PSYCHOMETRIC PROPERTIES OF SUICIDAL BEHAVIORS QUESTIONAIRE REVISED (SBQ-R) SCREENING TOOL AMONG PEOPLE WITH MENTAL ILLNESSES AT OUT PATIENT DEPARTMENT OF JIMMA UNIVERSITY MEDICAL CENTER, PSYCHIATRIC CLINIC, SOUTH WEST ETHIOPIA, 2020

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A RESEARCH THESIS TO BE SUBMITTED TO DEPARTMENT OF PSYCHIATRY,SCHOOL OF MEDICAL SCIENCES, INSTITUTE OF HEALTH, JIMMA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE MASTERS OF SCIENCES DEGREE IN INTEGRATED CLINICAL AND COMMUNITY MENTAL HEALTH.

December, 2020

Jimma, Ethiopia

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Abstract

Background: Suicide is the act of deliberately killing oneself. The most significant risk factor for suicide is psychiatric disorders. Suicidal Behaviors Questionnaire Revised (SBQ-R) is one of the most commonly used screening tools for suicide in both research and clinical practice even though the tool is not validated based on our cultural context in Ethiopia. The use of a non-validated screening tool could result in under or over detection of the problem. Therefore, validating this screening tool can easily help for early detection of suicidal behavior.

Objective: To assess the validity and reliability of Suicidal Behaviors Questionnaire Revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic 2020.

Method: Institutional based cross-sectional study design using consecutive sampling technique was conducted among 154 participants. Internal consistency was evaluated by Cronbach's alpha coefficient. Pearson correlation coefficient was applied to evaluate Criterion validity (Concurrent validity) with MINI suicidality. Sensitivity, specificity and the area under the curve (AUC) for various SBQ-R scores was calculated by receiver operating characteristic (ROC) analysis. Cut-off point was the score which gives maximum Youden Index (Sensitivity+ Specificity -1)

Result: A total 154 patients were participated in the study with 100% respondent rate. The translated Afaan Oromoo version of SBQ-R was understandable and culturally acceptable for language speakers. Internal consistency reliability (Cronbach's alpha) was (α =0.88). Receiver operating characteristic (ROC) analysis showed area under curve (AUC= 0.95 (95%, CI 0.92 - 0.98). As a suicide risk screening tool SBQ-R demonstrated satisfactory psychometric properties with maximum youden's index of (0.83) at a total cut-off score 7 at a sensitivity of 95%, a specificity of 88%, and a positive predictive value of 76% and Negative predictive value of 98% among people with mental illness.

Conclusion and recommendation: The study showed that SBQ-R is a valid screening tool of suicidal behaviors for peoples with mental illness those speaks Afaan Oromoo language.

Key words: Mental illness, Suicide, Validation, Reliability, SBQ-R, Ethiopia.

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List of Abbreviation and Acronyms

AUC- Area under Curve

ICCMH- Integrated Clinical and Community Mental Health

JUMC - Jimma University Medical Center

LR- -Negative likelihood ratio

LR+-Positive likelihood ratio

MINI- Mini International Neuropsychiatric Interview

PPV/ NPV- Positive predictive value/Negative predictive value

ROC –Receiver Operating Characteristics

SBQ-R- Suicidal Behaviors Questionnaire-Revised

SPSS- Statically Package for Social Science

TPR/FPR- True positive rate/False positive rate

WHO- World Health Organization

CHAPTER ONE

INTRODUCTION

1.1. Background

Suicide is the act of deliberately killing oneself, which is fatal and person's wish to end own life or die. Suicide attempt is intentional self-harm or injury like self-inflicted poisoning, which have or have not fatal intent or outcome, whereas suicidal behavior include suicidal ideation, planning, attempt and suicide itself. Hanging, ingestion of pesticide and firearms are most common methods of suicide. The risk factors of suicide are having psychiatric disorders especially affective disorders /depression/, having family history of mental illness, being single/ separated/divorced, being male and exposure to violence like child abuse. Over 800, 000 people die by suicide and there are many suicide attempts for each death and for each death there are many suicide attempts (1,2,3). The most significant risk factor for suicide is psychiatric disorders (4).Psychiatric patients have 3 to 12 times at risk of suicide than that of general population. Almost 95% of people who attempt or commit suicide have diagnosed mental disorder. Mood disorders are most closely linked to suicide(2). Among those people who die by suicide more than 80% has history of mental illness or history of substance use disorder. More than 90% of them are 15-29 year old. Effective strategies for prevention of suicide and early detection of individuals at risk of suicide or suicidal behavior are essential (3). There are different screening tools for suicide among those Suicidal Behavior Questionnaire Revised (SBQ-R) is widely used tool for assessing suicide which was developed by Linehan and colleagues in 1981 (5). It contain four items of which item 1 is about life time suicide ideation and/or attempt maximum score of 4 points; response 1 means scoring 1 indicates, non- suicidal subgroup, 2 suicidal risk ideation subgroup, 3 suicide plan subgroup and 4 suicide attempt subgroup.

Item 2 assess frequency of suicidal ideation over the past twelve month and have maximum score of 5 points. response 1(score 1)never,2 rarely(1time),3sometime(2times) ,4 often (3-4times) and 5 very often(5 or more times).

Item 3 assess the threat of suicide attempt and maximum score of 3 points. Response 1, 2 and 3 score 1,2and 3 respectively and finally item 4 evaluates about self-reported likely hood of suicidal behavior in the life time and maximum score of 6 points.

Response 1(score 0) means never, 1(score 1) means no chance at all, 2 Rather unlikely, 3 unlikely, 4 likely, 5 rather likely and 6 very likely. The total score range from 3-18 (6). Cut-off point was different for clinical and non-clinical populations; 7 for adult general population whereas 8 for adult psychiatry in patients. Suicidal Behavior Questionnaire Revised (SBQ-R) gives abroad range of information briefly within short time. Response can be used to identify risky individuals and specific risky behaviors(7).

1.2. Statement of problem

Globally among age group of 15-29 years suicide become the second cause of death. Somewhere in the world there are many suicide attempts and a death every 40 seconds. People who have made prior suicide attempts are at much higher risk of dying by suicide. Presence of stigma and taboo about suicide make people not to ask for help even if there is increase in knowledge and research about suicide and its prevention(1). Suicidal ideation and suicidal attempts were became high burden among adolescent students. Female are at higher risk of suicidal ideation and suicidal attempt(8). Many of individuals who have suicide ideation/attempt have clinical depression or subclinical symptoms of depression and showed high intent for suicide(9). At least one in five of the adolescents in high school had experienced suicide ideation whereas one in six had attempted suicide(10).

The magnitude of suicidal behaviors was very high among people with mental illness. Major depressive disorders, other co-morbid psychiatric disorders and having co-morbid substance use disorders were predictors of suicidal behaviors(11). Both major depressive disorders and suicide are common among adult outpatients with somatic complaints. Risk factors for suicide ideation were self-report depression or anxiety and having comorbid psychiatric diagnoses (12).

Previous study indicates that SBQ-R is valid instrument in Spanish speaking patients with suicide. It could be useful tool in primary care and where patients do not have access to specialized help. Psychometric properties of Suicidal Behavioral Questionnaire-Revised (SBQ-R) might be vary based on type of population that needs to be applied carefully according to cultural and linguistic factor of population. Cut off point can be vary(13). Replication of studying psychometric properties of SBQ-R(the finding) with more ethnically diverse samples would be beneficial (7).

There is limited study about psychometric properties of SBQ-R in sub Saharan Africa, despite psychometric properties of SBQ-R could vary based on different cultural context which needs further study in diverse population(14).

SBQ-R is one of the most used screening tools for suicide in both research and clinical practice even though the tool is not validated based on our cultural context in Ethiopia. Up to this time validation of SBQ-R has not been investigated for people with mental illnesses in Ethiopia. So this study will be the first to assess the psychometric properties of SBQ-R. Therefore the aim of this study will be to assess the psychometric properties of SBQ-R screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic.

1.3. Significance of study

Early identification of people at risk of suicide is very important to save their life. Commonly developed country screen patients for suicide using valid screening tool, in addition American psychiatric association and DSM-V suggest screening tool during first evaluation and to follow the progress of suicidal patient.

Study report showed that it is easy for mental health to use and indicated that patient benefited if assessed using screening tool. Suicidal behaviors questionnaire revised (SBQ-R) is not validated based on our cultural context in Ethiopia until this time and the use of a non-validated screening tool could result in under or over detection of the problem in clinical practice as well as research done in the general population. Therefore, validating this screening tool can be easily used by the general health professionals and researcher to facilitate the integration of the service and conduct study.

Generally using validated SBQ-R helps to give comprehensive mental health service, prevent suicide and also used to serve as a base line and provide a validated tool for researchers to conduct future research.

CHAPTER TWO

LITERATURE REVIEW

2.1. Prevalence of suicide among people with mental illnesses

Globally, from all violent deaths suicide accounts 50%and 71% among males and females respectively and for both males and females the suicide rate were highest among age group 70 years and above (1).A study conducted in Nord-Trondelag County showed that one in six young adults' experienced suicidal thoughts, girls predominating. Symptoms of depression, anxiety, tension /pain, overweight and conduct problem reported when participants were at age of 13-15 years were strongly associated with suicide. Suicidal thoughts were reported by 17% of participants and the prevalence was 14.2% in boys and 19.5% in girls(15).

According to a national cohort study of suicide after first hospital contact for mental disorder in Denmark absolute risk of suicide in different psychiatric disorders varied from 2% to 8%. The risk was highest for men diagnosed with bipolar disorders and female with diagnose of schizophrenia(16).

Study done at four general hospitals in china showed that the one month prevalence of suicide was 2.3%. Significantly associated factors with suicide were self-reported depression and getting psychiatric diagnoses (MDD, anxiety disorders, and bipolar disorders)and study done on Jamaican youth found that the prevalence of suicidal ideation was 9.7% and among those who had suicidal ideation 36.6% were depressed whereas 8.2% were not depressed(12), (17).

According to study conducted at Amanuel Mental Specialized Hospital among 423 people with diagnosis of schizophrenia, the prevalence of life time suicidal ideation and attempt was found to be 27.3% and 19.3% respectively. Co-morbid depression, hopelessness, family history of suicide were associated with suicidal ideation and attempt among people with schizophrenia(18).

A study conducted at University of Gondar among 836 students, showed that prevalence of suicidal ideation was 19.9%. It was higher among students who had mental distress, a family history of mental illness and for those who had low social support. Financial distress, Khat chewing and alcohol use were also significantly associated with suicidal ideation(19).

According to a cohort study conducted in Butajira among 919 peoples with severe mental illness, the prevalence of suicide attempt was 26.5% among patients with major depression,23.8% among bipolar I disorder and 13.1% among schizophrenia. Suicidal attempt is higher among female and the most frequently used method was hanging which was 71.5% (20). Likewise a study done in Jimma University teaching hospital psychiatry clinic among 385 people with mental illness;-showed that the lifetime prevalence of suicidal behaviors was 28.6%. The lifetime prevalence of suicidal ideation was 54.8%,while suicidal ideation and attempt was 21.8% and 16.1% respectively(11).

2.2. Psychometric properties of SBQ-R

Study done on validation of Suicidal Behaviors Questionnaire-Revised (SBQ-R) among clinical and non-clinical sample showed moderate alpha coefficient for psychiatric adolescent in patients (0.88) and psychiatric adult in patients (0.87). The inter correlation of items of SBQ-R was ranged from 0.62 between item 3 (threat) and item 4 (likely hood) to 0.76 between item 1(past attempt) and item 2(frequency) for adult inpatients. The AUC was 0.96 and 0.89 for psychiatric adolescent in patients and for psychiatric adult in patients respectively. Cut-off point for non-clinical sample was 7 with sensitivity 83% and specificity 96%. Whereas Cut-off point for clinical sample was 8 with sensitivity 87% and specificity 93%(7).

Study done at University of Lodz, Poland among university students on polish adaptation of SBQ-R showed satisfactory internal consistency, assessed using Cronbach's α was 0.83 and Cut-off point established for the Polish version was 9(AUC = 0.92) with sensitivity 85% and specificity 95% and also the German version of the SBQ-R among general population showed satisfactory internal consistency (Cronbach's α = 0.72) (21,22).

According to study done on validity of the Spanish version of Suicide Behaviors Questionnaire-Revised among 411 in patients with short-term Suicide risk, the internal consistency (the Cronbach's alpha was 0.64) of the SBQ-R indicates that its items maintain a moderate degree of interrelation in a population with severe mental disorders. Cut-off point was 11 with the negative predictive value (NPV) of 98.3% and the positive predictive value (PPV) 8.7% at the area under the ROC curve of 0.74.

The relative risk (RR) for suicide attempts in patients with suicidality with scores ≥11 was 5.2. It was found a positive correlation with Beck's Hopelessness Scale (BHS) and suicide risk assessed by the investigators whereas the correlation with the Reasons for Living Inventory (RFL) was negative(13).

Study conducted on the psychometric characteristics of the Suicidal Behaviors Questionnaire-Revised (SBQ-R) among non-clinical sample of Nigerian university students showed that the questionnaire demonstrated an excellent performance against the mini international neuro psychiatric interview (MINI) suicidality module categorization. And have a modestly satisfactory reliability (Cronbach's alpha 0.80), positive correlations with the HADS-Anxiety and Depression subscales, and the GHQ-12. Cut-off score was 8(AUC=0.93) with highest accuracy of 0.88, sensitivity of 88.2% and specificity 87.5%. The item-to-total scale correlation ranged from 0.60 to 0.74 (14).

CHAPTER THREE

OBJECTIVES

3.1. General Objective

To assess the validity and reliability of Suicidal Behaviors Questionnaire Revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic 2020.

3.2. Specific Objectives

To assess semantic validity of Suicidal Behaviors Questionnaire Revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic 2020.

To assess content validity of Suicidal Behaviors Questionnaire Revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic 2020.

To assess criterion validity of Suicidal Behaviors Questionnaire Revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic 2020.

To assess reliability of Suicidal Behaviors Questionnaire Revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic 2020.

CHAPTER FOUR

METHODS AND MATERIALS

4.1. Study Area and Period

This study was conducted from July 1 to August 30 2020 in Jimma University medical center psychiatry clinic which is located in Jimma town. Jimma is located at a distance of 352 km southwest of Addis Ababa, Ethiopia. Jimma University medical center it is the only teaching and referral hospital in the southwestern part of Ethiopia, provides services for approximately 15,000 inpatients and 160,000 outpatients annually. An average of 750–1000 psychiatric patients has a follow-up visit at the psychiatric clinic every month among those an average of 110 patients visit psychiatric clinic for the first time. The psychiatry clinic delivers 24-hours emergency service, outpatient regular service, and inpatient/admission services. The clinic has more than 40 inpatient beds for general adult and substance abuse detoxification treatment(23). Currently psychiatry department has three psychiatrist, 15 BSc psychiatric nurses, two Clinical psychologist, 12 MSc in ICCMH, one PhD and two PhD fellow mental health professionals.

4.2. Population

4.2.1. Source of population

All people with mental illnesses on follow up treatment at Jimma University Medical Center, psychiatric clinic during data collection period.

4.2.2. Study population

Samples of people with mental illnesses on follow up treatment at outpatient department of Jimma University Medical Center, psychiatric clinic during the data collection period.

4.3. Eligibility criteria

4.3.1. Inclusion criteria

All people with mental illnesses registered and following treatment at outpatient department.

All people with mental illnesses have been on treatment for the duration of less than two months.

Afaan Oromoo language speaker

4.3.2. Exclusion criteria

Acutely ill patients/ acutely disturbed patients

Patients started medication before visiting JUMC psychiatric clinic and if total duration of treatment is equal to/more than two months.

4.4. Study design

Institutional based cross-sectional study design was conducted

4.5. Sample size determination and sampling technique

Sample size was determined by using sensitivity and specificity for single validation test formula by considering the following assumption

- Sample size (n) based on Sensitivity= $\frac{Z^2_{1-\alpha/2} \times SN \times (1-SN)}{L^2 \times P}$

- Sample size (n) based on Specificity = $\frac{Z^2_{1-\alpha/2} \times Sp \times (1-Sp)}{L^2 \times (1-P)}$

Where n= required sample size,

SN= Anticipated sensitivity (88.2%)

SP= Anticipated specificity (87.5%)

SN&SP taken from study conducted in Nigerian (14).

α = Size of the critical region (1-α is the confidence level) 5%

$Z_{1-\alpha/2}$ = Standard normal deviate corresponding to the specified size of the critical region (α) 95 %(1.96)

L= Absolute precision desired (10%)

P=Prevalence of suicidal behavior among people with mental illness. (Taken from the result done in Jimma , prevalence of suicidal behaviors among people with mental illness attending treatment at JUTH psychiatry clinic was 28.6% (11)

Sample size (n) based on Sensitivity= $\frac{Z^2_{1-\alpha/2} \times SN \times (1-SN)}{L^2 \times P}$

$$n = \frac{(1.96)^2 \times 0.882(1-0.882)}{(0.1)^2 \times 0.286} = 140$$

- Sample size (n) based on Specificity = $\frac{Z^2_{1-\alpha/2} \times Sp \times (1-Sp)}{L^2 \times (1-P)}$

$$n = \frac{(1.96)^2 \times (0.875) \times (1-0.875)}{(0.1)^2 \times (1-0.286)} = 67$$

Total of 140 participants were selected to get the maximum sample size, hence adding 10% non-respondent rate final sample size was **154.**

4.6. Sampling Technique

Consecutive sampling method was applied to select participants until it reached the total sample size.

4.7. Study Variables

- Socio demographic and socioeconomic characteristics
- Semantic validity of SBQ-R
- Criterion validity of SBQ-R
- Content validity of SBQ-R
- Reliability of SBQ-R

4.8. Data Collection Instrument and Procedure

Socio-demographic information like; age, sex, marital status, educational status, occupation, residency with Suicidal Behaviors Questionnaire-Revised (SBQ-R) and Mini International Neuropsychiatric Interview (MINI) was used for data collection.

Two psychiatry professionals and two clinical nurses were used for data collection after completing practical training on the procedures of data collection and standardization of interviews. Additionally one MSc in mental health professional was involved as supervisor for completeness of questionnaire, deal with missing data and consistence. Face-to-face interview method was used for data collection on 154 people with mental illness. The item to sample ratio was 1:39 and this is considered as adequate. Half of the participants were initially interviewed by clinical nurses using SBQ-R and again those who are interviewed by using SBQ-R at the same day with double blinded were clinically interviewed by psychiatric professional guided by MINI for Suicide. The remained half of participants were first interviewed by BSc psychiatry professional using MINI prepared for suicide and later they were interviewed by clinical nurse using SBQ-Since there was Covid-19 (corona virus) pandemic necessary protection method like social distance 2 meter were kept and each data collectors used face mask.

4.8.1. Suicidal Behaviors Questionnaire-Revised (SBQ-R)

The SBQ-R consists of 4 questions. The first question explores whether the respondent has ever entertained thoughts of suicide or engaged in suicidal behavior in his/her lifetime. The second question evaluates how frequent over the preceding 12 months, the respondents has been having ideation of suicide. The third questions make enquires about threats to engage in suicidal behavior, while the last question explores the probability of subjectively reporting behaviors that are suicidal in nature. The first item is scored on a Likert scale of 1(never) to 4a (I have attempted to kill myself, but did not want to die) and 4b (I have attempted to kill myself, and really hoped to die).Question 2 is measured on a Likert scale of 1 (never) to 5(very often), while question 3 is rated on a scale of 1 (no) to 3a (Yes, more than once, but did not really want to die) and 3b (Yes, more than once, and really wanted to do it). The last question is rated on a 7point Likert scale; 0: (Never) to 6; (Very likely). The aggregate score on the SBQ-R range from 3 to 18, with higher scores reflecting greater risk for suicidal behaviors.

The authors reported that the most appropriate total cut-off score for the identification of high suicidal risk individuals on the 4 item SBQ-R were 7 for the non-clinical and 8 for the psychiatric inpatient samples(7).

4.8.2. MINI Suicidality module

Mini International Neuropsychiatric Interview (MINI) explores the risk of suicide through a list of questions divided into 2 aspects (In the past one month and lifetime).

- The five questions evaluating suicide risk in the previous one month include;

C1: In the past month did you think that you would be better off dead or wish you were dead? (Score 1 point.)

C2: In the past month did you want to harm yourself? (Score 2 points)

C3: In the past month did you think about suicide? (Score 6 points)

C4: In the past month did you have a suicide plan? (Score 10 points)

C5: In the past month did you Attempt suicide? (Score 10 points)

- The lifetime aspect has only one item

C6: Did you ever make a suicide attempt? (Score 4 points)

The response to each question is a dichotomous 'yes' or 'no 'and the total score is 33. Score 1-5 indicate low suicide risk, 6-9 indicate moderate suicide risk, and ≥10 indicate high suicide risk(24). Individuals who answered 'yes' to items C1 or C2 or C6 were categorized as low suicide risk, while, those that responded positively to the items C3 or C6 or the combination of both C2 and C6 were categorized as moderate suicide risk. A response of 'yes' to question C4 or C5 or both questions C3 and C6 indicates a high suicide risk.

The MINI suicidality module was employed as a 'gold standard' against which the ability of the SBQ-R was tested to examine its feasibility as a screening tool for the identification of the patient at a high risk of suicide at a particular cut-off score. Two BSc psychiatry professionals were involved with interviewing the patients with this module.

4.9. Data Quality Control

Before data collection, two day training was given for data collectors (two clinical nurses and two BSc psychiatry professionals independently). The training focused on the objective of the study, brief explanation about the tool and how they fill the tool as well as the issue of consent and privacy of participants. All tools were translated to Afaan Oromoo language. The scale was pretested on fifteen people with mental illness at Agaro hospital where they were encouraged to comment on the acceptability, clarity and cultural equivalence of items. They were reached in common understanding before the actual data collection. The missing data, completeness and consistence were checked by principal investigator (supervisor).

4.10. Data Process and Analysis

After checking of the data for completeness, missing value and coding of questionnaires, the data was entered by using EPI data version 3.1 and then was exported to SPSS version 25 for analysis. Reliability, Semantic validity (Afaan Oromoo version), Content validity and Criterion validity were analyzed using the following statistical analysis.

Descriptive statistics was analyzed for socio demographic and item characteristics. The internal consistency reliability (Cronbach's alpha) for the SBQ-R was calculated. Pearson correlation coefficients were applied to evaluate Criterion validity (Concurrent validity) with MINI suicidality. Sensitivity, specificity and area under the curve (AUC) for various SBQ-R cut-off scores were calculated with receiver operating characteristics (ROC) analysis. Optimal cut- off point was calculated from Youden's Index (Sensitivity+ Specificity -1) by maximizing Sensitivity + Specificity across various cut-off points.

Inter-rater reliability: Kappa coefficient was used for analysis of inter-rater reliability. Prior to main data collection period two data collectors (two BSc psychiatry professionals) were interviewed twenty psychiatry patients admitted at JUMC psychiatric ward by using the MINI suicidality module to identify the difference between two raters.

Semantic Validity: SBQ-R was translated to Afaan Oromoo language by two bilingual Instructors from Jimma University; Afaan Oromoo department. The forward-translated instrument was then back-translated into English by professionals (two ICCMH) who were blinded in the initial translation. Finally difficult items in the translation were noted for further investigation.

Content validity: After forward and back ward translation the three professionals(experts) from different parts of the region (Oromia) blindly were requested to score new version of SBQ-R items to calculate content validity index (CVI) based on the following assumptions;(1 = Not relevant), (2 = Relevant but needs revision), (3 = Relevant with minor revision),(4 = Relevant). Item-level content validity index (I-CVI) - The proportion of content experts giving item a relevance rating of 3 or 4.I-CVI = (agreed item)/ (number of expert).

The translated (Afaan Oromoo) version of SBQ-R tool was pre-tested to fifteen people with mental illness at Agaro hospital to assess the conceptual equivalence or content validity of the tool.

The interviewer used the following criteria to identify problematic items.

- When the respondent disclosed that the meaning of the item or specific word was not clear.
- When the respondent gave a response but failed to elaborate on what he/she understood from the question.
- When respondent gave examples that indicated there was miss-conceptualization of what the question was intended to elicit.

The interviewer made a note of problematic items. The input of the patients was also presented for the group (translators and principal investigator). Discrepancies in conceptual and semantic equivalence were resolved through discussion by involving both translators with principal investigator. The final translated items were used for data collection are generated through consensus on the wording; clarity and conceptual equivalence of items.

4.11. Operational Definitions

Suicide- A fatal self-injurious act with some evidence of intent to die(3).

Suicidal behavior -Ranges from thoughts of suicide to suicide attempts to death by suicide(3).

Suicide attempt- A potentially self-injurious behavior associated with some intent to die(3).

Reliability: Accuracy, stability and predictability of a research instrument(25).

Validity: the accuracy with which the scale (SBQ-R) Measure what it claims to measure (Suicidal behavior) (26).

Psychometrics: It is a technique used to measure reliability and validity of a test (SBQ-R)(26).

Internal consistency reliability: Measures the consistency of results across items within a test. (That means the homogeneity or the saturation of items included in SBQ-R to measure Suicidal behavior. Cronbach's alpha coefficient (α)> 0.9 – Excellent, > 0.8 – Good, > 0.7 – Acceptable, > 0.6 – Questionable, > 0.5 – Poor, and < 0.5 – Unacceptable"(27)

Criterion validity considers whether scores on the instrument agree with a definitive, "gold standard" measurement of the same theme. (The agreement or correlation of new measure (SBQ-R) with gold standard (MINI) at the same point in time(26).

Receive Operating Characteristic (ROC): It is graphical display of sensitivity (TPR) on y-axis and (1 – specificity) (FPR) on x-axis for varying cut-off points of test values and optimal cut-off for SBQ-R to correctly identify people with Suicidal behavior(24,28).

Sensitivity or true positive rate (TPR): It is conditional probability of correctly identifying the diseased. (That means the ability of SBQ-R to identify correctly those who have Suicidal behavior)(26,28).

Specificity or true negative rate (TNR): It is conditional probability of correctly identifying the non-disease. (That means the ability of SBQ-R to identify correctly those who don't have Suicidal behavior) (26,28).

Positive likelihood ratio: refers to the likelihood of a patient with the suicidal behavior to be screened as positive compared to a patient without the suicidal behavior.

Negative Likelihood ratio: refers to the likelihood of patient with suicidal behavior to be screened negative as compared to a patient without suicidal behavior.

Acutely disturbed patients: are patients those are not cooperative/risk for self /other like aggressive and need emergency management.

4.12. Ethical Consideration

The research proposal was submitted to Jimma University Institutional Review Board (IRB) to obtain ethical clearance, and letter of recommendation. Informed consent was obtained from each patient and the information from individual patient was kept confidential. Finally those patients who were identified as risk for suicide were contacted again and immediately linked to mental health professionals for further management.

4.13. Dissemination of results

After completion of the research and finalizing the report, the finding of the study will be disseminated to all relevant stakeholders through resentation and publication. Copies of the research thesis will be submitted to psychiatry department, JU research and dissemination office, JU medical director and specifically to JUMC, Psychiatry clinic coordinator and for other concerned institutions and stake holders for possible applications of the study findings.

CHAPTER FIVE

RESULT

5.1. Socio-demographic characteristics of participants

A total of 154 patients participated in the study with a 100% respondent rate. The participant's age range from 18 to 75 years and the mean age was 31.2(SD ±11.6) years. The majority of the participants were 103 (66.88%) males, 91(59.09%) married, 137(88.96%) Oromo and 103(66.88%) were Muslim. Out of all participants 105(68.18%) were from rural, 86(55.84%) attend education up to grade eight and 67(43.51%) farmers. Of all participants 60(38.96%) were diagnosed with Schizophrenia and 43(27.92%) newly visited patients.

Table 1: Socio-demographic characteristics of people with mental illnesses JUMC, 2020, (N=154).

Variable	Category	Frequency	Percent (%)
Age of participants	18-23	43	27.92
	24-29	37	24.03
	30-35	34	22.08
	36-41	19	12.34
	42-47	9	5.84
	48-53	3	1.95
	54-59	1	0.65
	60-65	5	3.25
	66-71	2	1.30
	72-77	1	0.65
Sex	Male	103	66.88
	Female	51	33.12
Marital status	Single	56	36.36
	Married	91	59.09
	Divorced	5	3.25
	Widowed	2	1.30
Ethnicity	Oromo	137	88.96
	Amhara	11	7.14
	Kafa	6	3.90
Religion	Muslim	103	66.88
	Orthodox	35	22.73
	Protestant	16	10.40
Residency	Urban	49	31.82
	Rural	105	68.18
Educational status	Illiterate	20	12.99
	Primary	86	55.84

	Secondary	30	19.48
	College and above	18	11.69
Occupation	government worker	10	6.49
	Farmer	67	43.51
	Merchant	6	3.90
	Housewife	35	22.73
	daily worker	11	7.14
	Student	18	11.69
	Others	7	4.55
Diagnosis	Brief psychosis	11	7.14
	Schizophreniform	10	6.49
	Schizophrenia	60	38.96
	Major depressive disorder	40	25.97
	bipolar disorder	26	16.88
	Others	7	4.55
Duration of treatment of participants	Not started medication(New patients)	43	27.92
	2 weeks	33	21.43
	3 weeks	3	1.95
	4 weeks	19	12.34
	6 weeks	32	20.78
	7 weeks	24	15.58

Others= Means groups which are not mentioned in any category like retirement or individual who were not involved in any of above listed categories in occupation, Anxiety and schizoaffective disorders in diagnosis.

5.2 Semantic validity

Suicidal behaviors questionnaire revised was translated to Afaan Oromoo language by two bilingual Instructors from Jimma University; Afaan Oromoo department. The forward-translated instrument was then back-translated into English by two psychiatry professionals who were blinded in the initial translation. There was no discrepancy between the original English version of SBQ-R items and the new (Afaan Oromoo) version of SBQ-R items. Finally the team reached to a consensus that the Afaan Oromoo version of SBQ-R was understandable and culturally acceptable for language speakers. The Afaan Oromoo version of SBQ-R is indicated in Annex II

5.3. Content validity

The translation of the original SBQ-R to Afaan Oromoo didn't show any problem and also no items had conceptual problems. Prior to main data collection fifteen respondents were asked to judge the clarity, simplicity, understandability and conceptuality of each item of SBQ. Three professionals blindly were requested to score new version of SBQ-R items and content validity index (CVI) from three raters were 0.98 indicated excellent agreements.

5.4. Reliability

Inter-rater reliability of SBQ-R between the two data collectors was a kappa coefficient of 0.92 and internal consistency reliability (Cronbach's alpha) of the Afaan Oromoo version of SBQ-R was (α =0.88). Item 3 was accountable for the low alpha value. Removing item 3(have you ever told some one that you were going to commit suicide, or that you might do it?) of the questionnaire did improve the α coefficient value to 0.94. The corrected item-total correlation coefficient ranged from 0.46 to 0.91(see table 2). The inter-item correlation matrix was lowest (0.35) between item 3 (have you ever told some one that you were going to commit suicide, or that you might do it?) and item 4 (How likely is it that you will attempt suicide someday?)Whereas it was highest (0.91) between item 1 (Have you ever thought about or attempted to kill yourself**?**) and item 2 (How often have you thought about killing yourself in the past year?).(See table 3). All items were significantly correlated($r \geq 0.3$).

Table 2: SCALE MEAN, ITEM-TOTAL CORRELATION AND CRONBACH'S ALPHA FOR SBQ-R ITEMS AMONG PEOPLE WITH MENTAL ILLNESSES JUMC, 2020(N=154).

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Thought/attempt of killing self	3.87	7.06	0.91	0.86	0.76
How often thought to killing self this year	3.90	6.85	0.90	0.85	0.77
Have you told to others about killing self	4.68	12.43	0.46	0.25	0.94
How likely you will attempt suicide someday	5.05	6.99	0.80	0.69	0.82

Table 3: INTER-ITEM CORRELATION FOR SBQ-R ITEMS AMONG PEOPLE WITH MENTAL ILLNESSES JUMC, 2020(N=154).

Inter-Item Correlation Matrix				
	Thought/attempt of killing self	How often thought to killing self this year	Have you told to others about killing self	How likely you will attempt suicide someday
Thought/attempt of killing self	1.00	0.91	0.46	0.82
How often thought to killing self this year	0.91	1.00	0.50	0.79
Have you told to others about killing self	0.46	0.50	1.00	0.35
How likely you will attempt suicide someday	0.82	0.79	0.35	1.00

5.5. Criterion validity

The Receiver Operating Characteristic (ROC) curve was generated to determine the ideal cut-off score. As showed in table 3, it was observed that SBQ-R demonstrated excellent performance against the MINI suicidality module. The below figure showed that the area under the curve (AUC) for the SBQ-R to predict Suicidal behavior was 0.95 (95%, CI= 0.92 - 0.98). As a suicide risk screening tool SBQ-R demonstrated satisfactory psychometric properties with a maximum youden's index of (0.83) at a total cut-off score of 7 which has a sensitivity of 95%, a specificity of 88%, and a positive predictive value of 76% and negative predictive value of 98% among people with mental illness. There was no difference in cut-off scores across males and females.

As cut- off score of SBQ-R increases, specificity and positive predictive value increases whereas sensitivity and negative predictive value decreases. The MINI suicidality evaluation showed that 42 (27.3%) of participants had suicidal behavior and the prevalence become increased to 29.2% by using SBQ-R screening tool at 7 cut off point.

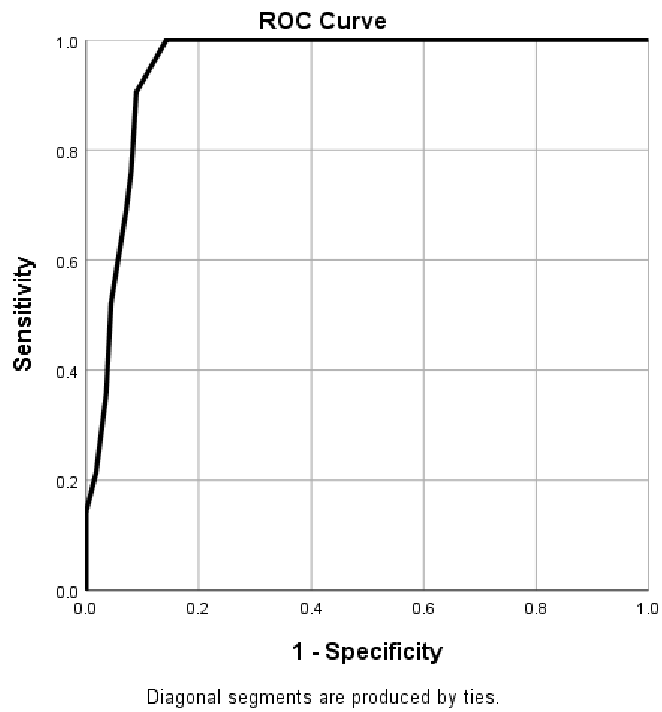

Figure 1: ROC CURVE AND AUC TO DETERMINE APPROPRIATE CUT OFF POINT OF SBQ-R AMONG PEOPLE WITH MENTAL ILLNESS JUMC, 2020(N=154).

Table 4: SENSITIVITY ,SPECIFICITY, YOUDEN'S INDEX, POSITIVE AND NEGATIVE PREDICTIVE VALUE AT DIFFERENT CUT-OFF SCORE OF SBQ-R AMONG PEOPLE WITH MENTAL ILLNESS JUMC, 2020(N=154).

Cut off Score	Sensitivity	Specificity	Youden's Index	LR+	LR-	PPV	NPV
5	0.98	0.81	0.79	5.16	0.02	0.66	0.99
6	0.98	0.84	0.82	6.13	0.02	0.70	0.99
7	**0.95**	**0.88**	**0.83**	**7.92**	**0.06**	**0.76**	**0.98**
8	0.91	0.91	0.82	10.11	0.10	0.79	0.96
9	0.76	0.92	0.63	9.50	0.26	0.78	0.91
10	0.69	0.93	0.62	9.86	0.33	0.78	0.89
11	0.52	0.96	0.48	13.00	0.50	0.82	0.84
12	0.36	0.96	0.32	9.00	0.67	0.79	0.80
13	0.21	0.98	0.19	10.50	0.81	0.82	0.77

Bold indicated an optimum cut-off point corresponding with diagnostic properties. PPV: Positive predictive value, NPV: Negative predictive value, LR+: Positive likelihood ratio, LR- : Negative likelihood ratio.

CHAPTER SIX

DISCUSSION

This study was tried to demonstrate the psychometric properties of SBQ-R to detect suicidal behaviors for Afaan Oromoo speakers' people with mental illnesses. The semantic equivalence of SBQ-R items was acceptable. The translation was well done with a clear meaning of items and also ensured that the respondents understood what the question was intended to measure. The value of reliability and the item-total score of each item also showed that the original English version of SBQ-R was appropriately translated to Afaan Oromoo and understand by participants.

Inter-rater reliability of SBQ-R between the two data collectors was a kappa coefficient of 0.92 which showed that there was an excellent agreement of the questionnaire between the data collectors. This study showed that internal consistency reliability (Cronbach's alpha) of the Afaan Oromoo version of SBQ-R was (α =0.88).This finding is similar to Study done on validation of Suicidal Behaviors Questionnaire-Revised (SBQ-R) among clinical and non-clinical sample which showed moderate alpha coefficient for psychiatric adolescent in patients (0.88) and psychiatric adult in patients (0.87)(7). This study showed that all items of Afaan Oromoo version of SBQ-R were significantly correlated. The inter-item correlation matrix ranged from 0.35 to 0.91 between (item3 & item 4) to between (item 1 & item 2) respectively. The inter-correlation of items of SBQ-R reported from a study done in the clinical and non-clinical sample was ranged from 0.62 between item 3 (threat) and item 4 (likely hood) to 0.76 between item 1(past attempt) and item 2(frequency of thought about killing self) for adult inpatients (7).

The internal consistency reliability of SBQ-R in this study was higher than the study conducted in the University of Lodz among university students on the polish adaptation of SBQ-R (α=0.83), in German among general populations (α=0.72), in Nigerian university among university

students (α=0.80) and Spanish version of SBQ-R among patients with short-term suicide risk (α=0.64)(13,14,21,22).

The variation of coefficients may be related to population or cultural difference and sampling effects, which lead to a reduction in the subject variance and this reduces the size of the consistency coefficients.

The Receiver Operating Characteristic (ROC) curve was generated to determine the ideal cut-off score. This study showed a cut off-score of 7 and (AUC=0.95) at a sensitivity of 95% and specificity of 88% for the Afaan Oromoo version of SBQ-R as a screening tool of suicidal behavior among people with mental illness. A study done by Osman on validation of Suicidal Behaviors Questionnaire-Revised (SBQ-R) among clinical and non-clinical sample showed the best cut-off score that maximized the sensitivity and specificity rates among the non-clinical population was 7 whereas 8 for clinical sample (7). In contrast from this study found maximum sensitivity and specificity at cut-off score 7. This study showed the cut-off score lower than that of study done in University of Lodz among university students on polish adaptation of SBQ-R (cut-off score =9), in Nigerian university among university students (cut-off score =8) and Spanish version of SBQ-R among patients with short-term suicide risk (cut-off score =11) (13,14,21). The variation of this cut-off score may be the difference in sample size, cultural context of the population and the utility of tool used as gold standard. A study done in Nigerian university among university students used the same gold standard tool(MINI suicide module) used in this study the difference could be that MINI suicide module has been previously utilized in the evaluation of suicide risk among Nigerian clinical and non-clinical populations. A study on Spanish version of SBQ-R was from predictive validation, that the new measurement was applied in a prospective study and the results compared with subsequent patient outcomes like mortality or discharge.

This study showed that the AUC of SBQ-R was 0.95 which was higher than study done in Nigerian university (AUC=0.93), Poland (AUC = 0.92) and Spanish version (AUC=0.74)(13,14,21).

The AUC from this study was lower than study conducted by Osman on validation of Suicidal Behaviors Questionnaire-Revised (SBQ-R) among clinical and non-clinical sample (AUC of psychiatric adolescent in patients (AUC =0 .96) (7). This may be due to difference in sample size, cultural context of the population and the utility of tool used as gold standard.

When evaluating a tool for screening purposes, sensitivity should be regarded as more important in order to decrease the risk of false negatives, because if it is left the case and delays the treatment it may lead to high mortality or morbidity which costs individual a lot. But it is important to consider both sensitivity and specificity of screening tool. The score of 7 and above indicates individuals with high risk for suicide.

The strength of this study is that it could be the first study in Ethiopia to examine the application of SBQ-R screening tool among Afaan Oromoo speaker people with mental illnesses at outpatient department of Jimma University Medical Center.

LIMITATION OF THE STUDY

- This study was performed in one hospital in south west Ethiopia and the populations were not diverse so generalizing this result to other parts of Oromia zones or in the other parts of the country among those Afaan Oromo language speakers may not appropriate.
- The other limitation of this study could be that it does not allow doing some tests like test-retest reliability and predictive validity that affects the score of SBQ-R because of the participants were contacted only once.
- The MINI suicide module used as the gold standard was not highly utilized in our set up which may affect the result
- Because both SBQ-R and MINI suicide module were administered with a short period of time recall bias may occur.
- Due to the presence of a pandemic of Covid-19 (Corona virus) the numbers of patients visiting the hospital were decreased than usual which could result in extension of data collection period.

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATION

7.1. Conclusion

The study of psychometric properties of Afaan Oromoo version of SBQ-R showed high reliability (α =0.88) and capacity to identify people at high risk of suicide. A score of 7 and above with a sensitivity 95%, a specificity 88% and (AUC =0.95) is appropriate to screen suicidal behavior among people with mental illnesses. There is a limited study about the validation of SBQ-R and psychometric properties of SBQ-R could vary based on the different cultural context of population so studying psychometric properties of SBQ-R with more ethnically diverse population would be beneficial. Since SBQ-R can be applied to screen suicidal behaviors for both clinical and non-clinical populations further study of its psychometric properties is necessary among both clinical and non-clinical groups.

7.2. Recommendation

The following recommendations are suggested based on major findings.

- For psychiatry department and mental health professionals

-You can use SBQ-R screening tool to identify the risk of suicide among people with mental illnesses in psychiatry clinic.

-SBQ-R is brief suicide assessment scale that could easily applied even by non-psychiatry professionals in other disciplines so giving training regarding suicide risk assessments for non-psychiatry professionals is recommended.

- For Future Researchers:

- The finding of this study is recommended to use as a validated tool to researchers who are interested in this fields.

-Further study of psychometric properties of SBQ-R across different languages and different setting is an eligible area to be studied in the future

-This study will encourage additional studies among other clinical populations of patients with chronic psychiatric disorders, medical illness and non-clinical populations

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ANNEXS

Annex-I English Version Questionnaires

Part I: Information Sheet and Consent Form

Dear Sir/madam;

Good morning/Afternoon, my name is ______________________. I am research assistant and working with Mr. Dekeba Teshome from Jimma University. He is doing a research on the Psychometric property of suicidal behaviors questionnaire revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic, as partial fulfillment for Degree of Masters Science in integrated clinical and community mental health. I am going to give you information and invite you to be part of this research. If you agree to participate, you will be required to fill out a questionnaire, which will take about 10 minutes of your time. The information that you will obtain using this interview will be used only for research purpose and also I need to assure you that confidentiality is our main quality. Therefore; I politely request your cooperation to participate in this interview. You do have the right not to respond at all or to withdraw in the meantime, but your input has great value for the success of our objective.

Did you agree _____________?

Did not agree ______________

Thank you for your cooperation!!

Part II:Assessment of Suicidal behavior Using SBQ-R

Section I: Socio demographic and socio economic characteristics

S.N	Questions	Response
101	Age of respondent	------------
102	Sex	1.Male 2.Female
103	Marital status	1.Single 2.Married 3.Divorced 4.Widowed
104	Ethnicity	1.Oromo 2.Amhara 3.Kefa 4.Other(Specify)------ ____________
105	Religion	1.Muslim 2.orthodox 3. Protestant 4.Other(Specify)------ ___________
106	Residency	1. urban 2. rural
107	Educational status	1.Illiterate 2.primary 3. Secondary 4.college and above
108	Occupation	1. Government worker 2.farmer 3.merchant 4. House wife

		5. Daily laborer 6.Other(Specify)----- _
109	Diagnosis	1.Briefpsychotic disorder 2.schizophreniform disorder 3.Schizophrenia 4.Major depressive disorder 5.Bipolar I disorder 6.Other(Specify)-----
110	Duration of treatment (how long since he/she started medication?	………………days/weeks

Section II: Suicidal Behavior Questionnaire-Revised (SBQ-R) Items

S.N	Questions	Response
201	Have you ever thought about or attempted to kill yourself**?**	1.Never 2. It was just a brief passing thought 3a.I have had a plan at least once to kill myself but did not try to do it 3b.I have had a plan at least once to kill myself and really wanted to die 4a.I have attempted to kill myself but did not want to die 4b.I have attempted to kill myself, and really hoped to die
202	How often have you thought about killing yourself in the past year?	1. Never 2. Rarely (1time) 3. Sometimes (2 times) 4. Often (3-4 times) 5. Very Often (5 or more times)
203	Have you ever told some one that you were going to commit suicide, or that you might do it?	1. No 2a.Yes, at one time, but did not really want to die 2a.Yes, at one time, and really wanted to die 3a.Yes, more than once but did not want to do it 3b.Yes, more than once, and really wanted to do it
204	How likely is it that you will attempt suicide someday?	0. Never 4.likely 1. No chance at all 5.Rather likely 2. Rather unlikely 6.Very likely 3. Unlikely

Section III: Questioners for Assessment of Suicidal behavior by MINI suicide module

S.no	Questions	Response
301	In the past month did you think that you would be better off dead or wish you were dead?	1.Yes 2.No
302	In the past month did you want to harm yourself?	1.Yes 2.No
303	In the past month did you think about suicide?	1.Yes 2.No
304	In the past month did you have a suicide plan?	1.Yes 2.No
305	In the past month did you attempt suicide?	1.Yes 2.No
306	Did you ever make a suicide attempt?	1.Yes 2.No

Annex-II Afaan Oromoo Version Questionnaires

Kutaa I;Unka Odeffannoo fi Waliigaltee

Obboo/Addee;Akkam jirtu Ani maqaan koo______________________dha.

Ani hojjataa Giddugala waldhaansa Fayyaa Yuunivarsiitii Jimmaa yommuun ta'u qorannoo kana irratti akka gargaaratti, Obboo Dhaqqabaa Tashoomaa wajjin hojjataa jira.Inni baratаа digirii lamaffaa yoo ta'u, ulaagaa eebbifamuuf barbaachisu guutuuf qorannoo mataduree "Psychometric property of suicidal behaviors questionnaire revised (SBQ-R) screening tool among people with mental illnesses at outpatient department of Jimma University Medical Center, psychiatric clinic, 2020".jedhu irratti dhukkubsattoota deddebidhan yaalaman irratti kan hojjachaa jirudha.Akka hirmaataa qorannichaa taataniif ibsaa fi ragaa gahaa ta'e isin biraan gahuun barbaada. Eeyyamamaa yoo taatan gaaffii afaanii armaan gaditti dhiyaataniif yeroo turtii daqiiqaa kudhan hin caalleef akka nuuf hirmaattan isin gaafanna.ragaan isin nuuf laattan barbaachisummaa qorannichaaf yoo ta'u, qaama qorannicha gaggeessu irraa kan hafe qaama biraatti kan hin dabarsine ta'uun keenya gaarummaa keenya ibsa.kanaafuu qorannoo kana irratti akka nuuf hirmaattaniif kabajaa fi ulfinaan isin gaafanna.yeroo barbaaddanitti diduus ta'ee addan kutuuf mirga guutuu qabdu.haata'u malee hirmaannan keessan kaayyoo qorannichaa galmaan gahuuf gahee guddaa qaba.

Eeyyamamoo dha_____________ Eeyyamamoo miti ______________

Maqaa ogessa raga funaanuu…………………mallattoo……….guyyaa………

Maqaa to'ataa………………. Mallattoo…………guyyaa………….

Kutaa II:Odeeffannoo walii galaa kan deebii kennaa

Lakk.	Gaafilee	Deebii
401	Umrii	------------
402	Saala	1.Dhiira 2.Dhalaa
403	Haala fuudha fi heerumaa	1.kan hinfuune/hin heerumne 2.kan fuudhe/heerumte 3.kan hiike/hiikte 4.kan jalaa du'e/duute
404	Saba	1.Oromoo 2.Amaaraa 3.Kafaa 4.Kanbiraa(haa ibsamuu)------
405	Amantaa	1.Musliima 2.Ortodoksii 3. Protestaantii 4.Kanbiraa(haa ibsamuu)------
406	Iddoo jireenyaa	1. Magaalaa 2. Baadiyyaa
407	Sadarkaa barnootaa	1. Kan b/idilee hinbaranne 2.sadarkaa 1^{ffaa}(1-8) 3. Sadarkaa 2^{ffaa} 4.koolejjii fi ol
408	Hojii	1.Hojjataa mootummaa 2.Qoteebulaa 3.Daldalaa

		4. Haadha manaa 5. Hojjataa humnaa/hojii guyyaa 6. Kanbiraa(haa ibsamuu)------
409	Gosa dhukkubaa	1.Briefpsychotic disorder 2.schizophreniform disorder 3.Schizophrenia 4.Major depressive disorder 5.Bipolar I disorder 6.Other(Specify)-----
410	Hamma/turtii yeroo yaalamee (erga yaala jalqabee/dee)	Guyyaa/turban………..

Kutaa III: Gaafilee” SBQ-R “waa’ee yaada fi gocha lubbuu ofii balleessuu

Lakk.	Gaafilee	Deebii
410	Takkaa of ajjeesuuf yaaddee ykn of ajjeesuuf yaalii gootee beektaa?	1 .Gonkumaa 2.xiqqoo yaada keessa na dhufee beeka 3a.yoo xiqqaate yeroo tokko of ajjeesuuf karoorseen ture garuu kana raawwachuuf yaalii tokkoyyuu hin goone 3b.yoo xiqqaate yeroo tokko of ajjeesuuf karoorseen ture akkasumas dhugumatti du’uuf fedhii guddaa agarsiiseen ture 4a.Of ajjeesuuf yaalii godheen ture garuu keessakootti du’uu hin barbaadun ture 4b.Of ajjeesuuf yaalii godheen ture,akkasumas du’uun abdiikoo isa xumuraa ture
411	waggaa darbe keessatti yeroo meeqa miirri of ajjeesuu sitti dhaga’amee beeka?	1.gonkumaa 2.yeroo tokko 3.darbee darbee 4.deddeebi’ee natti dhaga’ame(3-4) 5.yeroo baay’ee deddebi’ee(5 fi isaa ol)
412	Takkaa nama biraatti of ajjeesuu akka yaaddu ykn of ajjeesuuf akka jettu himtee beektaa?	1.lakkii 2a eyyee,yeroo tokko garuu du’uu hin barbaadun ture 2b.eyyee,yeroo tokko yaadeera, du’uufis fedha qaban ture 3a. eyyee yeroo tokkoo ol,garuummoo du’uu hin barbaadun ture 3b. eyyee yeroo tokkoo ol,du’uufis fedha qaban ture
413	Gara fuulduraatti guyyaa tokko carraan of ajjeesuu keetii jiraa?	0.Gonkumaa 1.carraan tokkoyyuu hin jiru 2.guutumatti waan jiru hin fakkaatu 3. hin beekamu(waan jiru hin fakkaatu) 4.eyyee jiraachuu danda’a ta’a 5.eyyee sirriitti jiraachuu danda’a 6.Eyyee carraansaa baay’ee bal’aadha

Kutaa IV: Gaafilee “MINI” Kan waa’e yaada fi gocha lubbuu ofii balleessuu

Lakk.	Gaaffilee	Deebii
301	Ji'aa darbee keessa otoon boqaadhe ykn otoon du'ee jette yaadde beekta?	1.Eyyeen 2. lakkii
302	Ji'aa darbee keessa of midhuuf yaadde beekta?	1. Eyyeen 2. lakkii
303	Ji'aa darbee keessa waa'e of ajjeessuu yaadde beekta?)	1. Eyyeen 2. lakkii
304	Ji'aa darbee keessa karoora of ajjeessuu qabda ture?	1. Eyyeen 2. lakkii
305	Ji'aa darbee of ajjeessuuf yaaltee beekta?	1. Eyyeen 2. lakkii
306	Kanaa duraa of ajjeessuf yaalii gootee jirtaa?	1. Eyyeen 2. lakkii

Declaration

I, undersigned, declare that this research paper was my original work, has not been presented for a degree in this or other university and that all sources of materials used for this have been acknowledged.

Name ________________________________

Signature _____________________________

Date of submission ______________________

This research paper has been submitted with my approval as university advisor:

Name of first advisor	signature	date
___________	______________	______________
Name of second advisor	signature	date
____________	______________	______________
Name of internal examiner	signature	date
____________	______________	______________