
Age		
Mean (Standard deviation)	20.67 (1.49)	
Perceived cause of mental distress		
Grief	3	12.5
Conflict	9	37.5
Life change/role transition	9	37.5
Conflict and life change	2	8.3
Loss and life change	1	4.2
Did not received treatment from traditional healer during the study period	100	100
Problem has been present continuously for 2 or more years		
Yes	12	50
Had ideas of suicide in the past month		
Yes	9	37.5
Had plan of suicide in the past month		
Yes	1	4.2
Had thoughts of harming others in the past month		
Yes	6	25.0
Is the client fit for IPT-E?		
Yes	24	100

Another 20-year-old male student explained that:

"If I am not able to get her (the counselor) care, I would be a daily laborer and below my friends, because my family cannot afford private college fees to teach me. God showed me the counselor because she saved me the whole of my life. I found it very helpful." (Interviewee #05).

Forty-six percent of the study participants reported that they definitely received the kind of the services they expected and almost all of their needs were met. Despite this, most students qualitatively expressed the treatment they received as it was beyond their expectations that fully addressed their mental health care needs.

A 21-year-old female student said:

"Normally, when I came to this office, it was because of my friend's advice. I was not expecting to get such kind of service; I just came to tell my የወስጠቤ ብሶት *(translated as internal turmoil) if somebody is ready to listen to me; however, what I was thinking was completely different from what I received. It is beyond my expectation." (Interviewee #07).*

The majority (75.0%) of the participants reported that they would definitely recommend the intervention received to their friends in need of similar care. Over half (54.20%) reported that they were very satisfied with the intervention they received. They qualitatively expressed that all of them were satisfied by the treatment given to them and they would recommend for their friends with mental distress in need of similar mental health care.

A 23-year-old male student said:

"If I love him (friend), why not bring him here? Because I'm satisfied with the service I received… (laugh). Our prophet said that one person is said to be not believed in Islam until he loves what he loves for his brother. Because I am satisfied with the therapy; I am happy to bring my friends who have a problem, even anyone on the street suffering from such a problem if it is not adding a burden on the counselor. Normally, I was laughing a false laugh before therapy, however, now I am normally happy even when I did not score a good exam result." (Interviewee #01).

Another participant stated:

"Yes, I received important advice that not only helps me but also enables me to even advise someone else; now I can advise another person who has similar feelings of distress. The interviewer asked, you mean you can replace the counselor? Yes, laugh…laugh… I can send other people with a problem by informing them there is a counselor who provides counseling services and I can bring them here." A 20-year-old male interviewee #04.

Most (70.80%) participants reported that the mental health service they received helped them effectively deal with their problem and half (50%) of them rated their overall treatment satisfaction as mostly satisfied or very satisfied.

A 23-year-old male student said:

"Extremely, my face speaks; I am very happy today; my previous happiness has returned again; I started to communicate with many people. Previously even I do not know the name of the students in our class; I asked my friend who was this student in our class? You know I entered to the class before anyone and sat at the back corner and I left the class at the end when all students went out. But now, I play and communicate with the students; we go together up-to the dormitory. I have a good relationship with my dorm mates; there is a student who disturbs me in the dormitory; I tolerate him very well; if I were in my previous mental state, I would have conflict with him." (Interviewee #01).

Most (62.5%) participants reported that they would definitely return to the counseling office if they need care again.

22-year-old male student explained:

"I hope I would not have to face the problem, but if it occurs again, I will come back." (Interviewee #08)

There was no statistically significant difference in any of the demographic variables in the treatment satisfaction.

Fidelity

The majority of the participants attended 8 IPT-E sessions. Each session lasted 40 to 60 min as is recommended by the IPT-E guidelines. In addition to the provision of training for the counselors and regular supervision of the delivery of IPT-E counseling service, the accomplishment of the key activities to be done in each session were immediately evaluated. All counselors ticked "yes" for all activities, indicating that the necessary tasks were done in each of the IPT-E sessions.

See Additional file 2.

Outcome evaluation

The IPT-E showed preliminary effectiveness in decreasing symptoms of mental distress and improving functioning among students. There was a statistically significant decrease (p-value = 0.001) in mean score symptoms of mental distress from baseline (M = 14.13, SD = 3.70) to eight weeks post assessment (M = 3.21, SD = 3.12) with effect size of 0.89 (large effect). At the post-assessment, four participants (16.6%) scored above the cut-off 8 on SRQ-20 (2 participants scored 10 points and another 2 participants scored 14), even if they showed symptoms reduction in mental distress from the baseline.

The data collected through Treatment Tracking Form (TTF) showed an improvement of mental distress in each session. Likewise, there was reduction in the frequency of mental distress symptoms from pre-to-post assessment in the past two months. During the pre-test a large proportion of the participants reported that they experienced symptoms such as being sad, miserable or hopeless (46%); had little pleasure in doing things (54%); felt anxious (67%); and experienced a lack of energy on several days in the past one month (50%). Of all participants, 29% felt restlessness and 38% had trouble concentrating on conversations or reading nearly every-day in the past month. Of the total participants, 33% felt bad about themselves and unable to control worrying several days or nearly every-day in the past one month and 42% had trouble sleeping nearly every-day in the last month. Furthermore, 46% of the participants felt afraid that something awful might happen without a reason and 50% experienced more than 5 physical symptoms several days in the past month.

After the two months IPT-E intervention, the majority (75%) of the participants had not felt symptoms such as being sad, miserable or hopeless and 71% had pleasure in doing things. The majority (75%) reported that they had no symptoms of anxiety and 79% recovered their energy after the intervention they received. Almost all (91.70%) of the participants felt symptoms such as restlessness and feeling bad about themselves had remitted. They no longer had difficulty concentrating on conversations or reading after the intervention they received. Most (79%) participants no longer experienced problems controlling they worrying and 88% were sleeping well. Finally, the majority (75%) lost their dread of something awful happening without reason and 83% no longer had 5 or more physical symptoms. For further information see Table 2.

The overall mean score of WHODAS-2 was significantly improved (p-value = 0.001) from baseline (M = 34.33, SD = 10.70) to post assessment (M = 22.71, SD = 8.34) with effect size of 0.43, (large effect). The mean scores of WHODAS sub-scales were significantly

Table 2 Pre and post-tests percentage of metal distress symptoms

Questions	Pre-test					Post-test			
	Not sure (%)	Several days (%)	Over half the days (%)	Nearly every day (%)	Never (%)	Several days (%)	Over half the days (%)	Nearly every day (%)	Never (%)
Felt sad, miserable, down or hopeless?		45.8	12.5	37.5	4.2	16.7	4.2	4.2	75
Felt little pleasure or interest in doing things?	4.2	54.2	8.3	25	8.3	16.7	4.2	8.3	70.8
Felt nervous/anxious?		66.7	25		8.3	12.5	8.3	4.2	75
Not enough energy, that everything is an effort?	4.2	50	20.8		4.2	8.3	8.3	4.2	79.2
Felt so restless it is hard to sit still?	8.3	25	25	29.2	12.5	4.2	4.2		91.7
Had trouble to concentrating on conversations/reading?	4.2	20.8	20.8	37.5	16.7	8.3	4.2		87.5
Felt really bad about yourself, that you are a failure or that you have let your family down?	12.5	33.3	12.5	20.8	20.8	4.2	4.2		91.7
Felt you could not stop or control worrying?	8.3	33.3		33.3	25	16.7	4.2		79.2
Had trouble sleeping?	8.3	12.5	20.8	41.7	16.7	4.2	4.2		87.5
Felt afraid as if something awful might happen without a reason?	16.7	45.8		20.8	16.7	20.8	4.2		75
How many days have you had more than 5 physical symptoms (e.g. aches and pains, palpitations, burning/numbness/crawling sensations)?	4.2	50	4.2	25	16.7	12.5	4.2		83.3

improved from baseline to eight weeks assessment. For detail information, see Table 3.

A total number of days suffering from mental distress among the participants were reduced following the intervention.

Change in mental distress following the intervention stratified by selected variables.

Baseline mean score of SRQ-20 was significantly influenced by gender, duration of depressive symptoms and reporting thoughts of harming others in the past month. However, at the post-test, mean score of SRQ-20 was not significantly affected by any of the pre-specified characteristics of the study participants. There was no statistically significant difference in the mean score of SRQ-20 by marital status and perceived causes of mental distress both at baseline and post-assessment (Table 4).

Table 3 Functioning at baseline and post-test

Measure	Baseline (n = 24)		8-weeks (n = 24)		Effect size	Z	*P*
	M	SD	M	SD			
WHODAS sub-scales							
Understanding communicating	5.83	2.04	4.00	2.17	0.32	− 3.28	0.001
Getting around	5.63	2.14	3.88	1.94	0.33	− 3.34	0.001
Self-care	3.92	2.12	2.83	1.24	0.20	− 2.37	0.02
Getting along with people	5.67	2.71	3.96	2.03	0.21	− 2.45	0.01
Life activities	6.42	2.24	3.38	1.35	0.41	− 3.96	0.001
Participation in society	6.88	1.75	4.67	1.93	0.39	− 3.80	0.001
Total WHODAS-2 score	34.33	10.70	22.71	8.34	0.43	− 4.18	0.001

M = Mean; SD = Standard deviation; Z = Z-value; *P* = *P*-value

Table 4 Mean score and standard deviation of selected variables at baseline and post-test

Variable	SRQ-20 score at baseline				SRQ-20 score at 8-weeks			
	M	SD	T/F	*P*	M	SD	T/F	*P*
Sex							2.02	0.06
Male	12.58	3.29	2.21	0.04	2.00	3.19		
Female	15.67	3.55			4.42	2.64		
Has the problem been present continuously for 2 or more years?							0.58	0.57
No	12.25	3.70	− 2.84	0.01	3.58	3.26		
Yes	16.00	2.70			2.83	3.07		
Ideas of suicide							1.07	0.3
No	12.87	3.50	− 2.36	0.03	3.73	3.45		
Yes	16.22	3.15			2.33	2.40		
Thoughts of harming others in the past month							− 1.2	0.25
No	13.28	3.51	− 2.08	0.05	2.78	2.96		
Yes	16.67	3.27			4.50	3.51		
Marital Status								
Single	14.63	3.85	0.86	0.44	3.26	3.41	0.38	0.69
Married	12.50	0.71			1.50	0.71		
In relationship	12.00	3.46			4.00	1.73		
Perceived cause								
Loss	14.33	4.73	0.26	0.90	3.26	5.51	1.57	0.22
Disagreement	14.88	3.89			4.33	2.00		
Life change	13.11	4.08			2.22	3.07		
Disagreement and life change	15.00	0.00			0.00	0.00		
Loss and life change	14.00	0.00			7.00	0.00		

M = Mean; SD = Standard Deviation; T = T-value for t-test; F = F-value for ANOVA

Discussion

Findings of the current study indicated that IPT-E is feasible and acceptable for university students with mental distress in Ethiopia. All eligible students consented to participate in the intervention and only two of them did not complete the 8-session individual IPT-E intervention. Overall, participants were highly satisfied with the care they received. IPT-E provided a promising preliminary result in Ethiopian University in decreasing symptoms of mental distress and improving functioning of university students.

Most of the study participants completed the 8 weekly sessions, which is comparable with the previous feasibility studies where the majority of depressed adolescents completed brief individual interpersonal counseling [40, 56]. The possible justifications for the feasibility of the IPT-E were: the counselors had received intensive training supported by clinical practice which helped them to engage the students; close supervision by the lead author of this paper; use of a fidelity checklist and the preparedness of the clients to give their counselors advanced notice of their absence. Besides this, our study was conducted in a building where a students' general medical clinic is located so students are not seen to be attending a mental health clinic. This potentially minimized stigma and increased the likelihood of attending the IPT-E sessions regularly [40]. In addition, the rapport building emphasis of IPT-E also played a role for most participants who attended all 8 sessions [57]. However, two participants withdrew from the IPT-E intervention, because one participant was transferred to a university near to his family and the other was not willing to continue the intervention because he was too busy with school work.

Study participants reported that they were highly satisfied with the intervention they received, indicating that IPT-E was acceptable. A previous study reported that adolescents who received brief IPT were highly satisfied with the care they received [40]. Similarly, in another study adolescents who received 8 sessions of IPT treatment were mostly satisfied/very satisfied with the care they received [58]. As well, the small attrition rate in the present study directly indicates the acceptability of the intervention being provided to the students. The present study has also shown very good treatment adherence what almost all participants completed all 8 treatment session, which is comparable to a prior study in which

the treatment adherence of interpersonal counseling by the counselors was reported as good [56]. Along with the educational status of the counselors, the didactic training supported by clinical practice and ongoing clinical supervision enabled the counselors to effectively deliver the IPT-E intervention which is also likely to be linked to the participants' satisfaction with the rendered counseling service.

The implementation of IPT-E indicated promising results demonstrating a significant decrease of the symptoms of mental distress and by improving functioning of the university students in the study. This finding is consistent with previous studies where most adolescents showed significant improvement in symptoms of depression and social functioning after receiving IPT intervention [40, 43, 56]. Another studies also reported that adolescents who received IPT showed a reduction of depression symptoms as compared to a control group [59, 60]. Similarly, a study in a higher education institution reported that students who received IPT had significantly reduced symptoms of depression compared to a control group [42]. Other reasons associated with the preliminary effectiveness of IPT-E to improve mental distress and functioning are the didactic training and ongoing clinical supervision of the counselors which enabled them to provide IPT-E intervention. As well, ongoing monitoring of the students' mental distress symptoms and functioning; and the fact that good cognitive capacities [61] and high educational level [62] are associated in the literature with a good response to mental health interventions.

The first onset of most mental health disorders occurs in the age range of 15–25 years [12] and most undergraduate university students are within this age category. As evidence shows, the first-onset of mental health problem can be treated better than the recurrent mental health problem, which might explain why the preliminary effectiveness of IPT-E among the students is high [25]. Other reports note that mild to moderate mental distress among adolescents responds more easily to IPT as compared to severe mental distress [40, 56]. Culturally adapted IPT-E and the high completion of treatment rates of the participants contributed to the improvement of the above mentioned clinical outcomes. This coincide with the results of previous studies where culture tailored mental health interventions enhanced the effectiveness of psychological therapy [40, 56, 60] and the greater number of counseling session attendance predicted the success of mental health intervention [63]. The ideal number of a brief counseling session for anxiety and depression ranges from 6 to 8 sessions [64], which fits with our finding where the mean attendance of IPT-E session was 8. Furthermore, we had taught the counselors during the training and clinical supervision to deliver the counseling service by establishing a good therapeutic alliance and rapport that enhanced the preliminary success of IPT-E in remitting symptoms of mental distress and disability [65].

Limitations: The present study had some limitations: first, our study did not include a comparison group which reduces our confidence in the effectiveness of IPT-E to decrease mental distress and improve functioning. However, the short 8 week time difference between the pre- and post-test in the present study may have addressed the reduction of symptoms by time alone. Second, the small sample size in the present study may limit the generalizability of the findings, so that the interpretation of the clinical outcomes should be undertaken with caution. Finally, in the present study, there were no follow-up sessions. We assessed the counselors' adherence to the IPT-E manual, but future studies should measure the clinical competency of counselors. A randomized controlled trial of IPT-E and longer follow-up period would secure the evidence base of IPT-Es to further scale-up the service in similar settings.

Despite the drawbacks, the present study has some strengths, including knowledge and skills transferred to the university health workers on how to effectively treat students with mental distress using the IPT-E guidelines. The other strength was that the close clinical supervision of the counselors' and their adherence to the treatment model increased their knowledge and skills to deliver IPT-E, and extended the capacity of the students' clinic to address to distress of student. We used locally adapted instruments to screen participants with mental distress and to measure disability. Lastly, we had balanced number of male and female counselors to comfort the need for study participants in a counseling session; we think this paved the way to equalize the sex ratio of participants in the present study.

Conclusion

The present findings indicate that IPT-E is a feasible and acceptable intervention for the treatment of students with mental distress in low-income country settings. IPT-E also showed promising preliminary effectiveness in reducing symptoms of mental distress and improving functioning of University students. The present study findings provide viable information for mental health service providers in higher education institutions to use and scale-up the manualized IPT-E intervention designed to treat people with CMDs. Therefore, scaling-up of this intervention to the national level and implementing it in higher education institutions in Ethiopia would potentially address the high prevalence and burden of mental distress and

reduce the mental health treatment gap among university students [19], although stronger evidence for IPT-E needs to come from randomized controlled trials.

Abbreviations

LMICs: Low- and Middle- Income Countries; WSU: Wolaita Sodo University; IPT-E: Interpersonal Psychotherapy adapted for Ethiopia; CMDs: Common Mental Disorders; COVID-19: Coronavirus; CSQ: Client Satisfaction Questionnaire; WHODAS-2.0: World Health Organization Disability Assessment; SRQ: Self-Reporting Questionnaire; ANOVA: Analysis of Variance; SD: Standard Deviation; M: Mean; IPT: Interpersonal Psychotherapy; TTF: Treatment Tracking Form; HIV: Human Immunodeficiency Virus; TB: Tuberculosis; AAU-CHS: Addis Ababa University College of Health Sciences; IRB: Institutional Review Board.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s40359-021-00570-1.

Additional file 1. Instruments used for data collection.

Additional file 2. Treatment adherence and dose.

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Authors' contributions

AN led to conceiving the study, data collection, developed study design, data analysis, interpretation of the findings, drafted manuscript, and revised the manuscript for submission in consultation with co-authors. MAK contributed to data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, feedback and editing the manuscript. GM contributed to data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, feedback and editing the manuscript. DW was involved in data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, feedback and editing the manuscript. CP contributed to data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, feedback and editing the manuscript. MA led to conceiving the study, data analysis, commenting on all drafts of the manuscripts, interpretation of the findings, feedback and editing the manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analyzed during the present study are available from the corresponding author on reasonable request.

Declarations

Ethics Approval and Consent to Participate

Ethical clearance approval obtained from the Institutional Review Board of Addis Ababa University College of Health Sciences. The intervention was initiated after receiving written informed consent from all study participants. The collected data were kept anonymous and confidential throughout the whole study process by locking the computer using a secret password. The data documented on the hard copies were kept in locked box of the principal author's house. Protocol number: 045/17/Psych.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

Author details

[1]Department of Psychiatry, College of Health Sciences, School of Medicine, Addis Ababa University, Addis Ababa, Ethiopia. [2]Department of Psychology, College of Education and Behavioral Sciences, Wolaita Sodo University, Wolaita Sodo, Ethiopia. [3]Aklilu Lemma Institute of Pathobiology, Addis Ababa University, Addis Ababa, Ethiopia. [4]Department of Psychiatry, University of Toronto, Toronto, Canada.

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Publisher's Note

Appendix D 1: Sociodemographic characteristic of study one (English version)

1. Gender

Male ☐ Female ☐

2. Age _____

3. Religion

Orthodox Christian ☐ Protestant Christian ☐

Muslim ☐ Catholic Christian ☐

No religion ☐ Other ☐ (specify)_____

4. Ethnicity

Amhara ☐ Oromo ☐ Wolaita ☐ Gurage ☐

Hadiya ☐ Tigre ☐ Sidama ☐ Other ☐ Specify_____

5. Marital status

Single ☐ In a relation ☐ Married and living together ☐

Married but not living together ☐ Divorced ☐ Widowed ☐

5.1. If you have children, please write their number _____

6. Current place of living

In campus ☐ Off campus ☐ Both ☐

7. Origin

Rural ☐ Urban ☐

8. Department _____

9. Level of study year

First year ☐ Second year ☐ Third year ☐

Fourth year ☐ Fifth year ☐ Six Year ☐

10. Family history of mental illness

Yes ☐ No ☐

11. Do you use psycho-active drug/s and alcohol currently?

Yes ☐ No ☐

11.1. If yes, please tick or write its type

Alcohol ☐ Khat ☐

Cigarette ☐ Other ☐ Specify_____

11.2. How often do you use it per a week _____

Appendix D 2: Sociodemographic characteristic of study one (Amharic version)

1. ጾታ ወንድ ☐ ሴት ☐

2. ዕድሜ_____

3. ሀይማኖት

ኦርቶዶክስ ክርስቲያን ☐ ፕሮቴስታንት ክርስቲያን ☐

ሙስሊም ☐ ካቶሊክ ክርስቲያን ☐

ሀይማኖት የለኝም ☐ ሌላ ☐ ፃፍ/ፊ _____

4. ብሄር

አማራ ☐ ኦሮሞ ☐ ዎላይታ ☐ ጉራጌ ☐

ሀዲያ ☐ ትግሬ ☐ ሲዳማ ☐ ሌላ ☐ ፃፍ/ፊ _____

5. ትዳር

ያላገባ ☐ ያገባ እና አብሮ የሚኖር ☐

በጓደኝነት ☐ ያገባ እና አብሮ የማይኖር ☐

የተፋታ ☐ ሚስት/ባል የሞተበት ☐

6. በአሁን ጊዜ የመኖሪያ ቦታ

በዩኒቨርሲቲ ውስጥ ☐

ከዩኒቨርሲቲ ውጭ ☐

በሁለቱም ቦታ ☐

7. የእድገት ቦታ

ገጠር ☐ ከተማ ☐

8. የትምህርት ክፍል_____

9. የትምህርት አመት

አንደኛ አመት ☐ አራተኛ አመት ☐

ሁለተኛ አመት ☐ አምስተኛ አመት ☐

ሶስተኛ አመት ☐ ስድስተኛ አመት ☐

10. ከቤተሰብ ውስጥ የአእምሮ ህመምተኛ ሰው አለ/ነበር?

አዎ ☐ የለም ☐

11. በአሁን ጊዜ አደንዛዥ እና አነቃቂ እጾች እና አልኮል መጠጦችን ትጠቀማለህ/ሽ?

አዎ ☐ አልጠቀምም ☐

11.1. መልስህ/ሽ **አዎ** ከሆነ የምትጠቀመውን/ሚ አይነት ጥቀስ/ሽ ወይም ይፃፉ

አልኮል ☐ ጫት ☐ ሲጋራ ☐ ኃላ ☐ ቀስ/ሽ_____

11.2. በሳምንት ምን ያህል ጊዜ ከላይ የተጠቀሰውን ትጠቀማለህ/ሽ? _____

Appendix E 1: Self-Reported Questionnaire (English version)

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

Appendix E 2: Self-Reported Questionnaire (Amharic version)

ተ.ቁ	ጥያቄ	መልስ	
		አዎ	አይ
1	ራስምታት ብዙ ጊዜ ያምሀል/ሻ?		
2	የምግብ ፍላጎትህ/ሽ ቀንሷል?		
3	የእንቅልፍ ችግር አለብህ/ሽ?		
4	በቀላሉ ፍርሀት ፍርሀት ይልሀል/ሻ?		
5	እጆችህ/ሽ ይንቀጠቀጣሉ?		
6	መረበሽ፣ መጠበብ ወይም መጨነቅ ይበዛብሀል/ሻ?		
7	ምግብ ከበላህ/ሽ ቦኋላ ሆድህን/ሽ ይከብድሀል/ሻ?		
8	በትክክል ማሰብ ይቸግርሀል/ሻ?		
9	የደስታ ማጣት ስሜት አለብህ/ሽ?		
10	ያለበቂ ምክንያት እምባ እምባ ይልሀል/ሻ?		
11	በየቀኑ በምትሰራቸው/ሪ ስራዎች መደሰት ይቸግርሀል/ሻ?		
12	በእለተ ተለት ተግባርህ/ሽ ውሳኔ መወሰን ይቸግርሀል/ሻ?		
13	የእለት ተግባርህን/ሽ ለመፈጸም ያስቸግርሀል/ሻ?		
14	በአካባቢህ ጠቃሚ ተሳትፎ ማድረግ ያስቸግርሀል/ሻ?		
15	በአንዳንድ ነገሮች ላይ የነበረህ/ሽ ፍላጎት ወይም ስሜት ጠፍቷል?		
16	የማልጠቅም ሰው ነኝ ብለህ/ሽ አስበሀል/ሻ?		
17	ህይወትህን/ሽ አስጠልቶህ/ሽ ሞቼ ባረፍኩት ያልክበት/ሽ ጊዜ አለ?		
18	ሁል ግዜ ድካም ይሰማሀል/ሻ?		
19	ሆድህ/ሽ ይረበሻል?		
20	በቀላሉ ይደክምሀል/ሻ?		

Appendix F 1: Need for professional mental healthcare (English version)

1. Was there a time when you thought you should see a counselor, psychologist, doctor other health professionals or seek any other help for your mental distress, but you didn't go in the past three months? Yes ☐ No ☐

1.1. If your answer is "No" for question 1 from whom did you receive mental health treatment?

Doctors	☐	University Counselors	☐
Traditional healers	☐	Family	☐
Friends	☐	Relatives	☐
Religious leaders	☐	Didn't receive	☐
Student clinic nurses	☐	Other ☐	(specify)_____

2. In your opinion, from where do you prefer to take psychological treatment?

Ottona Hospital	☐	University Counseling Office	☐
University Students' Clinic	☐	Other ☐	specify_____

3. What type of psychological treatment approach do you prefer?

Individual Counseling	☐	Group Counseling	☐
Other	☐	Specify_____	

4. How many total sessions of psychological treatment you need to take?

4 ☐ 6 ☐ 7 ☐ 8 ☐ Other ☐ Specify_____

5. How many session/s per week do you need for psychological treatment?

1 ☐ 2 ☐ 3 ☐ 4 ☐ Other ☐ Specify_____

6. What do you suggest about the length of a session?

20-30 minutes ☐ 30-40 minutes ☐ 40-60 minutes ☐ Other ☐ Specify_____

Appendix F 2: Need for professional mental healthcare (Amharic version)

1. የአዕምሮ መረበሽን/ድባቴን ወይም ጭንቀትን ከዶክተር፣ ከስነ-ልቦና ወይም ከሌላ የጤና ባለሙያ ጋር መታየት አለብኝ ብለህ/ሽ ነገር ግን ህክምናውን ያላገኘህበት/ሽ ወቅት ነበር? አዎ ☐ የለም ☐

1.1. ለጥያቄ ተራ ቁጥር 1 መልስህ/ሽ **የለም** ከሆነ ህክምና ከማን አገኘህ/ሽ?

ከዶክተሮች/ሳይካትሪስቶች ☐ ከዩኒቨርሲቲ ስነ-ልቦና ባለሙያዎች ☐

ከባህላዊ ሀኪሞች ☐ ከቤተሰብ ☐

ከጓደኞች ☐ ከዘመድ ☐

ከሀይማኖት አባቶች ☐ አላገኘሁም ☐

ከተማሪዎች ክሊኒክ ነርሶች ☐ ከሌላ ☐ ጥቀስ/ሽ_____

2. በአንተ/ቺ አስተሳሰብ የስነ-ልቦና ህክምና በየት ቦታ ብትታከም/ሚ ትመርጣለህ/ጫሽ?

በኦቶና ሆስፒታል ☐ በዩኒቨርሲቲ የምክክር/ካውንስሊንግ አገልግሎት ቢሮ ☐

በተማሪዎች ክሊኒክ ☐ በሌላ ቦታ ☐ ጥቀስ/ሽ_____

3. በምን መልኩ የስነ-ልቦና ህክምና መታከም ትፈልጋለህ/ሽ?

በግል ☐ በጋራ ☐ ሌላ ☐ ጥቀስ/ሽ_____

4. በአጠቃላይ ለምን ያህል ጊዜ የስነ-ልቦና ህክምና መታከም ትፈልጋለህ/ሽ?

4 ጊዜ ☐ 6 ጊዜ ☐ 7 ጊዜ ☐ 8 ጊዜ ☐ላ ☐ቀስ/ሽ_____

5. በሳምንት ስንት ጊዜ የስነ-ልቦና ህክምና መታከም ትፈልጋለህ/ሽ?

1 ☐ 2 ☐3 ☐ 4 ☐ ☐ጥቀስ/ሽ_____

6. የአንድ ጊዜ የስነ-ልቦና ህክምና ለምን ያህል ደቂቃ መቆየት አለበት ትላለህ/ሽ?

20-30 ደቂቃ ☐30-40 ደቂቃ ☐0-60 ደቂቃ ☐ሌላ ☐ስ/ሽ____

Appendix G 1: Barriers to Access to Care Evaluation (English version)

Have any of these issues ever stopped, delayed or discouraged you from getting, or continuing with, professional care for a mental health problem? Please tick your answer	No	
	Yes	

Please circle one number on each row to indicate the answer that best suits you. For 'not applicable' e.g. if it is a question about children and you do not have children, please cross the Not applicable box.

	Issue	This has stopped, delayed or discouraged me NOT AT ALL	This has stopped, delayed or discouraged me A LITTLE	This has stopped, delayed or discouraged me QUITE A LOT	This has stopped, delayed or discouraged me A LOT
1.	Being unsure where to go to get professional care	0	1	2	3
2.	Wanting to solve the problem on my own	0	1	2	3
3.	Concern that I might be seen as weak for having a mental health problem	0	1	2	3
4.	Fear of being put in hospital against my will	0	1	2	3
5.	Concern that it might harm my chances when applying for jobs **Not applicable** □	0	1	2	3
6.	Problems with transport or travelling to appointments	0	1	2	3
7.	Thinking the problem would get better by itself	0	1	2	3
8.	Concern about what my family might think, say, do or feel	0	1	2	3
9.	Feeling embarrassed or ashamed	0	1	2	3
10.	Preferring to get alternative forms of care (e.g. traditional / religious healing or alternative / complementary therapies)	0	1	2	3
11.	Not being able to afford the financial costs involved	0	1	2	3
12.	Concern that I might be seen as 'crazy'	0	1	2	3
13.	Thinking that professional care probably would not help	0	1	2	3
14.	Concern that I might be seen as a bad parent. **Not applicable** □	0	1	2	3
15.	Professionals from my own ethnic or cultural group not being available	0	1	2	3
16.	Being too unwell to ask for help	0	1	2	3
17.	Concern that people I know might find out	0	1	2	3
18.	Dislike of talking about my feelings, emotions or thoughts	0	1	2	3
19.	Concern that people might not take me seriously if they found	0	1	2	3

	out I was having professional care				
20.	Concerns about the treatments available (e.g. medication side effects)	0	1	2	3
21	Not wanting a mental health problem to be on my medical records	0	1	2	3
22.	Having had previous bad experiences with professional care for mental health	0	1	2	3
23.	Preferring to get help from family or friends	0	1	2	3
24.	Concern that my children may be taken into care or that I may lose access or custody without my agreement **Not applicable** □	0	1	2	3
25.	Thinking I did not have a problem	0	1	2	3
26.	Concern about what my friends might think, say or do	0	1	2	3
27.	Difficulty taking time off education	0	1	2	3
28.	Concern about what students might think, say or do **Not applicable** □	0	1	2	3
29.	Having problems with childcare while I receive professional care **Not applicable** □	0	1	2	3
30.	Having no one who could help me get professional care	0	1	2	3

Appendix G 2: Barriers to Access to Care Evaluation (Amharic version)

ላጋጠመህ/ሽ የአእምሮ ህመም ሙያዊ ህክምና እንዳታገኝ/ኚ ወይም እንዳትቀጥል/ዪ ያደረጉህ/ሽ፣ያዘገዩህ/ሽ ወይም እንዳትበረታታ/ቺ ያደረጉህ/ሽ ምክንያቶች ነበሩ? መልሱን በተሰጠው ቦታ የልክ ምልክት (√) አድርግ/ጊ።	አዎ	
	የሉም	

ከላይ ለተጠቀሰው ጥያቄ መልስህ/ሽ **አዎ** ከሆነ እባክህ/ሽ ቀጥለው ከተዘረዘሩት ምክንያቶች ለኔ ይስማማኛል የምትለውን/ይ ትክክለኛ መልስ ወደ ጎን ከተፃፉት ቁጥሮች አንዱን አክብብ/ቢ። እንዲሁም ለማይመለከትህ/ሽ ጥያቄዎች ለምሳሌ ጥያቄው ልጆችን በተመለከተና አንተ/ቺ ደግሞ ልጆች ከሌለህ/ሽ በተሰጠው የሳጥን ቦታ ውስጥ የ "**X**" ምልክት አድርግ/ጊ።

ተ.ቁ	መንሴዎች	ይህ ነገር ሙያዊ ህክምና እንዳቆም፣ ለማግኘት እንድዘገይ ወይም እንዳልበረታታ አርጎኝ ነበር።			
		በፍፁም	**በጥቂቱ**	**በመጠኑ**	**በጣም**
1	ሙያዊ ድጋፍ/ህክምና የት እንደማገኝ እርግጠኛ ስላልነበርኩ።	0	1	2	3
2	ችግሬን በራሴ ለመፍታት ፈልጌ ስለነበር።	0	1	2	3
3	ሰዎች የአእምሮ ችግር እንዳለብኝ ካወቁ በነሱ ዘንድ ደካማ ተደርጌ እታያለሁ ብዬ አስቤ ስለነበር።	0	1	2	3
4	ያለኔ ፍቃድ ሆስፒታል ያስገቡኛል ብዬ ፈርቼ ስለነበር።	0	1	2	3
5	የባለሙያ እርዳታ መፈለጌን ሰዎች ሲያውቁ ሥራ የማግኘት እድሌ ይበላሻል ብዬ ሰግቼ ስለነበር። **አይመለከተኝም** ☐	0	1	2	3
6	የህክምና ቀጠሮ ለመከታተል የትራንስፖርት ወይም የመጓጓዣ ችግር በመኖሩ።	0	1	2	3
7	ችግሩ በራሱ የሚሻሻል ስለመሰለኝ።	0	1	2	3
8	ብታከም ቤተሰቦቼ ምን ሊያስቡ፣ ሊሉ፣ ሊያደርጉ ወይም ሊሰማቸው እንደሚችሉ ስላሳሰበኝ።	0	1	2	3
9	የህክምና እርዳታ መፈለግ አሳፍሮኝ ወይም አሸማቆኝ ነበር።	0	1	2	3
10	ከሌሎች አማራጭ ህክምናዎች ለምሳሌ ባህላዊ ህክምና ወይም ከሀይማኖታዊ ህክምናዎች ወይም ከሌላ/ተደጋጋፊ ህክምናዎች እርዳታ ማግኘት በመፈለጌ።	0	1	2	3
11	ለህክምናው የሚያስፈልገውን ወጪ መክፈል ባለመቻል።	0	1	2	3
12	በሰዎች ዘንድ እብድ ተደርጌ እታያለሁ የሚለው ስላሳሰበኝ።	0	1	2	3
13	ሙያዊ ህክምና ማግኘት ሊጠቅም አይችልም ብዬ በማሰብ።	0	1	2	3
14	መጥፎ ወላጅ መስዬ እታያለሁ የሚለው አሳስቦኝ። **አይመለከተኝም** ☐	0	1	2	3
15	ከእኔ ብሄረሰብ ወይም ባህል ባለሙያ ባለመኖሩ።	0	1	2	3
16	እርዳታ ለመጠየቅ በጣም ፍቃደኛ ባለመሆኔ።	0	1	2	3
17	ህክምናዉን ስታከም ሰዎች ያውቁብኛል ብዬ በመስጋት።	0	1	2	3
18	ስሜቴን ወይም ሀሳቤን ለባለሙያ መናገር ስለማልወድ።	0	1	2	3

19	ሰዎች የባለሙያ እንክብካቤ እንደማገኝ ካወቁ ዋጋ እንደሌለኝ አርገው ያዩኛል የሚለው ስላሳሰበኝ።	0	1	2	3
20	ያለው ህክምና ሁኔታ አሳስቦኝ ነበር ለምሳሌ የጎንዮሽ ጉዳት እንዳይኖረው።	0	1	2	3
21	የህክምና ፋይሌ ላይ የአእምሮ ህመምተኛ እንደሆንኩ ሰነድ እንዳይኖር ስለፈለኩ።	0	1	2	3
22	ከዚህ በፊት የአእምሮ ህክምና ስወስድ መጥፎ ነገር ስለደረሰብኝ።	0	1	2	3
23	ድጋፉን/ህክምናውን ከቤተሰብ ወይም ከጓደኞቼ ለማግኘት ስለመረጥኩ።	0	1	2	3
24	ምናልባት ያለእኔ ፍቃድ ልጆቼ ወደ እንክብካቤ ቦታ ይወሰዳሉ ወይም ልጆቼን የማሳደግ መብት ያሳጣኛል የሚለው ስላሳሰበኝ። **አይመለከተኝም** ☐	0	1	2	3
25	የአእምሮ ችግር የለብኝም ብዬ ስላሰብኩ።	0	1	2	3
26	ብታከም ጓደኞቼ ምን ሊያስቡ፣ ሊሉ ወይም ሊያደርጉ ይችላሉ የሚለው ስላሳሰበኝ።	0	1	2	3
27	ህክምናው የትምህርት ጊዜዬን ይወስዳል ብዬ በማሰቤ።	0	1	2	3
28	ብታከም ተማሪዎች ምን ሊያስቡ፣ ሊሉ ወይም ሊያደርጉ ይችላሉ የሚለው ስላሳሰበኝ።	0	1	2	3
29	ህክምናውን በምታከምበት ጊዜ ልጆቼን ለመንከባከብ ችግር በመኖሩ። **አይመለከተኝም** ☐	0	1	2	3
30	የባለሙያ እንክብካቤ እንዳገኝ ከጎኔ ሆኖ ሊረዳኝ የሚችል ሰው ባለመኖሩ።	0	1	2	3

Appendix H 1: Explanatory models of mental distress (English version)

Thank you for agreeing to talk about your health. I would like to ask you some questions about your health and how it affects you. I would like to stress that all answers will be strictly confidential.

1. What are / were your problems?

Problem 1:_____

Problem 2:_____

Problem 3:_____

Problem 4:_____

Problem 5:_____

2. What do you call this / these problem(s)? Probe: If you had to give them names what would they be?

Name 1:_____

Name 2:_____

Name 3:_____

3. When did you first notice < specify identified problem>? Probe: how long ago was it, when did it start?

Onset:_____

_____

4. What are the perceived causes for experiencing this problem?

Reason 1:_____

Reason 2:_____

Reason 3:_____

5. How serious are your problems? < If there are several complaints probe separately for each of them >

Severity of problem 1:_____

Severity of problem 2:_____

Severity of problem 3:_____

6. What do you most fear about these problems? < Are you frightened and if so >

_____

_____

7. Why did you come looking for help at this particular time? Probe: Had it got worse? Were you afraid? Did others advise you?

Reasons wanted help now:_____

_____

_____

8. What are the main difficulties your problems have caused you?

_____

_____

9. What parts of your body are most affected by your problems?

Part of body 1:_____

Part of body 2:_____

Part of body 3:_____

10. How and to what extent have you been affected emotionally by your problems? < For an example were you more upset, worried or unhappy etc. and to what extent?>

_____

_____

11. Have these problems affected your social life? < Probe: how and to what extent? >

_____

_____

12. Have these problems affected your family life? < Probe: how and to what extent? >

_____

_____

13. Have these problems affected how you get on with people in general? < Probe: for example getting more irritable/angry/ less friendly etc. and to what extent?>

_____

_____

14. Has your work (education) / job been affected? < Probe: how and to what extent? >

_____

_____

15. Have you asked for advice from anyone else about your problems? < Probe: friends, family, alternative forms of therapists including traditional healers, religious healers >

_____

_____

16. How much approximately have you spent for treatment? < Probe: estimated direct cost for the illness > Expense _____ Birr

17. Do you treat yourself for the problem? If 'Yes' how?

Self-help 1:_____

Self-help 2:_____

Self-help 3:_____

18. Are you taking any medication now? If 'Yes' mention the medication name.

Medicine 1:_____

Medicine 2:_____

Medicine 3:_____

19. Are you taking any other cures or remedies? <Probe: herbal medicine/homeopathy etc>

Traditional treatment 1:_____

Traditional treatment 2:_____

Traditional treatment 3:_____

Appendix H 2: Explanatory models of mental distress (Amharic version)

መመሪያ: የተከበራችሁ የዚህ ቃለ-መጠይቅ ተሳታፊዎች ይህኛው ክፍል ትኩረት ያደረገው አንተ/ቺ ስለ አእምሮ ህመምህ/ሽ ምልክቶች፤ መንስኤዎች፣ ህመሙ የጀመረበትን ወቅት፤የህመሙ ክብደት፤ ህመሙን የምትቋቋምበት ዘዴዎች፤ ህመሙ ያስከተለውን ተፅኖ እና የህክምና ምርጫህን/ሽ ለይቶ ለማዎቅ የተዘጋጀ መጠይቅ ነው።

1. ስላለህ/ሺ ወቅታዊ ሁኔታ ልትነግረኝ/ሪ ትችላለህ/ሽ? ምን ዓይነት የጤና ችግሮች/የህምም ምልክቶች ነበረህ/ሺ በአሁኑ ሰዓት?

የጤና ችግር 1.....

የጤና ችግር 2 ……

የጤና ችግር 3 ……

የጤና ችግር 4 ……

የጤና ችግር 5 ……

2. ይሄን ችግር ምን ብለህ/ሺ ትጠራዋለህ/ሺ? ስም ብትሰጠው/ጪ ምን ብለህ/ሽ ትጠራዋለህ/ሽ?

ስም 1.....

ስም 2 ……

ስም 3 ……

3. ለመጀመሪያ ጊዜ ችግሩን (የተለየውን ችግር ጠርተህ) ያስተዋከው/ሺ መቼ ነው? ስንት ጊዜ ሆኖታል? መቼ ነው የጀመረው?

ችግሩ የተከሰተበት ጊዜ.....

4.የችግሩ ምክንያት ባንተ/ቺ ግምት ምን ይመስልሀል/ሻ?

ምክንያት 1.....

ምክንያት 2 ……

ምክንያት 3 ……

5.ችግሩ ምን ያህል ከባድ ነው? (ብዙ ችግሮች ካሉ ሁሉንም ለየብቻቸው እንዲያብራሩ ይጠይቁ)

ከባድ ችግር 1 .....

ከባድ ችግር 2 .....

ከባድ ችግር 3 ……..

6. ከነዚህ ችግሮች በጣም የሚያስፈራህ/ሽ ጉዳይ ምንድን ነው? ሌላ ተጨማሪ ፍርሃት አለህ/ሽ?

በጣም የሚያስፈራ1.....

7. አሁን ባለህበት/ሽ ጊዜ ለችግሮች መፍትሄ ከፈለክ/ሽ፤ ለምን በዚህ ጊዜ መፍትሄ ፈለክ/ሽ፤ችግርህ/ሽ ተባባሰ? ፍርሃት ኖሮህ/ሽ? በሌሎች ሰዎች ምክር ተለግሶልህ/ሽ ነበር?

የህክምና እርዳታ የተፈለገበት ምክንያት.....

8. የጤና ችግርህ/ሽ ካስከተለብህ/ሽ እክሎች ዋነኞቹ ምን ምን ናቸው?

.....

.....

9. በጤና ችግርህ/ሽ በጣም የተጠቃው የሰውነት አካል የትኛው ነው?

የሰውነት አካል 1.....

የሰውነት አካል 2.....

የሰውነት አካል 3.....

10. የጤና ችግርህ/ሽ በስሜትህ/ሽ ላይ እንዴትና በምን ያህል ክብደት ጎድቶህል/ሻ? ለምሳሌ በጣም ትበሳጭ/ጪ ነበር፣ ትጨነቅ/ቂ ነበር፣ ምን ያህል?

.....

.....

11. እነዚህ የጤና ችግሮች ማህበራዊ ኑሮህን/ሽ አሰናክለዋል? እንዴትና ምን ያህል?

.....

.....

12. እነዚህ ችግሮች የቤተሰብ ኑሮህን/ሽ አሰናክለዋል? እንዴትና ምን ያህል?

.....

.....

13. እነዚህ ችግሮች በአጠቃላይ ከሰዎች ጋር ያለህን/ሽ ግንኙነት አሰናክለዋል? ለምሳሌ በቀላሉ የመነጫነጭ/የመቆጣት፣ንዴት/አለመግባባት/ወዘተ ምን ያህል?

.....

.....

14. በችግርህ/ሽ ምክንያት ትምህርትህ/ሽ ተበድሎ ነበር? እንዴትና ምን ያህል?

.....

.....

15. ስለችግርህ/ሽ ከሌሎች ሰዎች ምክር ጠይቀህ/ሽ ታውቃለህ/ሽ? (ከጓደኞች፣ ቤተሰብ፣ አማራጭ የህክምና ባለሙያዎች ፣የባህላዊ ሃኪም፣ ቀሳውስት፣ ካህናት)

.....

.....

16. ለህክምና በአጠቃላይ በግምት ምን ያህል ገንዘብ አውጥተሀል/ሻ? ቀጥታ ለህክምና ያወጣህውን/ሽ ገንዘብ ገምት/ቺ

ወጪ .....

17. ችግርህን/ሽ በቀጥታ ራስህ/ሽ ልታክም/ሚ ሞክረሀል/ሻ? አዎ ከሆነ መልስህ/እንዴት?

በራስ ማከም ዘዴ 1.....

በራስ ማከም ዘዴ 2.....

በራስ ማከም ዘዴ 3.....

18. በዚህ ጊዜ የምትወስደው/ጂ መድሃኒት አለ?

መድሀኒት 1.....

መድሀኒት 2.....

መድሀኒት 2.....

19. ከዚህ ሌላ ችግሩን ለመቅረፍ የምትወስደው/ጂ መድሃኒት አለ?/የባህል፣የዕፅዋት

ባህላዊ ህክምና 1.....

ባህላዊ ህክምና 2.....

ባህላዊ ህክምና 3.....

Appendix I 1: Feasibility of IPT-E measuring questions (English version)

1. How many students consented to participate in the IPT-E intervention?
2. What is the number of students completed the intervention?
3. What is the attrition rate of the intervention?
4. What are the mean and modal numbers of session of the intervention?

Appendix I 2: Feasibility of Interpersonal Psychotherapy adapted for Ethiopia measuring questions (Amharic version)

1. ምን ያህል ተሳታፊዎች በንግግር ህክምና ውስጥ ለመሳተፍ ተስማሙ?
2. ምን ያህል ተሳታፊዎች የንግግር ህክምናውን አጠናቀቁ?
3. ምን ያህል ተሳታፊዎች የንግግር ህክምናውን አቋረጡ?
4. በአማካኝ ምን ያህል ጊዜ በንግግር ህክምና ውስጥ ተሳተፉ?

Appendix J 1: Client Satisfaction Questionnaire (English version)

No	Question	Response			
1	How would you rate the quality of service you have received?	Excellent (251)	Good (3)	Fair [2]	Poor [1]
2	Did you get the kind of service you wanted?	No, definitely [1]	No, not really [2]	Yes, generally (3)	Yes, definitely [4]
3	To what extent has our program met your needs?	Almost all of my needs have been met [4]	Most of my needs have been met (3)	Only a few of my needs have been met [2]	None of my needs have been met [1]
4	If a friend were in need of similar help, would you recommend our program to him or her?	No, definitely not [1]	No, I don't think so [2]	Yes, I think so (3)	Yes, definitely [4]
5	How satisfied are you with the amount of help you have received?	Quite dissatisfied [1]	Indifferent or Mildly dissatisfied [2]	Mostly satisfied (3)	Very satisfied [4]
6	Have the services you received helped you to deal more effectively with your problems?	Yes, they helped a great deal [4]	Yes, they helped (3)	No, they really didn't help [2]	No, they seemed to make things worse [1]
7	In an overall, general sense, how satisfied are you with the service you have received?	Very satisfied [4]	Mostly satisfied (3)	Indifferent or mildly dissatisfied [2]	Quite dissatisfied [1]
8	If you were to seek help again, would you come back to our program?	No, definitely not [1]	No, I don't think So [2]	Yes, I think so (3)	Yes, definitely [4]

Appendix J 2: Client Satisfaction Questionnaire (Amharic version)

ተ.ቁ	ጥያቄ	የምልስ አማራጮች			
1	የተሰጠህ/ሽን የንግግር ህክምና ጥራት እንዴት ትለካዋለህ/ሽ?	እጅግ በጣም ጥሩ [4]	ጥሩ (3)	መካከለኛ [2]	ደካማ [1]
2	የፈለከውን/ው አይነት የህክምና አገልግሎት አገኘህ/ሽ?	በፍጹም [1]	አይ [2]	አዎ በአጠቃላይ (3)	አዎ በትክክል [4]
3	ምን ያህል የንግግር ህክምናው ፍላጎትህን/ሽ አሟላልህ/ሽ?	ሁሉም ፍላጎቶቼ ተሟልተዋል [4]	ኣብዛኛው ፍላጎቶቼ ተማልተዋል (3)	ጥቂት ፍላጎቶቼ ተማልተዋል [2]	አንድም ፍላጎቴ አልተሟላም [1]
4	ጓደኛህ/ሽ ተመሳሳይ ህክምና ቢፈልግ ወደ እዚህ ይህን ህክምና እንዲያኝ ትልከዋልህ/ሽ?	በፍጹም [1]	አይመስለኝም [2]	አዎ ይመስልኛል (3)	አዎ በትክክል [4]
5	ባተደረገልህ/ሽ ህክምና ምን ያህል እረክተሀል/ሽ?	በጭራሽ አረካሁም [1]	የተወሰነ አረካሁም [2]	በአብዛኛው እርክቻለሁ (3)	በጣም እርክቻለሁ [4]
6	የተደረገልህ/ሽ ህክምና ህመምህን/ሽ በተሻለ ሁኔታ ለማከም እረድቶሀል/ሻ?	አዎ በጣም እረድቶኛል [4]	አዎ እረድቶኛል (3)	አይ አረዳኝም [2]	አይ አንደውም ያባባሰብኝ ይመስለኛል [1]
7	በአጠቃላይ ባተደረገልህ/ሽ ህክምና ምን ያህል እረክተሀል/ሽ?	በጣም እርክቻለሁ [4]	በአብዛኛው እርክቻለሁ (3)	የተወሰነ አረካሁም [2]	በጭራሽ አረካሁም [1]
8	በድጋሜ ህክምና ቢያስፈልግህ/ሽ ተመልሰህ/ሽ ትመጣለህ/ሽ?	በፍጹም [1]	አይመስለኝም [2]	አዎ ይመስልኛል (3)	አዎ በትክክል [4]

Appendix K 1: Topic guide for qualitatively measuring satisfaction of Interpersonal Psychotherapy adapted for Ethiopia (English version)

1. How would you rate the quality of service you have received?
2. Did you get the kind of service you wanted?
3. To what extent has our program met your needs?
4. If a friend were in need of similar help, would you recommend our program to him or her?
5. How satisfied are you with the amount of help you have received?
6. Have the services you received helped you to deal more effectively with your problems?
7. In an overall, general sense, how satisfied are you with the service you have received?
8. If you were to seek help again, would you come back to our program?

Appendix K 2: Topic guide for qualitatively measuring satisfaction of Interpersonal Psychotherapy adapted for Ethiopia (Amharic version)

1. የተሰጠህ/ሽ የንግግር ህክምና ጥራት እንዴት ትለካዋለህ/ሽ?
2. የፈለከውን/ሽ አይነት የህክምና አገልግሎት አገኘህ/ሽ?
3. ምን ያህል የንግግር ህክምናው ፍላጎትህን/ሽ አሟላልህ/ሽ?
4. ጓደኛህ/ሽ ተመሳሳይ ህክምና ቢፈልግ ወደ እዚህ ይህን ህክምና እንዲያኝ ትልከዋልህ/ሽ?
5. በተደረገልህ/ሽ ህክምና ምን ያህል እረክተሀል/ሽ?
6. የተደረገልህ/ሽ ህክምና ህመምህን/ሽ በተሻለ ሁኔታ ለማከም እረድቶሀል/ሻ?
7. በአጠቃላይ በተደረገልህ/ሽ ህክምና ምን ያህል እረክተሀል/ሻ?
8. በድጋሜ ህክምና ቢያስፈልግህ/ሽ ተመልሰህ/ሽ ትመጣለህ/ሽ?

Appendix L 1: World Health Organization-Disability Assessment Scale (English version)

1. None 2. Mild 3. Moderate

4. Severe 5. Extreme/Cannot Do

	In the past 30 days, how much difficulty did you have in:	None	Mild	Moderate	Severe	Extreme
1	Standing for long periods such as 30 minute?	1	2	3	4	5
2	Taking care of your work responsibilities?	1	2	3	4	5
3	Learning a new task, for example, learning how to get to a new place?	1	2	3	4	5
4	How much of a problem did you have joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?	1	2	3	4	5
5	How much have you been emotionally affected by your health problems?	1	2	3	4	5
6	Concentrating on doing something for ten minutes?	1	2	3	4	5
7	Walking a long distance such as a kilometer [or equivalent]?	1	2	3	4	5
8	Washing your whole body?	1	2	3	4	5
9	Getting dressed?	1	2	3	4	5
10	Dealing with people you do not know?	1	2	3	4	5
11	Maintaining a friendship?	1	2	3	4	5
12	Your day-to-day work?	1	2	3	4	5

H1	Overall, in the past 30 days, how many days were these difficulties present?	Record number of days ____
H2	In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?	Record number of days ____
H3	In the past 30 days, not counting the days that you were totally unable, for how many days did you cut back or reduce your usual activities or work because of any health condition?	Record number of days ____

Appendix L 2: World Health Organization-Disability Assessment Scale (Amharic version)

1. ምንም ችግር የለም 2. አነስተኛ ችግር 3. መካከለኛ ችግር

4. ከፍተኛ ችግር 5. በጣም ከፍተኛ ችግር ወይም ፈጽሞ መስራት አለመቻል

ተ.ቁ	ጥያቄ	ምንም	ጥቂት	በመጠኑ	በብዛት	በጣም ከፍተኛ
1	ረዘም ላለ ጊዜ መቆም ምን ያህል ይቸግርህ/ሽ ነበር? ለምሳሌ ግማሽ ሰዓት	1	2	3	4	5
2	የስራ ሀላፊነቶችን መወጣት ምን ያህል ይቸግርህ/ሽ ነበር?	1	2	3	4	5
3	አዲስ ነገር ወይም ሥራ ለመማር ትቸገር/ሪ ነበር? (ለምሳሌ የሞባይል አጠቃቀም ወዘተ...)	1	2	3	4	5
4	በማህበራዊ እንቅስቃሴ ውስጥ (ለምሳሌ ዓመት በዓል..ወዘተ) ልክ እንደ ሌላው መሳተፍ ምን ያህል ትቸገር/ሪ ነበር?	1	2	3	4	5
5	በጤናህ/ሽ ችግር ምክንያት መንፈስህ/ሽ ምን ያህል ተረብሿል?	1	2	3	4	5
6	በምትሰራው/ሪ ሥራ ላይ ሀሳብህን/ሽ ለጥቂት ጊዜ (ለ 10ደቂቃ) ያህል መሰብሰብ ይቸግርህ/ሽ ነበር?	1	2	3	4	5
7	ረዘም ያለ ርቀት ለመጓዝ ምን ያህል ይቸግርህ/ሽ ነበር? ለምሳሌ የሩብ ሰአት መንገድ (1ኪ.ሜትር)	1	2	3	4	5
8	ሰውነትህን/ሽ መታጠብ ምን ያህል ይቸግርህ/ሽ ነበር?	1	2	3	4	5
9	ልብስህን/ሽ ለመልበስ ምን ያህል ይቸግርህ/ሽ ነበር?	1	2	3	4	5
10	ከምታቃቸው ሰዎች ጋር ተግባብቶ ጉዳይ መፈጸም ምን ያህል ይቸግርህ/ሽ ነበር?	1	2	3	4	5
11	በጓደኝነት መቆየት ምን ያህል ይቸግርህ/ሽ ነበር?	1	2	3	4	5
12	ባለፉት 30 ቀናት የዕለት ተዕለት ሥራህን/ሽ ወይም ትምህርትዎን ለማከናወን ምን ያህል ይቸግርህ/ሽ ነበር?					
H1	በአጠቃላይ ባለፉት 30 ቀናት ውስት እነዚህ ችግሮች ለምን ያህል ቀናት ነበሩ?			የቀናት ብዛት ግለጽ/ጪ_____		
H2	ባለፉት 30 ቀናት ዉስጥ፣ በማንኛዉም የጤና ችግር ምክንያት፣ የተለመደ ስራ ወይም እንቅስቃሴዎችን ሙሉ በሙሉ ማድረግ ያልቻልከው/ሺ ለምን ያህል ቀናት ነበር?			የቀናት ብዛት ግለጽ/ጪ_____		
H3	ባለፉት 30 ቀናት ዉስጥ፣ በማንኛዉም የጤና ችግር ምክንያት፣ ሙሉ በሙሉ ምንም ስራ መስራት ያልቻልክባቸውን/ሽ ቀናት ሳይጨምር፣ የተለመደ ስራ ወይም እንቅስቃሴዎችን ለመቀነስ የተገደድክባቸው/ሽ ምን ያህል ቀናት ነበሩ?			የቀናት ብዛት ግለጽ/ጪ_____		

Appendix M 1: Screening Form for Patients with Common Mental Disorders used in Interpersonal Psychotherapy adapted for Ethiopia (English version)

Reminder: Complete this form and if positive for CMD please continue Treatment Tracking Form

Counseling office name: _____
Counsellor name:_____

Date:_____ Chart Number: _____
Patient's cell phone number _____ AGE: ____ Sex: Female ☐ Male ☐
Marital status: Married ☐ Single ☐ Divorced ☐ In relationship ☐ Other_____
# of children if: _____# People living in the household: _____Work Type: Student ☐

1. In the last month, for how many days were you totally unable to carry out your usual activities at home or at work/education, or both, because of any health condition? Record number of days _____
2. In the last month, for how many days did it feel very difficult to carry out your usual activities at home or at work, or both, because of any health condition? Record number of days _____

3. In the last month how often have you:	Not sure	Several days	Over half the days	Nearly every day	Never
i. felt sad, miserable, down or hopeless?					
ii. felt little pleasure or interest in doing things?					
iii. felt nervous/anxious?					
iv. not enough energy, that everything is an effort					
v. felt so restless it is hard to sit still ?					
vi. had trouble concentrating on conversations/reading/TV etc					
vii. felt really bad about yourself, that you are a failure, or that you have let your family down?					
viii. felt you could not stop or control worrying?					
ix. had trouble sleeping?					
x. felt afraid as if something awful might happen without a reason?					
4.In the last month, how many days have you had more than 5 physical symptoms (e.g. aches and pains, palpitations, burning/numbness/crawling sensations)?					

5.In the last month, have you had:
   i. Ideas or thoughts of suicide? Yes ☐ No ☐
   ii. Plans of suicide? Yes ☐ No ☐
   iii. Past attempts (in your life) Yes ☐ No ☐

6. In the last month have you had:
   i. Ideas or thoughts of harming others Yes ☐ No ☐
   ii. Ever hurt anyone physically in the past on purpose? Yes ☐ No ☐

(If at risk of harming others contact the supervisor)

Screening indicates treatment is advised? Yes ☐ No ☐
PATIENT AGREES to treatment Yes ☐ No ☐
If patient declines treatment or is unable to attend PLEASE STATE WHY:

Appendix M 2: Screening Form for Patients with Common Mental Disorders used in Interpersonal Psychotherapy adapted for Ethiopia (Amharic version)

ማስታወሻ: ይህን ቅፅ በመሙላት ደንበኛው ጭንቀት ወይም ድባቴ ካለበት Treatment Tracking Form በማስቀጠል ይሞላ።

የምክክር ማድረጊያ ቢሮ ስም: _____

የምክር አገልግሎት የሚሰጠው ሰው ስም:_____

ቀን:_____ የሰነድ ቁጥር: _____

የህመምተኛው/ዋ ስልክ ቁጥር፡ _____ ዕድሜ: ____ ፆታ: ሴት☐ ወንድ ☐

የጋብቻ ሁኔታ: ያገባ☐ ያላገባ☐ የተፋታ ☐ በጓደኝነት ያለ☐ ሌላ_____

ልጅ ካለ በቁጥር: _____# አብረውህ/ሽ የሚኖሩ የቤተሰብ ብዛት: _____ የስራ አይነት፡ ተማሪ ☐

1. ባለፈው አንድ ወር ዉስጥ፣ በጤና እክል ምክንያት ለምን ያህል ቀናት ሙሉ በሙሉ የእለት ተእለት ተግባር/ስራ መስራት/ትምህርት መማር ወይም ሁለቱንም ማከናወን ያቅትህ/ሽ ነበር?
   የቀናቱ ብዛት _____
2. ባለፈው አነድ ወር ዉስጥ፣ በማንኛዉም የጤና ችግር ምክንያት፣ መደበኛ የቤትውስጥ/የትምህርት ቤት ስራ ወይም ሁለቱንም ሙሉ በሙሉ ለማከናወን ለምን ያህል ቀናት በጣም ተቸግረህ/ሽ ነበር?
   የቀናቱ ብዛት _____
3. ባለፈው አነድ ወር ዉስጥ፣ በየስንት ጊዜ:

	አርግጡኛ አደለሁም	ብዙ ቀናት	ከማሜኝ ቀናት በላይ	ሁል ጊዜ	በፍፁም አላጋጠመ ኝም
i. መበሳጨት፣ መረበሽ ወይም ተስፋ መቁረጥ አጋጥሞህ/ሽ ያውቃል?					
ii. ደስታ ማጣት ወይም ለነገሮች ፍላጎት ማጣት አጋጥሞህ/ሽ ያውቃል?					
iii. መረበሽ ወይም መጨነቅ አጋጥሞህ/ሽ ያውቃል?					
iv. አቅም ማጣት አጋጥሞህ/ሽ ያውቃል?					
v. እረፍት ማጣት ወይም መቁነጥነጥ አጋጥሞህ/ሽ ያውቃል?					
vi. ከሰዎች ጋር ንግግር ስታረግ/ጊ ወይም ስታነብ ወይም TV ስትመለከት/ቺ፣ ትኩረት ማድረግ መቸገር አጋጥሞህ/ሽ ያውቃል?					
vii. ለራስ መጥፎ የሆነ ስሜት መሰማት፤ እራስን የማይረባ ሰው አድርጎ ማሰብ ወይም ለቤተስብ ውድቀት መንስኤ ነኝ ብሎ መቁጠር አጋጥሞህ/ሽ ያውቃል?					
viii. ስጋትን መቆጣጠር ወይም ማቆም ማቃት አጋጥሞህ/ሽ ያውቃል?					
ix. የእንቅልፍ መረበሽ አጋጥሞህ/ሽ ያቃል?					

x.ያለምንም በቂ ምክንያት አንድ መጥፎ ነገር ይፈጠራል ብለህ/ሽ ፈርተህ/ሽ ነበር?					
4.ባለፈው አነድ ወር ዉስጥ፣ ለምን የህል ቀናት አካላዊ የሆኑ የህመም ምልክቶች (ለምሳሌ፡ እራስ ምታት እና ህመም፣ የልብ ምት መጨመር፣ ሰውነትን ማቃጠል/መደንዘዝ) ተመልክተህ/ሽ ነበር?					

5. ባለፈው አነድ ወር ዉስጥ፣ የሚከተሉት ነገሮች አጋጥሞህ/ሽ ያውቃል?

1. እራስን የማጥፋት ሀሳብ ነበረህ/ሽ? አዎ ☐ አልነበረም ☐
2. እራስን የማጥፋት ዕቅድ ነበረህ/ሽ? አዎ ☐ አቅጄ አላውቅም ☐
3. እራስን የማጥፋት ሙከራ አድርገህ/ሽ ነበር? አዎ ☐ አላደረኩም ☐

6. ባለፈው አነድ ወር ዉስጥ፣ የሚከተሉት ነገሮች አጋጥሞህ/ሽ ያውቃል?

i. ሌሎች ሰዎችን የማጥቃት ሀሳብ ነበረህ/ሽ? አዎ ☐ የለኝም ☐

ii. ሌሎች ሰዎች ላይ አካላዊ ጥቃት አድርሰህ/ሽ ታውቃለህ/ሽ? አዎ ☐ አላደረስኩም ☐

የጥያቄዎቹ ውጤት የንግግር ህክምና እነደሚያስፈልገው/ጋት ያመለክታል? አዎ ☐ አያመላክትም ☐

ህመምተኛው/ዋ የንግግር ህክምና ለማግኘት ፍቃደኛ ነው/ናት? አዎ ☐ አደለም/ች ☐

ህመምተኛው/ዋ ህክምና ለማግኘት ፍቃደኛ ካልሆነ/ች፣ ምክንየቱን በፁፍ ይጠቀስ

_____

_____

_____

Appendix N 1: Patient Treatment Tracking Form (English version)

REMINDER: Use this form for patients referred for IPT-E treatment following positive CMD screen. When the patient returns for treatment, retrieve this form and complete it after each session.

URGENT NOTE/HISTORY

Session 1 Post screening: Chart number: _____

Counsellor name:_____ Date:_____

1. What does the patient say is wrong with him/her?

   _____

2. What does the patient report as the cause of his/her problem?

   _____

   _____

3. Does the patient see a traditional healer at the current time? Yes ☐ No ☐
4. Recent or current life stressors that occurred around the time of the onset or worsening of symptoms:
   Loss ☐ Disagreements ☐ Life changes / Role transition ☐
5. Has depression, medically unexplained symptoms and/or anxiety (CMD) been present continuously for 2 or more years? Yes ☐ No ☐
   Details:_____
6. Other concurrent issues, medical condition or substance use (state usage) (please check ALL that are applicable):
   ☐ Pregnant ☐ Khat
   ☐ HIV/AIDS/TB ☐ Alcohol
   ☐ Cannabis ☐ Other e.g. malaria, diabetes, heart disease etc
   Details:_____
7. Is the patient taking any medications for medical or mental health conditions? Yes ☐ No ☐ (if yes please describe)

Medication name	Dose

8. Has the patient experienced physical or sexual violence
   in last year? Yes ☐ No ☐ If yes, please write the details

   _____

   before age of 15? Yes ☐ No ☐ If yes, please write the details

   _____

   ever, in his/her lifetime? Yes ☐ No ☐ If yes, please write the details
9. Suicidal NOW?_____
   Previous attempts? _____
   Safe for IPT-E? Yes ☐ No ☐
   Refer acute suicide concern? _____

Appendix N 2: Patient Treatment Tracking Form (Amharic version)

ማስታወሻ: ይህን ቅፅ ጭንቀት ወይም ድባቴ ላለባቸው ደንበኞች ተተቀም/ሚ። ህመምተኛው/ዋ ተመልሶ/ሳ ለህክምና በሚመጣበት/በምትመጣበት ወቅት ይህንን ቅፅ ከህክምናው ቦሀላ መሙላት እንዳትዘነጉ።

URGENT NOTE/HISTORY

ክፍለ ጊዜ 1፡ የሰነድ ቁጥር: _____

የምክር አገልግሎት የሚሰጠው ሰው ስም::_____ ቀን:_____

1. ህመምተኛው/ዋ የኔ ችግር ምንድነው ብሎ/ላ ነው የገለፀው/ቺው?

   _____

2. ህመምተኛው/ዋ ላጋጠመው/ማት ችግር ምክንያቱ ምንድነው ይላል/ትላለች?

   _____

3. ህመምተኛው/ዋ በአሁን ወቅት ከችግሩ ለመዳን የባህል ህክምና እየተከታተለ/ች ነው?
   አዎ ☐ አደለም/ች ☐

4. የህመምተኛውን/ዋ ችግር እያባባሰ ወይም እየቀሰቀሰ ያለው ምክንያት ምንድነው?
   የሚወዱትን ሰው በሞት ማጣት (ሀዘን) ☐ ከሰው ጋር መጋጨት ☐ የሂዎት ለውጥ ☐

5. የህመምተኛው/ዋ ጭንቀት ወይም ድባቴ በዘላቂነት ለሁለት ወይም ከዛ በላይ ለሆነ አመት ቆይቶ ነበር?
   አዎ ☐ አልቆየም ☐
   በዝርዝር:_____

6. በተጓዳኝነት ከጤና ጋር የተያያዙ ነገሮች:
   ☐ እርግዝና ☐ ጫት

7. ☐ ኤችአቪ/ኤድስ/የሳንባ ህመም ☐ አልኮል መጠጥ
   ☐ ካናቢስ ☐ ሌላ (ለምሳሌ ወባ፣ ስኳር ፣ የልብ ህጠም ወ.ሀ.ተ.)
   በዝርዝር:_____

8. ህመምተኛው/ዋ ለአካላዊ ወይም ለአእምሮ ህመም መድሀኒት እየወሰደ/ች ነው? አዎ ☐
   አይወስድም/አትወስድም ☐ (መልሱ አዎ ከሆነ ከታች ባለው ሳጥን ውስጥ ዝርዝሩን ይፃፍ)

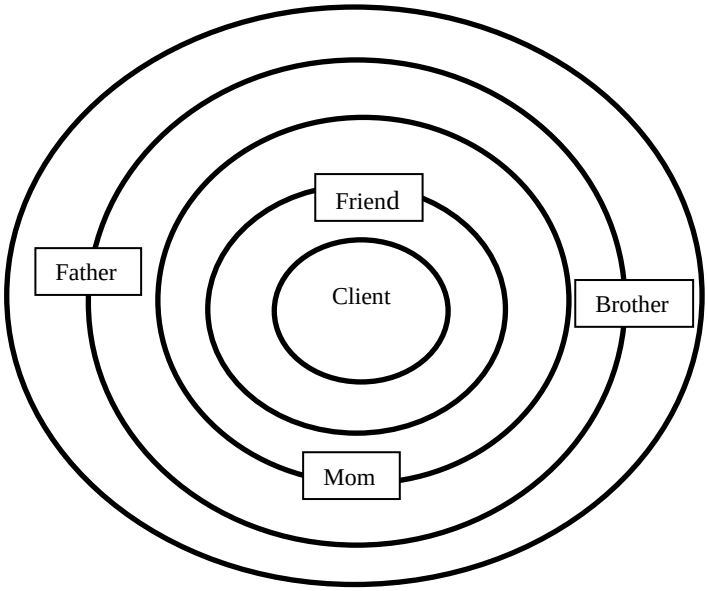
የመዳኒቱ ስም	የሚወሰደው መጠን

9. ባላፈው አንድ አመት ውስጥ ህመምተኛው/ዋ አካላዊ ወይም ፆታዊ ጥቃት ደርሶበት/ባ ነበር?
   አዎ ☐ አላጋጠመኝም ☐ (አዎ ከሆነ መልሱ በዝርዝር ይፃፍ) _____
   ከ15 አመት በታች እያለህ/ሽ አካላዊ ወይም ፆታዊ ጥቃት ደርሶብህ/ሽ ነበር?
   አዎ ☐ አልደረሰብኝም ☐ (አዎ ከሆነ መልሱ በዝርዝር ይፃፍ)_____
   በሂወት ዘመንህ/ሽ አካላዊ ወይም ፆታዊ ጥቃት ደርሶብህ/ሽ ነበር? አዎ ☐ አልደረሰብኝም ☐ (አዎ ከሆነ መልሱ በዝርዝር ይፃፍ) _____

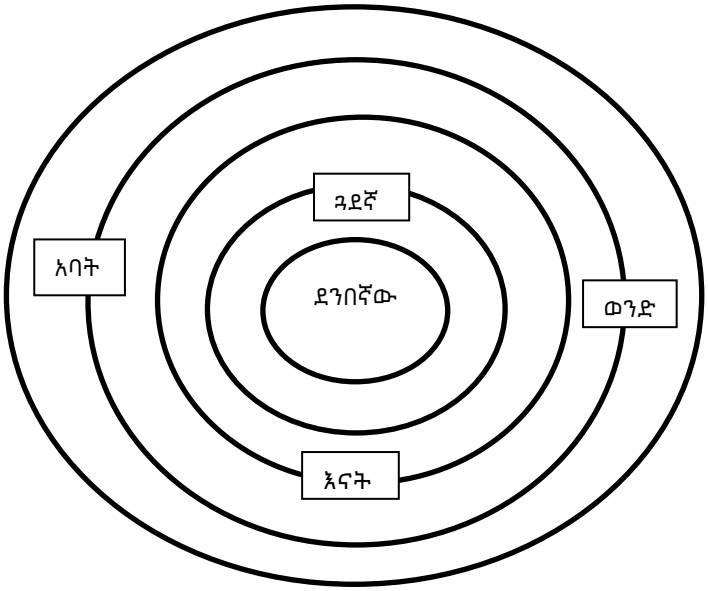
10. በአሁን ጊዜ እራስን የማጥፋት ሀሳብ/ዕቅድ አለ?_____
    ከዚህ በፊት እራስን የማጥፋት ሙከራ ነበር?_____
    ደንበኛው/ዋ ለ IPT-E የንግግር ህክምና ምቹ ነው/ናት? አዎ ☐ አደለም ☐

ከባድ እራስን የማጥፋት ሁኔታ ካለ ወደ ሆስፒታል ሪፈር ይደረግ_____

Appendix O 1: Interpersonal Inventory used in the Interpersonal Psychotherapy adapted for Ethiopia (English version)



Appendix O 2: Interpersonal Inventory used in the Interpersonal Psychotherapy adapted for Ethiopia (Amharic version)



Appendix P: MeSH terms used in the databases

For Interpersonal Psychotherapy (Pub-Med)

Interpersonal therapy[Title/Abstract] OR Interpersonal psychotherapy[Title/Abstract] OR Interpersonal counseling[Title/Abstract] AND Depression[Title/Abstract] OR depressive symptoms[Title/Abstract] OR depress[Title/Abstract] OR depressive disorder[Title/Abstract] OR major depressive disorder[Title/Abstract] OR depressive episode[Title/Abstract] OR anxiety[Title/Abstract] OR anxiety symptoms[Title/Abstract] OR anxious[Title/Abstract] OR anxiety disorder[Title/Abstract] OR Mental distress[Title/Abstract] OR Psychological distress[Title/Abstract] OR Common mental health problems[Title/Abstract] OR Common mental disorders[Title/Abstract] OR Somat*[Title/Abstract] AND college students[Title/Abstract] OR university students[Title/Abstract] OR undergraduate students[Title/Abstract] OR higher education students[Title/Abstract] OR adolescents[Title/Abstract] OR young people[Title/Abstract]

For Prevalence of mental distress (Pub-Med)

Depression[Title/Abstract] OR depressive symptoms[Title/Abstract] OR depress[Title/Abstract] OR depressive disorder[Title/Abstract] OR major depressive disorder[Title/Abstract] OR depressive episode[Title/Abstract] OR anxiety[Title/Abstract] OR anxiety symptoms[Title/Abstract] OR anxious[Title/Abstract] OR anxiety disorder[Title/Abstract] OR Mental distress[Title/Abstract] OR Psychological distress[Title/Abstract] OR Common mental health problems[Title/Abstract] OR Common mental disorders[Title/Abstract] OR Somat*[Title/Abstract] AND college students[Title/Abstract] OR university students[Title/Abstract] OR undergraduate students[Title/Abstract] OR higher education students[Title/Abstract]

For barriers to receiving professional mental health services

Treatment barriers[Title/Abstract] OR factors hindering treatment seeking[Title/Abstract] OR obstacles of treatment[Title/Abstract] AND treatment gap[Title/Abstract] OR unmet needs[Title/Abstract] OR help seeking intention[Title/Abstract] OR help seeking behavior[Title/Abstract] AND depression[Title/Abstract] OR depressive symptoms[Title/Abstract] OR depress[Title/Abstract] OR depressive disorder[Title/Abstract] OR major depressive disorder[Title/Abstract] OR depressive episode[Title/Abstract] OR anxiety[Title/Abstract] OR anxiety symptoms[Title/Abstract] OR anxious[Title/Abstract] OR anxiety disorder[Title/Abstract] OR Mental distress[Title/Abstract] OR Psychological distress[Title/Abstract] OR Common mental health problems[Title/Abstract] OR Common mental disorders[Title/Abstract] OR Somat*[Title/Abstract] AND college students[Title/Abstract] OR university students[Title/Abstract] OR undergraduate students[Title/Abstract] OR higher education students .[Title/Abstract]

Appendix Q: Quality assessment of included articles using mixed methods appraisal tool

1. For quantitative studies								
Studies	Presence of research question	Research questions addressed	Relevant sampling strategy to address research question	Representative sample	Measurement appropriateness	Low non-response bias	Appropriate statistical analysis	**Description**
Haile et al., 2017 (77)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Kelemu et al., 2020 (78)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Bedaso et al., 2020 (79)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Gebreegziabher et al., 2019 (25)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Tesfahunegn and Gebremariam 2019 (41)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Reta et al., 2020 (80)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Kebede et al., 2019 (81)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Melese et al., 2016 (82)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Dachew et al., 2015 (83)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Dessie et al., 2013 (84)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Mboya et al., 2020 (22)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Lugata et al., 2020 (86)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Bantjes et al., 2019 (87)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Amarasuriya et al.,2015 (75)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Shao et al., 2020 (88)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Costa et al., 2014 (89)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Lu et al., 2015 (90)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Asante and Andoh-Arthur 2015 (91)	Yes	Yes	No	No	Yes	Yes	Yes	Used convenient sampling technique that limited the representative sample size.
Othieno et al., 2014 (92)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Non-response rate was not reported.
Richards and Salamanca Sanabria 2014 (93)	Yes	Yes	No	No	Yes	Can't tell	Yes	A convenient sampling used that affected the selection of sample and non-response rate was not reported.
Porru et al., 2021 (74)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Hersi et al., 2017 (19)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Delara and Woodgate 2015 (73)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Ramón-Arbués et al., 2020 (94)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Teh et al., 2015 (95)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Fuad et al., 2015 (96)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Chatterjee et al., 2014 (97)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Becerra and Becerra 2020 (98)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Saïas et al., 2014 (99)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Response rate was not mentioned.
Asif et al., 2020 (76)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Birhanu and Hassein 2016 (85)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Schofield et al., 2016 (100)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Hakami 2018 (101)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Wahed and Hassan 2017 (102)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Arias-de la Torre et al., 2019 (103)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Auttama et al., 2021 (8)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Cage et al., 2018 (53)	Yes	Yes	Can't tell	Can't tell	Yes	Can't tell	Yes	Difficult to understand sampling strategy and sample size. Moreover, non-response rate was not mentioned
Ebert et al., 2019 (164)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Stewart et al., 2019 (154)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Vidourek et al., 2014 (29)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Rodriguez et al., 2017 (141)	Yes	Yes	Yes		Yes	No	Yes	High non-response rate.
Menon et al., (163)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Bilican 2013 (27)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Eisenberg et al., 2012 (28)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Arnaez et al., 2020 (169)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Non-response rate was not reported
Kasam et al., 2020 (170)	Yes	Yes	No	No	Yes	Yes	Yes	Used volunteer sampling technique that limited the representative sample selection.
El Kahi et al., 2012 (137)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
2. For qualitative studies								

	Presence of research question	Research questions addressed	The approach fit to research question	Research question adequately addressed	Findings derived from the data	Interpretation of the result substantiated by the data	Coherence of the methods	
Calloway et al., 2012 (110)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Low et al., 2016 (168)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
3. For randomized controlled trails								
	Presence of research question	Research questions addressed	Randomization properly performed	Comparability of groups at baseline	Complete outcome data	Blinded outcome assessors	Participants Intervention adherence	
Parhiala e t al., 2019 (194)	Yes	Yes	Yes	Yes	Yes	No	Yes	Outcome assessors were not masked.
O'Shea 2015 (49)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Young et al., 2016 (196)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Gunlicks et al., 2016 (197)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Miller et al., 2018 (198)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Gunlicks-Stoessel et al., 2019 (123)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
Ferizi et al., 2015 (48)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	All criteria were fully addressed.
4. For quantitative non-randomized studies								
	Presence of research question	Research questions addressed	Representative sample	Measurement appropriateness	Complete outcome data	Confounders accounted for in the design and analysis	Intervention fidelity	
Mufson et al., 2015 (45)	Yes	Yes	Can't tell	Yes	Yes	Can't tell	No	Fidelity was not assessed; the total population was not mentioned so that it is difficult to talk about the repetitiveness of the sample and the way cofounders managed were not mentioned.
Bledsoe et al., 2017 (193)	Yes	Yes	Can't tell	Yes	Yes	Can't tell	No	Fidelity was not assessed; the total population was not mentioned so that it is difficult to talk about the repetitiveness of the sample and the way cofounders managed were not mentioned.
5. For mixed method studies								
	Presence of research question	Research questions addressed	Adequate rationale to use mixed method	Integrated components to answer the research question	The outcomes adequately interpreted	Divergences and inconsistencies between quantitative and qualitative results adequately addressed	Components of the study adhere to the quality criteria of each tradition of the methods involved	
Deasy et al., 2014 (72)	Yes	Yes	Yes	Yes	Yes	No	Can't tell	Divergence and inconsistencies of the two approaches were not reported.
Burlaka et al., 2014 (166)	Yes	Yes	Yes	Yes	Yes	No	Can't tell	Divergence and inconsistencies of the two approaches were not reported.

Appendix R: A banner prepared to announce the Interpersonal Psychotherapy adapted for Ethiopia for the students

Appendix S 1: Information sheet for the study participants (English version)

You will be given a copy of this information sheet

Title: Mental distress, need and barriers to receive professional mental healthcare, explanatory models and feasibility study of Interpersonal Psychotherapy (IPT-E) Adapted for Ethiopia among Wolaita Sodo University Students.

We would like to invite you to participate in this original research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

What are the study's aims?

This study is designed to examine prevalence of mental distress, need and barriers to received professional mental healthcare, explanatory models and Feasibility Study of Interpersonal Psychotherapy (IPT-E) Adapted for Ethiopia among Wolaita Sodo University Students.

Who are we recruiting for the study?

This study mainly targets on undergraduate students with mental distress.

What will happen if you agree to take part?

You will be invited to take part in filling the questinnairies and interview. When we come to the quantitative data collection instruments in phase one, basically they are designed to collect data on prevalence of mental distress, pereceived need and barriers to received prefossional mental health care. The interviews of phase two will last from 50-60 minitues, which will be mainly focused on how you understand your illness, how you perceive the causes of your illness, what look like your help seeking behaviors, your preference of psychological treatment, impact of your problem, coping mechanisms, severity and onset of your illness. All these are interview issues in the first phase of the study. Questionnaire and interviews of phase three study focuses on assessing mental healthoutcomes changes and satisfactions gained from IPT-E.

Are there any risks or disadvantages associated with taking part in the study?

We do not think that participating in this research will cause you any problems. However, on rare occasions, somebody might be upset by the questions that they are being asked. If you are upset by the questions, then you do not have to answer the question; the interview can also be stopped at any time.

Are there any benefits of taking part in the study**?**

There is no direct benefit to you by being part of this study. But, we hope that the information we collect will help to improve your mental health status and the treatment given to individual with mental distress will be some benefits you will receive from this study.

What will we do with your information?

For interviews, there will be tape-recording, if you agree to this. If you take part in a tape-recorded interview, we will make sure that the tapes do not include your personal indentifiers. If notes are taken instead of tape-recordings, these notes will also not include your name. The tapes and notes will be kept in a locked cupboard. Once the interview tapes have been written down, and the data has been analysed, the tapes will be deleted.

Nobody except the researcher and data collectors will know that the information belongs to you. We will keep the questionnaires in a locked cupboard. After the end of this study, the information you give us may be stored and used by other researchers, but they will not be able to identify you in any way. If we come across any harmful activity during the research, we do not have a legal obligation to tell anyone about this. However, if we think that you or anybody else is at risk of being harmed, we may ask a support team to do something about this, or we can try to help you contact a relevant support person if you wish.

What will we do with the results of the study?

Once the overall study is completed, we will let you know what we have found out, either by inviting you to a meeting, by giving you a leaflet, or publishing on reputable journal. We will also tell our findings to policy makers within the Ministry of Health in Ethiopia.

Do I have to take part in the study?

It is up to you to decide whether to take part or not. If you decide to take part, you are still free to withdraw from the study at any time and without giving a reason. You may also withdraw any information you have already provided. A decision to withdraw at any time, or a decision to take part, will not affect the standard of care you receive, or disadvantage you in any way. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form.

Who is funding the study?

This study is being funded by Addis Ababa University.

Who is carrying out the study?

The study will be carried out by Addis Ababa University through a principal investigator Assegid Negash. If you have any questions or require more information about this study, please contact the research team using the following contact details: Pofessor. Mesfin Araya, Dr. Dawit Wondimagegn, Dr. Matloob Khan, Dr. Girmay Medhin and Dr. Clare.

If this study has harmed you in any way, you can contact the Institutional Review Board, Addis Ababa University, using the details below for further advice and information:

- Institutional Review Board, School of Medicine, Addis Ababa University
  Telephone number: 0115-5538734

Appendix S 2: Information sheet for the study participants (Amharic version)

ለተሳታፊዎች የሚሰጥ የመረጃ ቅፅ

የሂህ መለጃ ቅፅ ለእያንዳንዱ ተሳታፊ የሚሰጥ ነው::

የጥናቱ ርዕስ፡- Mental distress, need and barriers to receiving professional mental healthcare, explanatory models and Feasibility study of Interpersonal Psychotherapy (IPT-E) Adapted for Ethiopia among Wolaita Sodo University Students.

በዚህ በአይነቱ የመጀመሪያ በሆነ የጥናትና ምርምር እንድትሳተፍ/ፊ በትህትና እጋብዛለሁ። በጥናቱ ለመሳተፍ መወሰን ያለብህ/ሽ ለመሳተፍ ከፈለክ/ሽ ብቻ ነው። ላለመሳተፍ በመወሰንህ/ሽ በማንኛውም መልኩ የሚደርስብህ/ሽ ጉዳት ወይም የምታጣው/ጪ ጥቅም አይኖርም። በጥናቱ ለመሳተፍ ከመወሰንህ/ሽ በፊት ጥናቱ ለምን እንደሚካሄድና የአንተ/ቺ ተሳትፎ ምን እንደሆነ መገንዘብ አስፈላጊ ነው። እባክህ/ሽ ጊዜ ወሰድና/ጂ የሚከተለውን መረጃ በጥንቃቄ አንብብ/ቢ።ግልፅ ያልሆነ ነገር ካለ ወይም ተጨማሪ መረጃ ከፈለክ/ሽ ጠይቅ/ቂ። ይህ ጥናት በአዲስ አበባ ዩኒቨርስቲ በአእምሮ ህክምና ትምህርት ክፍል ለአዕምሮ ጤና ኤፕዲሞሎጂ የዶክትሪት ዲግሪ ማሙያ የሚካሄድ ነው።

የጥናቱ አላማ ምንድን ነው?

የጥናቱ አላማ በወላይታ ሶዶ ዩኒቨርሲቲ ውስጥ ያሉ የድባቴ እና ጭንቀት ህመም ያለባቸው ተማሪዎች የአእምሮ ህክምና ፍላጎታቸው ተሟልቶል ወይስ አልተሟላም፤ ህክምና ላለማግኘት መንስኤዎቹ ምንድናቸው፤ ህመማቸውን ምን ብለው ይጠሩታል፤ የህመሙ ምልክቶች፤ መንስኤ፣ህመሙን የሚቋቋሙበት ዘዴዎች እና የIPT-E ንግግር ህክምና በነርሱ ዘንድ ተቀባይነት እና መተግበር የሚችል መሆኑን የሚያጠና ጥናት ነው።

በጥናቱ የሚሳተፉት እነማን ናቸው?

በዚህ ጥናት ውስጥ ተሳታፊ የሚሆኑት የወላይታ ሶዶ ዩኒቨርሲቲ የአንደኛ ዲግሪ ተማሪዎች እድሚያቸው 18 አመት እና ከዛ በላይ የሆኑ በተለይም ደባቴ እና ጭንቀት ያለባቸው ተማሪዎች ናቸው።

በጥናቱ ለመሳታፍ ቢስማሙ ምን ይደለጋል?

በመጀመሪያው ዙር ሰለ ድባቴ፣ ጭንቀት፣ የህክምና ፍላጎት እና ህክምና ተማሪዎች እንዳያገኙ የሚያደርጉ ተግዳሮቶችን የያዘ ቃለ-መጠየቅ ይሆናል። በሁለተኛ ዙር ደግሞ ቃለ-መጠየቁ 50-60 ደቂቃዎች የሚዎስድ ይሆናል። በቃለ-መጠይቁ ውስጥ የሚነሱት ነገሮች የሚያካትቱት በዋነኝነት ተሳታፊው ህመሙን ምንብሎ እንደሚጠራው፣ የህመሙ መንስኤ ምንእንደሆነ፤ የህክምና እርዳታ ማግኘት፤ የችግሩ ክብደት፤ ችግሩ የጀመረበት ወቅት፤ የችግሩ ተፅኖ እና ችግሩን የሚቋቋሙበት ዘዴወችን ይመለከታል። የሶስተኛው ዙር ቃለ-መጠየቅ በዋናነት ትኩረት ያደረገው ከተሰጠው የህክምና እርዳታ የተገኘ እርካታ፤ ከህክምናው በፊት የነበረ የአእምሮ ጤና ሁኔታ እና ከህክምናው ቦሀላ የመጣ የአእምሮ ጤና ለውጥን ይመለከታል።

በዚህ ጥናት መሳተፍ ምን ጉዳት ይኖረዋል?

ውይይቱ ማንኛውም አይነት ችግር ያደርስብሀል/ሻ ብዬ አላስብም። ምናልባት አልፎ አልፎ መረጃ ሰብሳቢዎች በሚጠየቁት ጥያቄዎች ቅር ልትሰኝ/ኚ ትችላለህ/ሽ። ምናልባት ከጥያቄዎቹ መካከል አንዳንድ ጥያቄዎች የማይመችህ/ሽ ከሆኑ ሁሉንም ጥያቄዎች አለመመለስ (መልስ አለመስጠት) ትችላለህ/ሽ ወይም በማንኛውም ጊዜ ማቆም ይችላል።

በዚህ ጥናት መሳተፍ ምን ጥቅም ያስገኛል?

በዚህ ጥናት ውስት መሳተፍ ምንም አይነት ቀትተኛ የሆነ ጥቅም የለውም። ይሁን እንጂ የተሰበሰበው መረጃ በኢትዮጵያ ዩኒቨርሲቲ ውስጥ ላሉ የድባቴ እና ጭንቀት ላለባቸው ተማሪዎች የአእምሮ ጤና ህክምና አገልግሎት ለማሻሻል ይረዳል ብለን ተስፋ እናረጋለን። በተቸጨማሪም ድባትቴ እና ጭንቀት ያለባቸው ተማሪዎች የንግግር ህክምና ያገኛሉ።

በተገኘው መረጃ ምን ይደረጋል?

አንተ/ቺ ከተስማማህ/ሽ ቃለ-ምልልሱ ይቀረፃል። በሚቀረፁ ቃለ-ምልልሶች ላይ ከተሳተክ/ሽ የአንተን/ች መለያ የሆኑ ስም ወይም ሌላ ገላጭ መረጃ እንዳልተካተቱ ርግጠኛ መሆን አለብህ/ሽ። ድምፅህን/ሽ በመቅረፅ ፋንታ መረጃው በፅሁፍ ከተሰጠ ስምህን/ሽ ወይም ሌላ አንተን/ቺ የሚገልፅ ነገር አይካተትም። የተቀረፁትም ሆነ በፅሁፍ የተወሰዱት መርጃዎች በሚቆለፍ ሳጥን የሚየዙ ይሆናል። በቴፕ የተቀረፀው ቃለ-ምልልስ ወደ ፅሁፍ ይቀየርና መረጃዎቹ ይተነተናሉ፤ የተቀረፀውም ድምፅ እንዲጠፋ ይደረጋል። ጥናቱን ከሚያጠናው አካል ውጪ የአንተን/ቺ መረጃዎች ማንም ሰው አያውቅም። መጠይቆቹ ቁልፍ

ባለው ሳጥን ውስጥ ይቀመጣሉ። ጥናቱ እንዳለቀ የሰጠህን/ሽ መረጃ ይቀመጥና ሌሎች ተመራማሪዎች ጥናቱን ይጠቀሙበታል። ነገር ግን አንተ/ቺ ማን እንደሆንክ/ሽ በማንኛውም መንገድ መለየት አይችሉም።

ከጥናቱ በተገኘው ውጤት ምን እናደርግበታለን?

ጥናቱ ካለቀ በኋላ፣ ያገኘነውን ውጤት ስብሰባ በመጋበዝ፤ በራሪ ፅሁፍ በማዘጋጀት ለተሳታፊዎች በመስጠት እና ለጤና ጥበቃ እናሳውቃለን። በተጨማሪም የጥናቱ ውጤቶች በእውቅ ጆርናሎች ላይ ይታተማሉ።

በዚህ ጥናት ውስጥ መሳተፍ

መሳተፍ ወይም የለመሳተፍ ውሳኔ የአነት/ቺ ነው። ለመሳተፍ ከወሰንክ/ሽ በማንኛውም ጊዜ ራስህን/ሽ ምንም አይነት ምክንት ሳትሰጥ/ጪ ማግለል ይቻላል። የሚሰጠን መረጃ ውስጥ እንዳይካተት የምትፈልገው/ጊ ነገር ካለ ማመልከት ይቻላል። ለመሳተፍ ከወሰንክ/ሽ ይህ የመረጃ ቅፅ ይሰጥሀል/ሻ። ፍቃደኝነትህነን/ሽ የሚገልፅ ቅፅ ላይ ፊርማህን/ሽ ፈርም/ሚ።

ይህን ጥናት በገንዘብ የሚረዳው ማን ነው?

ይህንን ጥናት በዋነኝነት በገንዘብ የሚደግፈው አዲስ አባባ ዩኒቨርሲቲ እና ወላይታ ሶዶ ዩኒቨርሲቲ ናቸው። ማንኛውም አይነት ጥያቄ ወይም ተጨማሪ መረጃ ከፈለክ/ሽ የምርምር ቡድኑን በሚከተለው አድራሻ ማግኘት ይቻላል።

አሰግድ ነጋሽ: 0912734270

ፕሮፌሰር መስፍን አራያ: 0911408950

ዶክተር ደዊት ወንድማደኝ

ዶክተር ማትሎብ ክሃን ናቸው

ዶክተር ግርማይ መድህን እና ዶክተር ክሌር ፔን።። □

ጥናቱ በማንኛውም መንገድ ጉዳት ካደረሰብህ/ሽ የአዲስ አበባ ዩኒቨርሲቲ ክለሳ ቦርድ ከዚህ በታች በተገለፀው አድራሻ ማግኘት ይቻላል።

- የተቋሚዊ ክለሳ ቦርድ፣ የህክምና ትምህርት ቤት፣ የጤና ሳይንስ ኮሌጅ፣ አዲስ አባባ ዩኒቨርሲቲ
- ስልክ ቁጥር፡ ***0115 5538734***

Appendix T 1: Informed consent form for the study participants (English version)

Please complete this form after you have read the information sheet and/or listened to an explanation about the research.

Title of the research: Mental distress, need and barriers to receiving professional mental healthcare, explanatory models and Feasibility Study of Interpersonal Psychotherapy (IPT-E) Adapted for Ethiopia among Wolaita Sodo University Students.

Addis Ababa University Research Ethics Committee Ref: 045/17/Psy

Thank you for considering taking part in this research. The person organizing the research must explain the project to you before you agree to take parts. If you have any question arising from the information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this consent form o keep and refer to at any time.

I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can notify the researchers involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up until they are published.

I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the national data protection rules.

If I am interviewed, I consent to that interview being audio-taped.

The information you have submitted will be published as a report. Please note that confidentiality and anonymity will be maintained and it will not be possible to identify you from any publications.

You will receive IPT-E intervention for your mental health problem.

I agree that the research team may use anonymized data for future research.

Participant's Statement:

I _____ agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Signed _____ Date _____

Investigator's Statement:

I _____ confirm that I have carefully explained the nature, demands and any foreseeable risks of the proposed research to the participant. Signed_____ Date_____

Appendix T 2: Informed consent form for the study participants (Amharic version)

የጥናቱ ርዕስ፡ Mental distress, need and barriers to receiving professional mental healthcare, explanatory models and feasibility and acceptability of Interpersonal Psychotherapy Adapted for Ethiopia among Wolaita Sodo University Students

የአዲስ አበባ ዩኒቨርሲቲ የጥናትና ምርምር ስነ-ምግባር ኮሚቴ ቁጥር 045/17/Psy

በዚህ ጥናት ለመሳተፍ በማሰብህ/ሽ በቅድሚያ አመሰግናለሁ።

በጥናቱ ለመሳተፍ ከመወሰንህ/ሽ በፊት ጥናቱን የሚያስተባብረው ግለሰብ ስለጥናቱ ገለፃ ማድረግ አለበት። የመረጃ ቅጹን በተመለከተም ሆነ በተሰጠህ/ሽ መግለጫ ላይ ጥያቄ ካለህ/ሽ ወደ ጥናቱ ከመግባትህ/ሽ በፊት ጥናት አድራጊውን ግለሰብ ጠይቅ/ቂ።

የዚህ የፈቃደኝነት መጠየቂያ ቅፅ አንተ/ቺ ዘንድ እንዲቀመጥና አስፈላጊ ሆኖ በተገኘ ጊዜ እንድታየው/ዪ አንድ ኮፒ ይሰጥሀል/ሻ።

- ምርምሩ በሚካሄድበት በማንኛውም ወቅት ተሳትፎዬን ማቋረጥ ከፈለኩ ውሳኔዬን ለተመራማሪው በመናገር እና ምንም ምክንያት ማቅረብ ሳይኖርብኝ ከተሳትፎ የመውጣት መወሰን እንደምችል ተረድቼለሁ። በተጨማሪም የሚሰጠው መረጃ ወደ ሕትመት እስካልገባ ድረስ የሰጠውትን መረጃ ማንሳት እንደምችል ተረድቻለሁ።
- የግል መረጃዬ ለተገለፀልኝ አላማ እንዲጠናቀር ሙሉ ፈቃደኝነቴን ሰጥቻለሁ። ይህ መረጃ በብሔራዊ የመረጃ አጠባበቅ ሕጎች መሰረት እንደሚያዝ ተረድቻለሁ።
- ጠለቅ ባለ መልኩ ቃለ-መጠይቅ እንዲደረግልኝ የምመረጥ ከሆ ለቃለ-መጠይቁ በቴፕ ሪከርደር እንዲቀረፅ ፈቃደኝነቴን ሰጥቻለሁ።
- የሰጠህው/ሽ መረጃ በሪፖርት መልክ የሚታተም ይሆናል። መረጃው በሚስጥር የሚያዝና የአንተ/ቺ መሆኑን ማንም እንዳያውቅ እንደሚደረግ እንዲሁም በሕትመቱ አንተን/ቺ ማንም ሊያውቅህ/ሽ እንደማይችል ልብ በል/ይ።
- የጥናት ቡድኑ የሰጡህን/ሽ መረጃ ማንነቴን ሳያጋልጥ እና ሚስጥርነቱን እንደተጠበቀ ወደፊት በሚደረግ ጥናትና ምርምር እንዲጠቀምበት ተስማምቻለሁ።
- ፍቃደኛ ከሆንኩ እና በጥናቱ መሰረት የአእምሮ ህመም ከተገኘብኝ የIPT-E ንግግር የስነ-ልቦና ህክምና እንደሚሰጠኝ ተረድቻለሁ።

የተሳታፊው/ዋ ቃል

እኔ_____ከላይ የተጠቀሰው ጥናትና ምርምር ለእኔ ባረካኝ መጠን የተገለፀልኝ መሆኑን ተስማምቻለሁ:: እንዲሁም በጥናቱ ለመሳተፍ ተስማምቻለሁ። ከላይ የሰፈሩትን ስለ ጥናቱ የተሰጡትን ማሳሰቢያዎች እና የመረጃ ቅፅ አንብቢያለሁ። እንዲሁም ጥናትና ምርምሩ ምን እንደሚይዝ (እንደሚያጠቃልል) ተረድቻለሁ።

ፊርማ_____ ቀን_____

የተመራማሪው ቃል

እኔ_____የታቀደውን ጥናትና ምርምር የሚጠይቀውን ነገር እና አስፈላጊ ሆኖ ሲገኝ ማንኛውም ሊከሰቱ የሚችሉ አደጋዎችን ለጥናቱ ተሳታፊ በጥንቃቄ ማብራራቴን አረጋግጣለሁ።

ፊርማ_____ ቀን_____

Appendix U 1: Referral form for students with severe mental health problem (English Version)

Psychiatric Referral Form for Students with Severe Mental Illness

Date of referral_____

Referral from:_____

Referral to_____

Client's name:_____ Age:_____

Address:_____

Reason for referral:_____

Name of counselor who refer client:_____Signature:_____

Appendix U 2: Referral form for students with severe mental health problem (Amharic Version)

ከባድ የአእምሮ ህመም ያለባቸው ተማሪዎች ሬፈር የሚደረግበት ቅፅ

የሬፈራል ቀን፡ _____

ሬፈር አድራጊው ተቋም_____

ሬፈራል ለ_____

የተማሪው ስም _____ ዕድሜ _____

የተማሪው አድራሻ_____

ሬፈር የተደረገበት ምክንያት_____

ተማሪዉን/ዋ ሬፈር ያደረገው ግለሰብ ስም_____ ፊርማ _____

VERITAS ARBOR AVO

ADDIS ABABA UNIVERSITY

Certificate of Completion

This is to certify that

ASSEGID NEGASH TEFERA

has successfully completed the Biaber Project training in the delivery of mental health services including Interpersonal Psychotherapy for Ethiopia (IPT-E). and has screened and treated the requisite number of patients to certify the holder is designated capable of screening and using IPT-E to treat adults with Common Mental Disorders.

ዶ/ር ቢኒያም ወርቁ
ሳይካትሪስት
Benyam Worku,MD
Psychiatrist

Dr. Benyam Worku
Head Department of Psychiatry
College of Health Sciences
Addis Ababa University

የአእምሮ ሕክምና ት/ክፍል
ሕክምና ፋኩልቲ
Department of Psychaitry
Faculty of Medicine
ADDIS ABABA UNIVERSITY

Dr.DAWIT WONDIMAGEGN
Chief Executive
Director

Dr. Dawit Wondimagegn
Co-PI- Biaber Project
Chief Executive Director
College of Health Sciences
Addis Ababa University

Dr. Clare Pain
Co-PI- Biaber Project
Associate Professor of Psychiatry
University of Toronto

Appendix W: የአይ.ፒ.ቲ ህክምና የተግባር ማስታዎሻ

የአይ.ፒ.ቲ ህክምና የተግባር ማስታወሻ

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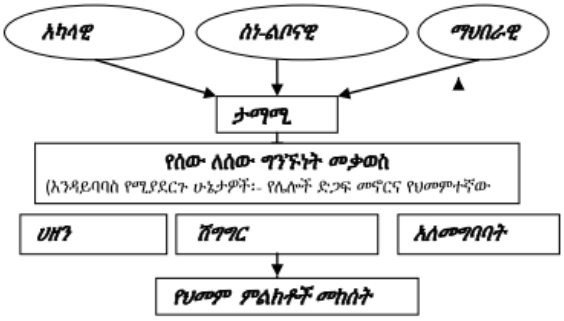
የመጀመሪያ ክፍለ ጊዜ:-

1. የአዕምሮ ህክምና ምርመራ ማድረግ፤ ከህመምተኛው ጋር መግባባት መፍጠር፤ መድሀኒት ያስፈልግ እንደሆነ መለየት፤
2. ለህመሙ ምልክቶች መንስኤ የሆኑ ችግሮችን መለየት፤ ህመምተኛውን ሊረዱ የሚችሉ ወይም ለመዳን እንቅፋት የሚሆኑ ሰዎችን መለየት(የሰው ለሰው ግንኙነት ቆጠራ በማካሄድ)፤
3. የአይ.ፒ.ቲ. የትኩረት አቅጣጫዎችን መለየት:- ሀዘን፣ የህይወት ሽግግር፣ እንዲሁም አለመግባባቶች፤ እነዚህ የትኩረት አቅጣጫዎች የስሜት ለውጥ ከተከሰተበት ጊዜ ጋር ያላቸውን ወቅታዊ ግንኙነት ማረጋገጥ፤ተያያዥ የሆነ የደስታ ማጣት ስሜትና ይህንን ሁኔታ መለወጥ እንደሚቻል፤
4. የሚፈለገውን ግብ መወያየት:-የህመም ስሜቶችን ማሻል፤ ወደ ስራ መመለስ። በተስማማችሁባቸው ችግሮች ዙሪያ መወያየት፤
5. ትምህርት መስጠት:- ህመምተኛው የደረሰበት ስቃይ በህይወቱ ላይ ስላስከተለው አሉታዊ ተጽእኖ፣ የሱ ጥፋት አለመሆኑን፣ ውጫዊ ምክንያት ያለው መሆኑን፣ ሊታከም የሚችል መሆኑን፣ በዚህ ወቅት ማህበራዊ ድጋፍ የሚያስፈልገው መሆኑን ማስረዳት ያስፈልጋል። የአይ.ፒ.ቲ ህክምና እነዚህን በሰው ለሰው ግንኙነት የሚፈጠሩ የስቃይ ስሜቶችን ለማስታገስ ይረዳል።



የመካለከኛ ክፍለ ጊዜ:- ታማሚዎች ችግራቸውን የሚያወያዩበትና በህይወታቸው ለውጥ ማድረግ የሚጀምሩበት ወቅት ነው። ትኩረት የተሰጠባቸው ጉዳዮችን ከህመም ስሜቶች መከሰት ወይም መባባስ ጋር ማያያዝ፤ እነዚህ ችግሮች፣ ዝምድናዎችና ግንኙነቶች፣ ከህመሙ መባባስ ወይም መሻሻል ጋር ያላቸውን ቁርኝት በጥልቀት መመርመር፤ በሰው ለሰው ግንኙነት ላይ በማተኮር እንዴት ችግሮችን ማሻሻል እንደሚቻል ማየት፤ ክትትል ሊደረግባቸው የሚገቡ ጎዳዮች:- የህመም ምልክቶች፣ የደህንነት ስጋት ያለመኖሩን፣ ስራ የመስራት ችሎታና መሻሻሎችን በመጠይቅ ቅጽ በየሳምንቱ መመዝገብ። መድኃኒት ካለ በታዘዘው መሰረት መወሰዱንና የማይፈለጉ የጎንዮሽ ውጤቶች አለመከሰታቸውን ማረጋገጥ። አጣዳፊ የደህንነት ስጋት ከተከሰተ የአዕምሮ ህክምና አገልግሎት ወደሚሰጥበት ሆስፒታል ሪፈር ማድረግ። ግጭት ሲኖር ጥቃት አለመድረሱን ማጣራት ያስፈልጋል፤ የታማሚው ወይም የቤተሰብ አባላት ደህንነት አደጋ ላይ ከወደቀ የማህበረሰባዊ ተቋማትን ማማከር ሊያስፈልግ ይችላል።

የህክምናው ግብ፡-
ማህበራዊ ህይወትን በማሻሻል የህመም ስሜቶችን መቀነስ።

- ህመምተኛውን ቀጥሎ በተጠቀሱት ጉዳዮች ላይ መርዳት፡-
  - የሰው ለሰው ግንኙነቶችን ማደስ ወይም ማጎልበት፤
  - የሰው ለሰው ግንኙነት ክህሎትን ማዳበር፤
  - የሰው ለሰው ግንኙነት ችግሮችን መፍታት፤

በተመረጡ ተግባራት ላይ ትኩረት ማድረግ

ሽግግር፡- የህይወት ለውጦች፤ የማህበራዊ ሚና ሽግግሮች፤

1. ህመምተኛው ለውጦችንና ተያይዘው የተከሰቱ መናጋቶችን እንዲያስረዳ ማበረታታት፤
2. የቀደመውን ነገር በጎ ገጽታ በማንሳት ሀዘኑን እንዲወጣ እንዲሁም የአዲሱን ሁኔታ ተስፋና ስጋቶች እንዲሁም ለውጦች መመርመር፤
3. አዳዲሶቹ ሁኔታዎች ሊሻሻሉ የሚችሉበትን መንገድ እንዲሁም ሽግግሩን ለማቅለል ድጋፍ ሊያደርጉ የሚችሉ ሰዎችን መፈለግ።

ሀዘን፡-

1. በሞት ያጡትን ሰው የአሟሟት ሁኔታ በዝርዝር መወያየት፤
2. ታማሚው/ዋ ከሟች ጋር ያለውን/ያላትን ግንኙነት በዝርዝር እንዲናገር/እንድትናገር ማበረታታት (እንዴት እንደተገናኙ፣ ግንኙነታቸው አሁን ወዳለበት ደረጃ እንዴት እንዳደገ፣ የግንኙነታቸውን በጎና የሚያስከፋ ጎን)፤
3. በዚህን ጊዜ ህመምተኛው ክብካቤ ሊያደርጉ ከሚችሉ ጓደኞችና ቤተሰቦች ጋር ጊዜውን በተገቢው ሁኔታ እንዲያሳልፍ መርዳት።

አሰመግባባት፡-

1. የግንኙነቱን ሁኔታ፣ ህመምተኛው ግጭት ስላስነሳው ጉዳይ ያለውን አመለካከት፣ ምን መከራ እንዳደረገ፤
2. ህመምተኛው ሌላኛው ወገን ምን እንደሚያስብ ያለውን አመለካከት፣ አንዳቸው በሌላው ላይ የሚያሳርፉትን ተጽእኖ፣ ሌላኛው ወገን ላይ የተፈጠረውን ስሜትና የሰጠውን ምላሽ፤
3. በቅርብ ጊዜ ካደረጓቸው የቃላት ልውውጦች ምሳሌ ማቅረብ (የሰው ለሰው ግንኙነት ቆጠራ ማድረግ) እያንዳንዳቸው የያዙትን አቋም ለመመርመር፣ የዕሴትና አንዱ ከሌላው የሚጠብቁትን ነገር ልዩነት በመለየት፣ በመካከላቸው ያለውን የአመለካከት ልዩነት በመለየት የተሻለ ምርጫ እንዲያደርጉና መግባባት እንዲችሉ መርዳት።

የማጠቃለያ ደረጃ፡-

ይህ ወቅት ከህመምተኛው ጋር በጥሩ ስሜት የመሰነባበቻ ጊዜ ነው።

1. ህመምተኛው የህክምና ልምምዱን፣ የታዩ ለውጦችን (በህመም ስሜቶችና በ ሰው ለሰው ግንኙነቶች)፣ ስኬቶችንና ጥረቶችን እንዲሁም እንዴት ወደፊት በሰፊው እንደሚጠቀምባቸው፤
2. ከባድ ቀንን ከድባቴ ህመም መመለስ እንዴት መለየት እንደሚችል መወያየት፣ የድባቴ ህመም መመለስ ምልክቶችንና ምን የመፍትሄ እቅድ እንዳስቀመጠ መወያየት፤
3. ህክምናው በመጠናቀቁ ምክንያት ህመምተኛው የሚሰማውን ስሜትና ስጋቶች መጠየቅ፤ አስፈላጊ ሆኖ ሲገኝ ህክምናውን መልሶ የመቀጠል እድል እንዳለው ማስረዳት፤
4. ያላቸውን ውስጣዊ ጥንካሬና በዙሪያቸው ያለውን ድጋፍ ማጉላት፤ ጤናማ ሆነው ሊኖሩ እንደሚችሉ ውስጣቸው ተስፋን እንዲሞላ ማድረግ።

Letter of Declaration

I, the undersigned, declared that this is my original work, has never been presented in this or any other university, and that all the resources and materials used for the dissertation, have been fully acknowledged.

Name: Assegid Negash

Signature: _____

Date: _____

Place: _____

Date of submission: _____

This dissertation has been submitted for examination with my approval as University Supervisor.

Name: _____

Signature: _____

Date: _____