



PREVALENCE OF COMMON MENTAL DISORDERS AND ASSOCIATED FACTORS AMONG PATIENTS WITH CHRONIC SKIN DISEASE IN ETHIOPIA: A MULTI-CENTER CROSS-SECTIONAL STUDY.

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Addis Ababa, Ethiopia

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ABSTRACT

Background: Skin diseases are frequent all over the world and put individuals at risk for mental disorders, which can affect the course of the illness and the therapeutic outcome. The frequency of prevalent mental illnesses among Ethiopian individuals with chronic skin conditions was not well studied.

Objective: To assess the prevalence of common mental disorders (CMDs) and associated factors among patients with chronic skin disease (CSD) in Ethiopia.

Methods: A cross-sectional study was conducted to assess the presence of CMDs among patients with CSD. The study utilized the Amharic version of Self-reporting questionnaires (SRQ-20) to collect data. The data were entered into and exported from Epi data manager version 4.6.0.4 to SPSS V 26 software to be analyzed. Descriptive statistics were computed using frequency, and bi-variable and multivariable logistic regression analyses were done to identify the associated factors. The study calculated AORs with 95% CIs, and variables with $P < 0.05$ were considered statistically significant.

Result: - The overall prevalence of CMDs among the participants was found to be 28.8% (95% CI: 23.5, 33.8). Factors which were significantly associated with CMDs were family history of mental illness, inadequate social support, co-occurring medical conditions, perceived stigma, skin disease duration longer than five years, and poor adherence to dermatological medications.

Conclusion- The study found that CMDs were common among patients with CSDs, and identified several determinants of CMDs in this population. Therefore, patients with CSDs should receive screening, early identification, and appropriate intervention for their mental health conditions, in addition to their dermatological complaints.

Key Words: Skin disease, mental disorder, Prevalence, Multi-center

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ABBREVIATION AND ACRONYMS

AHRI	Armauer Hansen Research Institute
ALERT	All Africa Leprosy Rehabilitation and Training Center
AOR	Adjusted Odds Ratio
CI	Confidence Interval
CMD	Common Mental Disorder
CSD	Chronic Skin Disease
DALY	Disability-Adjusted Life Year
DCSH	Dessie Comprehensive Specialized Hospital
DSM-5TR	Diagnostic Statistical Manual-5 Text Revision
ETB	Ethiopian Birr
GHQ	General Health Questionnaire
HADS	Hospital Anxiety and Depression Scale
ICD-11	International Classification of Disease
OPD	Outpatient Department
OSS-3	Oslo 3 Items Social Support Scale
QoL	Quality of Life
SPHMMC	Saint Paul's Hospital Millennium Medical College
SPSS	Statistical Package for the Social Sciences
SRQ-20	The 20 Item Self Reporting Questionnaires
WHO	World Health Organization

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1. INTRODUCTION

1.1 BACKGROUND

The skin being the largest organ in the human body, it can be affected by a wide range of disease conditions, some of which are known to be chronic and relapsing in nature (1) (2). Skin disease is a common condition that affects millions of people worldwide. These diseases can lead to significant physical, emotional, and social impairments, making it difficult for individuals to engage in daily activities (3). Skin diseases cause significant non-fatal disability worldwide, especially in resource-poor regions, like Ethiopia (4). Chronic Skin Diseases (CSDs) including Psoriasis, Atopic dermatitis, Vitiligo, and others have a highly destructive effect on a person's physical, social, and psychological well-being (5).

Mental disorder affects all segments of the population without ethnic variability. It is a basic human right for every individual (6). Common mental disorders (CMDs) are a group of distress states manifesting with anxiety, depression, and unexplained somatic symptoms, affecting people of different age groups, and causing suffering to individuals, families, and the general community (8). The estimated prevalence of common mental illness is estimated to be 22% and 36% in the general population and among patients with comorbid conditions, respectively (9).

Skin diseases put individuals at risk for mood and many anxiety disorders, which can affect the course of the illness and the therapeutic outcome. People with CSD need to cope with the physical discomfort it results and the psychological burden associated with how it makes them feel (11). Although CMDs are frequent among patients with skin disease, little is known about their identification by dermatologists (12). The psychological impact of skin diseases is often underestimated compared to that of other chronic diseases (3). This study therefore aims to fill this gap by investigating the prevalence of CMDs among patients with CSD in Ethiopia, taking into account the unique cultural and socioeconomic factors present in the region (13).

1.2 STATEMENT OF THE PROBLEM

The prevalence of anxiety (37.4%) and depression (23.6%) among common skin disorder patients is high. Although psychodermatologic conditions appear frequently in dermatology clinics, accounting for around 30.0% to 40.0%, little attention has focused on their specific contributions to the broader burden of skin illnesses (7). There is a paucity of studies regarding the prevalence and associated factors of CMD among people with CSD in Ethiopia and most previous studies have focused on the relationship between a single skin disease and their psychological state (5), (15).

Fundamental to the effective management of CSDs is a holistic assessment that addresses the psycho-social aspects of an individual's history and presentation as with other chronic medical conditions while evaluating a patient with a skin problem (2), (14). Thus, studies on the horizontal comparison of mental illnesses among CSD are rare and further research is needed (2), (16). Moreover, gross clinical observation signals that there seems to be a substantial number of patients seen in the study settings having a co-morbidity which requires adequate knowledge about the prevalence of CMD among CSD so that a multidisciplinary approach and effective treatment strategy to be implemented.

1.3 SIGNIFICANCE OF THE STUDY

As there have been limited studies done so far on the prevalence of CMD among patients with CSD in Ethiopia, this study will minimize the paucity of data on the area and give healthcare professionals insight into how common and which specific types of these mental disorders are more prevalent among patients with CSD in the country (5), (17).

In addition, it helps clinicians to be well informed about the burden of these mental illnesses among patients with CSD in the country and to keep these disorders in mind when faced with similar clinical presentations. Ultimately, these benefit patients by enhancing health care so that it can be used by clinicians making a scientific decision after early identification, screening, and treatment of CMD among CSD patients.

Because of the distinct bio-psychosocial impairments associated with CMDs, identifying the magnitude of CMDs and the factors associated with them can enhance the development of preventive strategies involving these populations.

The findings of the study will also be communicated and disseminated to help healthcare providers, policy developers, and strategic decision-makers impact future interventions at the individual, institutional, and national levels. Finally, it will encourage large-scale studies in the future serving as a stepping stone for other research on the same area of interest with greater generalizability.

2. LITERATURE REVIEW

2.1. Prevalence of CMDs

The worldwide prevalence of CSD has been steadily raised over time hand-in-hand with the rapid development of CMD among these patients. Although depressive and anxiety disorders are classified as separate diagnostic categories in the DSM-5TR, the concept of CMDs is valid in community settings because of the high degree of co-morbidity between these categories and the similarity in their epidemiological profiles and treatment responsiveness.

Based on a cross-sectional study conducted in an Indian dermatological clinic to assess the prevalence of both anxiety and depression, 28.7% were identified as having anxiety; whereas 17.33% had depression (25). A prospective cross-sectional study was conducted among Chronic Spontaneous Urticarial patients to determine the prevalence of depression and anxiety. Using anxiety and depression using the Aga Khan University-Anxiety Depression Scale, the overall prevalence was 26.7% (26).

In Brazil, using the SRQ-20 tool to analyze the psychological profile of 130 leprosy patients to evaluate the incidence of CMDs and screen patients with higher risk of psychological distress, the prevalence of CMDs was found to be 32.3% (23). In another cross-sectional research done among 206 Leprosy patients using the SRQ-20 with cut-off points 7 and above, the findings exhibited that the prevalence of CMD was 70.4% (24).

In India, a hospital-based case-control study was done on adult CSD patients for three or more months for attending the dermatology OPD. The study identified that clinically significant depression and anxiety were 45.54% and 41.58% of patients respectively, which ascertained that depression and anxiety were significantly higher in cases as compared to the controls (27). An international multicenter observational cross-sectional study was conducted

in 13 European countries of 4,994 participants with 3,635 patients and 1,359 controls in a dermatologic clinic, anxiety and depression were assessed with HADS and the finding displayed that about 10.1% of patients had depression and 17.2% of patients had anxiety (11).

A meta-analysis study was made by reviewing 5 medical databases on 101 articles to assess the prevalence of anxiety disorders and symptoms in Psoriasis patients. The findings revealed that there was a high prevalence of anxiety symptoms (34%) (28). Another Systematic review and meta-analysis study was done to point out the prevalence of psychiatric comorbidity in Psoriatic patients and a total of 34 papers reviewed that the most prevalent mental disorders were sleep disorders (average prevalence: 62.0%), anxiety (30.4%), and depressive (27.6%) (29).

A case-control was conducted in Iran to assess the prevalence of hopelessness, anxiety, and depression of Vitiligo patients in comparison with normal controls. The results gave away that anxiety and hopelessness levels were significantly higher in Vitiligo patients than healthy controls (30). In a contemporary study among 1176 Vitiligo patients, fifteen studies were reviewed in a systematic review and the general prevalence of anxiety among Vitiligo patients was 35.8% (31).

A cross-sectional study was conducted in the U.S. of 2893 adults to determine the association between Atopic Dermatitis and symptoms and diagnosis of depression and anxiety using the Anxiety (HADS-A) and depression (HADS-D) scores. The study found that there is a higher rate of anxiety (28.6%) and depression (13.5%) (32). In Colombia, a study done on Leprosy, Leishmania, and Chagas disease, the pilot study in endemic regions found that the prevalence of mental distress using the SRQ assessment was 50% for Chagas patients and 49% of leprosy patients exhibited mental distress, and (26%) that of Leishmania (33).

In Egypt as well, the prevalence of psychiatric morbidities such as depression (39.25%), anxiety (34.36%), suicidal ideation (19.48%) and attempt (2.98%), sleep disorders (18.62%) in a dermatology clinic was high (22).

In Ethiopia, only a few studies were conducted in the local context among patients with CSDs in dermatology clinics to assess the prevalence of CMDs. Rather, there are community-based studies done among the general population that report the prevalence of CMDs in Addis Ababa, and Illu Ababore zones in Ethiopia were 24.7% (18) and 27.2% (17) respectively. In general, the prevalence of CMDs among Ethiopian communities over the past 40 years

ranged from 4.6% to 42% (19). An institutional-based cross-sectional study was carried out among common skin diseases in Ethiopia at Boru Meda and ALERT hospital, and the prevalence of depression and anxiety were high, 23.6% (using the PHQ-9) and 37.4% (using HADS) respectively (5), (15).

In another study at ALERT hospital using the SRQ-20 questionnaire, the overall prevalence of mental distress was found to be 34.6%. Whereas among people with leprosy, the prevalence was 52.4%, compared with 7.9% in those with other skin conditions (20). A cross-sectional descriptive study on patients made to answer the SRQ-20 to screen them for mental disorders in India and its presence revealed that 16.1% of the patients suffered from depression, 17.1% were having anxiety, and 8.7% were having both anxiety and depression. 47.3 % of the total respondents were found to have somatic symptoms (21).

In summary, based on these studies, it appears that the prevalence of mental health issues such as depression and anxiety is higher among individuals with CSDs in various countries including Ethiopia and other countries.

2.2 Associated factors

2.2.1 Socio-demographic factors

In a study conducted in Brazil, CMDs were associated with female sex, the age range 26-45 and 46-60, low family income, and unsatisfactory quality of life in the physical and psychological domain (24). In patients with Vitiligo, it was found that single patients were more anxious, hopeless, and depressive, while married patients were only more anxious and hopeless than those who were in the control group, respectively. It seems that women with Vitiligo are more mentally stressed than men with Vitiligo (30). There were significantly increased odds of depression among participants with rural residence, low self-esteem, and perceived stigma (5).

2.2.2 Clinical and Behavioral Factors

Associated factors of anxiety among common skin diseases in ALERT hospital dermatological clinic, Ethiopia were the type of skin disease (Psoriasis and Acne), site of infection on facial area, duration of illness less than six months, poor social support and perceived stigma reportedly had statistically significant association of anxiety (15). Duration of illness above five years, rural residence, co-morbid medical illness, family history of

mental illness, non-adherence to CSD medications, low self-image, and perceived stigma identified significantly increased odds of depression among participants with (5).

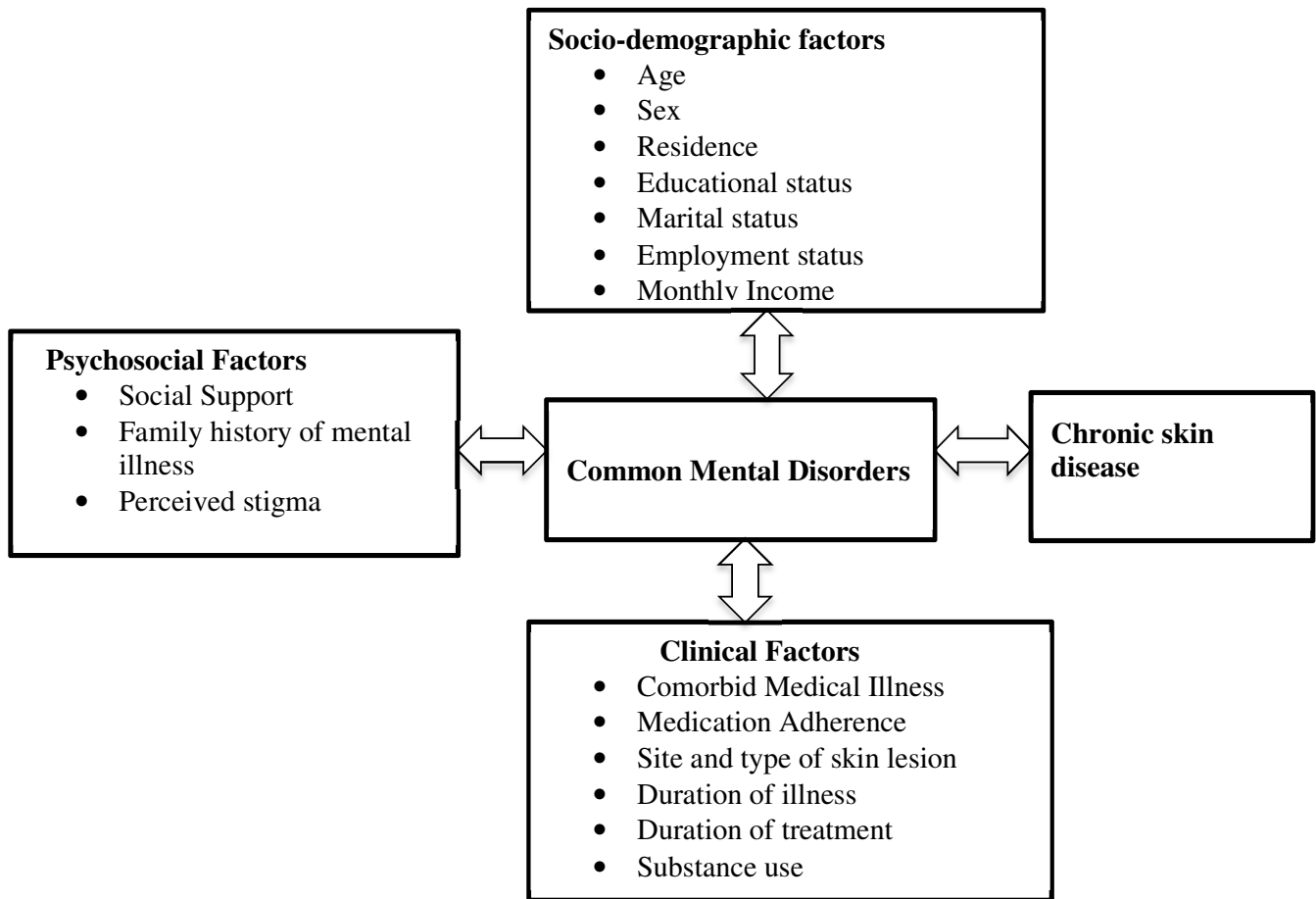


Figure 1: Conceptual Framework

3. OBJECTIVES

3.1 General objective

- ✓ To determine the prevalence of CMD and associated factors among patients with CSD in Ethiopia.

3.2 Specific objectives

- ✓ To assess the prevalence of CMDs among patients with CSD.
- ✓ To identify factors associated with the development of CMD among patients with CSD.

3.3 Research questions

- ✓ What is the prevalence of CMD among patients with CSD?
- ✓ What are the factors associated with CMD in patients with CSD?

3.4 Research Hypothesis

- ✓ HA: - The prevalence of CMD among CSD patients is high.

4. METHODS

4.1. Operational Definitions and Measures

Chronic Skin Disease: - An individual presented with at least one of the CSDs (Acne, Atopic dermatitis, Leprosy, Vitiligo, Psoriasis, Alopecia Areata, Cutaneous Leishmaniasis, as reported in the patient's medical record (5), (15), (24), (29).

Co-morbid medical illness: - When a person has additional diseases such as HTN, DM, Dyslipidemia, Obesity, etc. at the same time.

Family Monthly Income: - Based on the World Bank cut point, those who have an average monthly income of < 2.15\$ per day are below the poverty line and > 2.15\$ are above (38).

Medication adherence: - “The extent to which patients follow the instructions given for Prescribed medications”. BARS score (cutoff $\leq 66\%$), indicating low adherence (39)(35).

Social support: - Social support was assessed by the Oslo Social Support Scale (Oslo-3) which is a 3-item questionnaire, that commonly assesses perceived availability and satisfaction with support received from family, friends, and other special persons with whom one can share his or her joys and sorrows (37), (5)

Substance use: someone who has used any of psychoactive substances in their lifetime and has used in the last one month.

4.2 Study Area and Period

The study was conducted in three different teaching and referral hospitals in the country selected by convenient sampling. Of these, the first was SPHMMC which is located in Addis Ababa, Ethiopia. SPHMMC Dermatological OPD was started in 2008 by G.C and dermatology residency started in 2020 G.C, currently has 7 consultant Dermatologists, 1 Dermatopathologist and 1 Dermato-surgeon, 15 resident, 6 Nurses, 4 OPD, and 1 minor operation room.

The second study area was at the All African Leprosy Rehabilitation Training Center (ALERT) hospital and Armauer Hansen Research Institute (AHRI) which is located in Addis Ababa. The hospital is the main dermatological center in the country and the AHRI (Armauer Hansen Research Institute) was founded in 1970 and got its name from the Norwegian physician, Gerhard Henrik Armauer Hansen, who first described the leprosy bacillus.

The third one was DCSH, which is located in Amhara regional state's South Wollo zone, Ethiopia. It is a teaching and referral hospital and serves about 7 million people for referrals from all Woredas of South Wollo zone, Afar regional state, and some areas of Oromia zone and Tigri regional state. 3 senior Dermatologists were working at inpatient, outpatient, and outreach programs to the surrounding health facilities. The study was conducted from June 20 to Jan 10, 2023 GC.

4.3. Study design

A facility-based, cross-sectional study was conducted.

4.4 Population

4.4.1 Source Population.

All CSD patients at SPMMC, ALERT/AHRI, and DCSH had regular follow up at the dermatology outpatient unit.

4.4.2 Study population

All CSD patients who were attending SPMMC, ALERT/AHRI, and DCSH dermatological outpatient clinics during the data collection period gave informed consent.

4.5 Inclusion and exclusion criteria

4.5.1 Inclusion criteria

All patients aged 18 years and above who had been diagnosed with CSD and on follow-up were included in the study.

4.5.2 Exclusion criteria

The exclusion criteria were:-

- Those who are not willing to sign informed consent.
- Those who had a severe cognitive deficit or acutely sick.

4.6. Sample size determination and Sampling procedures

The sample size (n) was determined using a single population proportion formula considering the following assumptions

n = the required sample size

p = proportion of patients with previously available local figures.

$Z_{\alpha/2}$ = the critical value at 95% confidence level = 1.96

e = precision (margin of error) = 5%

$$n = \frac{z^2 p(1 - p)}{e^2}$$

And taking the previous locally available prevalence (P) of depression in CSD patients done at Boru Hospital in Dessie, Ethiopia is 23.6% and the calculated sample size will be 277. On the other hand, the prevalence (p) of anxiety among patients with CSD done at ALERT hospital in Addis Ababa, Ethiopia is 37.4% and the calculated sample size will be 360. The larger sample (360) was taken to get a better result in the end. Since the source population is <10,000, using the correction formula $nf = ni / (1 + \frac{ni}{N})$, by considering the larger sample size including the potential 10% non-response rate to get more representative data, the final sample size will be 283. The total number of patients with CSD seen at OPD in the three facilities for the past 2 months was N= 946, where 342 in SPHMMC, 444 in ALERT/AHRI, and 160 in DCSH. When proportionally allocated, 49, 132, and 102 were the number of sample sizes taken in DCSH, ALERT/AHRI, and SPHMMC respectively. A simple random sampling technique was applied using their medical record numbers. The patients were interviewed and their medical records reviewed and 2 incomplete questionnaires were dropped out during the data entry thus a total of 281 were analyzed.

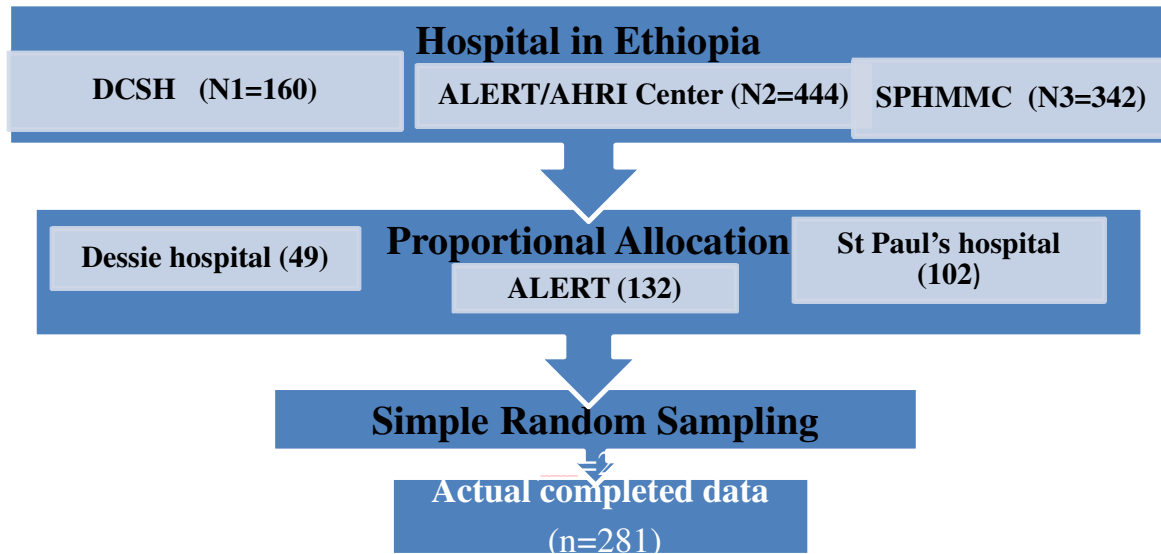


Figure 2: Diagram of sampling procedures

4.7. Study Variables

4.7.1. Dependent variable

Status of common mental disorders (yes/no).

4.7.2. Independent variables

4.7.2.1 Socio-demographic data

Include Socio-demographic Factors (Age, Sex, Marital Status, Educational Status, Employment status, and Monthly Income, Residence area).

4.7.2.2 Clinical and Behavioral Factors

Clinical factors (History of Chronic Medical Illness, Duration of illness, Duration of treatment, Medication adherence, Type of skin disease, Site of skin lesion), Substance-related factors (Alcohol, Chat, Cigarette, Cannabis use), and psychosocial factors (Perceived Stigma, Family History of Mental Illness and Social support).

4.8 Data collection tools and procedures

A structured interviewer-administered questionnaire contains the socio-demographic, clinical and behavioral factors, and others with standardized and locally validated mental health screening tools adopted from previous studies available in Amharic version. The SRQ-20 has

20 questions each of which requires a yes/no response and is accordingly scored a “0” or “1”, with a score of “1” indicating that the symptom was present in the past month, and a score of “0” suggesting that the symptom was absent. It is designed to detect non-specific psychological distress. In this study, it has good internal consistency (Cronbach’s alpha 0.85) (8) (34). Perceived stigma has a 4-point likert scale (0 = not at all, 1 = sometimes, 2 = very often, 3 = always) with a total score ranging from 0 to 18. It has an acceptable internal consistency of Cronbach's alpha 0.71. At least one positive score among the 6 items will be considered as having a high perceived stigma scale (36), (33). Oslo 3-item social support scale it has been used in several studies which range from 3 – 8 is considered as low social support, 9–11 intermediate support, and 12 – 14 is considered as high social support (37), (5). The Brief Adherence Rating Scale (BARS) is a 4-item, clinician-administered rating scale that captures a patient’s intake of the medications. BARS score (cutoff $\leq 66\%$), indicating low adherence (39).

The data was collected face to face-to-face interviews with well-trained and experienced data collectors. A one-day training was given to six (two at each respective sites) enumerators (BSc in nursing) and three supervisors (two Dermatology residents, and Dermatology specialist). Each questionnaire was checked for completeness and consistency by the supervisors and the investigator closely, and appropriate feedback was given to the data collectors.

4.9 Data Quality Control

A total of 28 (10% of the sample size) patients were selected for pre-testing. Pre-testing of the study tool was conducted at SPHMMC. The data served in pre-testing was not included in the analysis to avoid data contamination. During pre-testing the questionnaire was assessed for its clarity, understanding, length, completeness, validity, and reliability, and feedback was incorporated into the final tool to improve the quality. Supervision was done by the supervisors and the principal investigator throughout the data collection period and checked daily for completeness and consistency of questionnaires.

4.10. Data processing and analysis

The completeness of the questionnaire was checked before data entry and two questionnaires were excluded from consideration for the final analysis due to their incompleteness. The data was entered using Epi Data entry client version 4.6.0.2 and analyzed using SPSS software version 26 after it was exported from Epi data manager version 4.6.0.2. Descriptive statistics

were conducted using frequency, table, and figure. Mean, standard deviations, percentages, and ratios were calculated. The association of independent variables with the dependent variable was determined using binary logistic regression analysis. The variables that showed an association with the outcome variable at the bi-variant analysis with p-value <0.25 were entered into the final multivariate analysis to control for potential confounders. Adjusted odds ratio along with 95% CI was estimated to assess the strength of association and a P value <0.05 was considered to declare the statistical significance in the multivariate analysis.

4.11 Ethical considerations

Ethical clearance was obtained from the Institutional Review Board of SPHMMC and ALERT/AHRI. A permission letter was obtained from DCSH. Informed consent was taken from each respondent after a detailed explanation of the aim of the study. The right to withdraw from the research process at any point in time was respected. Privacy and confidentiality were maintained throughout the study.

During interviewing, those participants with CSDs who had suicidal ideas were immediately linked to a psychiatric clinic, and those who had CMDs were advised for psychiatric evaluation, and care was provided after tracing them. Confidentiality was maintained at all levels of the study through anonymous data collection.

4.12 Dissemination and Utilization of plans

The findings of the study will be submitted to the Department of Psychiatry and it will be presented as one of the partial fulfillment of the residency program in the Psychiatry department. The result of this study will consider disseminating and allowed to utilize the following organizations.

- To SPHMMC
- To DCSH
- ALERT/AHRI Hospital
- To Federal minister of health and Addis Ababa health bureau

All efforts will be made to publish the results in local and international journals and to present them at national scientific conferences.

5. RESULTS

5.1 Socio-demographic characteristics

281 of the 283 eligible respondents to this survey successfully finished the interview, yielding a 99.3% response rate. Due to their incompleteness, two questionnaires were eliminated from consideration for the final analysis.

(Table 1) Socio-demographic characteristics of participants (N=281)

Variables	Categories	Frequency (n=281)	Percentile (%)
Sex	Male	90	32
	Female	191	68
Age	18-24	66	23.5
	25-49	161	57.3
	≥50	54	19.2
Residence Area	Urban	225	80
	Rural	56	20
Income	<3541.5ETB*	160	56.9
	≥3541.5ETB*	121	43.1
Employment status	Unemployed	87	31
	Student	34	12.1
	Farming	28	10
	Government Worker	90	32
	Merchant	40	14.2
Marital status	Unmarried	110	39.1
	Married	138	49.1
	Divorced	15	5.3
	Widowed	18	6.4
Educational status	No formal Education	35	12.5
	Primary	69	26.6
	Secondary	49	17.4
	Preparatory	49	17.4
	Collage & above	79	28.1

ETB*: Ethiopian Birr.

The majority of participants (68%) were females, and over half (57.3%) were aged between 25 and 49. Almost half (49.4%) of those with CMDs were within this age group. In terms of marital status, almost half (49.1%) were married while about one-third (39.1%) were

unmarried. Over half (56.9%) of respondents earned less than 3541.5 ETB (\$2.15), and the majority (80.1%) lived in urban areas. The prevalence of CMD was significantly higher among women (73%) than men (27%), unmarried individuals (42%) compared to married ones (40%), unemployed individuals (45.7%) relative to government employees (22%), adults aged 25-49 years old (49%) compared to younger adults aged 18-24 years old (30.9%), and those with lower monthly income (less than 3541.5 ETB) compared to those with higher monthly income (over 3541.5 ETB) (see Table 1)

5.2 Clinical Characteristics

More than one-third, (37.7%) of the participants had lesion sites mainly on the facial area as shown in Table 2.

(Table 2) Clinical characteristics for the respondents (N=281)

Variables	Categories	Frequency (n=281)	Percentile (%)
Substance use	Yes	17	6
	No	264	94
Type of substance use	Khat	4	1.4
	Alcohol	7	2.5
Type of skin disease	Psoriasis	53	18.9
	Vitiligo	56	19.9
	Chronic Urticarial	10	3.6
	Atopic Dermatitis	68	24.2
	Acne Vulgaris	31	11
	Leprosy	13	4.6
	Subborhic Dermatitis	15	5.3
	Melisma	22	7.8
	Others *	13	4.6
Site of skin lesion	Face	106	37.7
	Head	32	11.4
	Hand and Leg	83	29.5
	Face, hand, and leg	35	12.5
	Whole body	12	4.3
Type of comorbid illness	Hypertension	40	12.1
	Obesity	6	2.1
	Diabetes millets	27	7.5
	Hypertension & Diabetes	6	2.1

Others *: Leishmania, Alopecia Areata; **Others: HIV, Cancer; Others***: Tramadol

About (24.2%) of the participants were diagnosed Atopic dermatitis, (19.9%) with Vitiligo, and (18.9%) had been diagnosed with Psoriasis. Nearly one-third, (28.9%) of the respondents

had comorbid medical illnesses, and almost half (49.4%) of the comorbid medical illness was hypertension followed by Diabetes mellitus (40.7%), Table-2.

5.3 Psychosocial and Behavioral characteristics

According to Table 2, out of the participants, only 6% were frequent substance users. Among these substance users, 40% reported consuming alcohol. Referring to Table 4, we find that among all the study participants, 11.4% had low levels of social support, 15.7% had moderate social support, and 73% had poor social support. Of those who participated in this study, 7.5% reported having a history of mental illness in their families. Three-quarters (76.2%) of these individuals also suffered from CMDs. According to Table 3, most of the participants (82.9%) experienced feelings of perceived stigma. Similarly, of the study participants who had CMDs, 93.8% felt stigmatized. Furthermore, out of the entire sample, 12.8% did not follow through on their prescribed dermatologic medications, which affected 75% of the non-adherents, leading them to develop CMDs (see Tables 2-3).

5.4 Prevalence of CMDs

The overall prevalence of CMD among patients with CSD was found to be 28.8% (95% CI: 23.5, 33.8) in the last 4 weeks. (Figure 3)

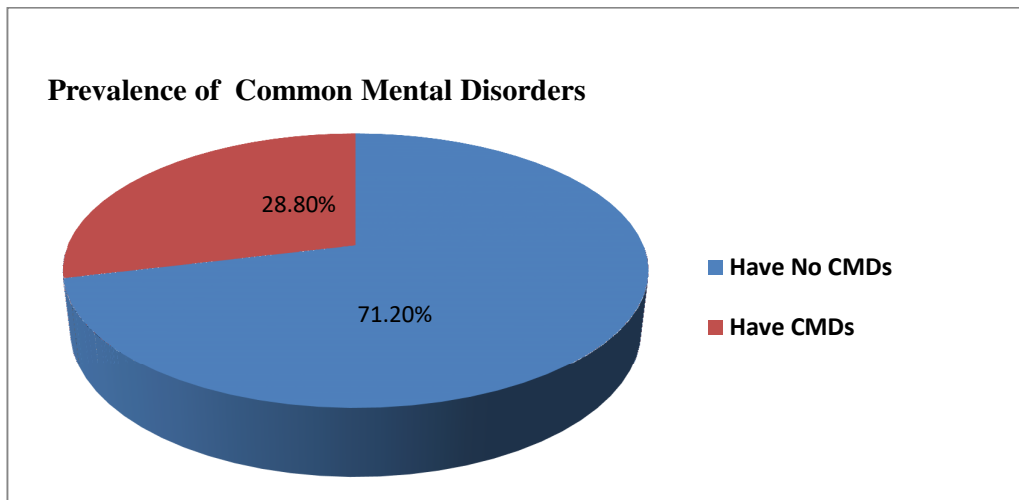


Figure 3: The prevalence of CMDs among study participants with chronic skin disease.

6. DISCUSSION

The main purpose of this study was to estimate the prevalence and associated factors of CMDs among patients with CSDs, and the study identified that the overall prevalence of CMD among patients with CSD was 28.8%.

Our finding was consistent with data obtained in a community-based cross-sectional study which was conducted in Ethiopia, 27.2% at Illu Ababur (17), and 24.7% in Addis Ababa (18). This result was consistent with other earlier studies, such as those conducted in Ethiopia (23.6%) (5), 34.6% (20); in Brazil, (32.3%) (23); in India, (18.33%-28.7% (25), (27.6%-30.4%) (29); in United States (28.6% (32), and in Pakistan, (26.7%) (26).

This result, however, was found to be less than other findings, including those for Ethiopia, 37.4% (15); Colombia, 26-50% (33), and Brazil, 70.4% (24). Methodological elements such as the study design, sample size, data collection tools, and cutoff points taken in SRQ-20 could provide an explanation for this discrepancy. For instance, the cutoff criterion for the SRQ-20 varied between research (20), (23), and (24).

On bivariate analysis, educational status, area of residence, social support, medication adherence, chronic medical illness, perceived stigma, duration of illness, treatment duration, family history of mental illness, type and main site of skin lesion were factors associated with CMDs ($p < 0.25$). Whereas in the multivariate logistic analysis, covariates such as family history of mental illness, poor social support, comorbid medical illness, perceived stigma, duration of skin disease above five years, and poor medication adherence were significantly associated with CMDs ($P < 0.05$) (Table 3).

Table 3 Factors associated with CMDs in bivariable and multivariable regression analyses among participants with CSDs in Ethiopia, 2023 (n=281).

Variables	Categories	CMDs		COR With 95% CI	AOR with 95% CI	P-value
		yes	No			
Area of Residence	Urban	61	164	1.50[0.80, 2.78]	0.71[0.25, 2.01]	0.966
	Rural	20	36	1	1	-
Educational status	No formal education	17	18	3.44[1.47, 8.08]	1.23[0.32, 5.25]	0.402
	Primary	20	49	1.49[0.71, 3.14]	0.52[0.17, 1.61]	0.529
	Secondary	13	36	1.32[0.57, 3.02]	0.54[0.17, 1.78]	0.411
	Preparatory	14	35	1.46[0.64, 3.31]	0.45[0.14, 1.50]	0.258
	Collage & above	17	62	1	1	-
Family history of mental illness	Yes	16	5	9.6[3.38, 27.23]	6.63[1.46, 30.01]	0.026*
	No	65	195	1	1	-
Comorbid medical illness	Yes	33	37	0.33[0.19, 0.58]	2.93[1.2, 7.14]	0.034*
	No	48	163	1	1	-
Social support	Low	24	8	14.6[6.05, 35.09]	14.1[4.17, 47.7]	0.000**
	Intermediate	22	22	4.9[2.43, 9.7]	4.76[1.75, 12.97]	0.001**
	High	35	170	1	1	-
Perceived Stigma	Has stigma	76	157	0.24[0.09, 0.63]	7.85[2.09, 29.49]	0.003**
	No stigma	5	43	1	1	-
Medication Adherence	Poor	27	9	10.61[4.7, 23.9]	8.08[4.95, 66.1]	0.000**
	Good	54	191	1	1	-
Duration of illness	<1 year	16	89	0.15[0.07, 0.30]	0.07[0.02, 0.27]	-
	1-5years	28	80	0.29[0.15, 0.56]	0.29[0.09, 0.93]	0.000**
	≥5 years	37	31	1	1	0.003*
Treatment duration	<1 year	46	123	0.56[0.25, 1.25]	3.63[0.81, 16.29]	-
	1-5 year	23	59	0.59[0.24, 1.40]	1.50[0.32, 7.03]	0.21
	≥ 5 years	12	18	1	1	0.09

NB: *P<0.05; **p<0.01.

The odds of having CMDs among respondents who had a family history of mental illness were about six fold higher as compared to those who had no family history of mental illness (AOR = 6.63; 95%CI: 1.46, 30.01). This result was in line with the findings in Ethiopia (5), (17); Pakistan (26). Possible reasons that can be forwarded could be increased genetic vulnerabilities that may inherit specific genes that contribute to their development as people with family history of mental illness has an increased risk of having CMDs like anxiety,

depression and other unspecified somatic complaints. Family members often share similar experiences, beliefs, behaviors, and lifestyles, which could influence each other's mental health through shared stressors and life events, social support networks. (6), (40), (7).

The present study showed that patients who hadn't received social support were about fourteen-fold more likely to have CMDs (AOR = 14.1; 95%CI: 4.17, 47.7) compared to those who had high social support and four times more likely to have CMDs (AOR=4.76; 95%CI: 1.75, 12.97) when compared with those participants who have intermediate social support. This finding is supported by previous studies done in Ethiopia (5), (15). The possible reason could be those individuals who have inadequate social support may experience feelings of loneliness, isolation, and exclusion, which can increase the risk of developing mental health issues. Less emotional support and lack of assistance, decreased sources of information about available resources, treatments, and self-help strategies (19) (40).

The odds of having CMDs among participants with perceived stigma were nearly eight times higher when compared to respondents who had no feelings of perceived stigma (AOR=7.85; 95%CI: 2.09, 29.49) as shown in Table 3. This study was consistent with the study done in Ethiopia (15), (5). The possible reason might be due to people having a feeling of rejection, anger, blame will impact social lives, work activities which might lead to work dissatisfaction and mental distress (41) (42) (36).

Besides, the odds of having CMDs among participants with comorbid medical illness (AOR= 2.93; 95%CI 1.2, 7.14) were nearly triple times higher relative to those with no comorbidity as shown in Table 3. Many studies report similar findings (5), (17). This could be due to prolonged pain and suffering, associated chronic stresses and systemic inflammations, ongoing physical discomfort and exhaustion, and sleep disruption might predisposed and or perpetuated to depression, anxiety and other mental conditions (21), (40).

Regarding the duration of illness, those respondents who were on treatment for longer than 5 years were two and half times more likely to develop CMD compared to those who spent less than 5 years on treatment (AOR = 2.653; 95% CI: 1.399, 5.031). This finding was supported by other studies (5), (43), (44). However there was an opposing result done in Ethiopia (15) and the controversial results in these studies could be due to the fact that the duration of illness is usually determined by inquiring from the patients in which there might be recall bias.

Regarding the medication adherence, those who had poor adherence to their dermatological medications were eight-folds more likely to developed CMDs when compared to those participants who were adherent (AOR=8.08; 95% CI: 4.95, 66.1). This finding was consistent with other studies (5). The possible explanations might include stress or anxiety related to managing chronic illness, side effects or discomfort associated with medications, misunderstanding or lack of knowledge about their condition and treatment, comorbid medical conditions, and socioeconomic factors.

7. Strength and Limitations of the study

The study's main strengths include its inclusion of additional variables and the use of a variety of locally validated tools, which helped to ensure that the results were accurate and reliable. Furthermore, the achievement of a larger sample size through a multi-center design helped to make the results more representative of the general population.

However, there were some limitations to the study. These include the possibility of social desirability bias influencing the results due to the sensitivity of the topic, the lack of causality established by the cross-sectional design, and the exclusion of other clinical factors and variables from the analysis. There are many other variables and clinical factors that could have been included in the analysis yet.

8. CONCLUSION

The prevalence of CMDs is high among individuals with CSD. Several factors, including family history of mental illness, length of illness, perceived stigma, low social support, comorbid medical illness, and poor medication adherence, have been found to significantly increase the risk of developing these disorders. Strengthening mental health screening and treatment at the dermatological clinic through a multi-disciplinary approach could improve patient care. The development of standard guidelines for managing patients with CMDs among CSD by the Ethiopian MOH in collaboration with dermatology and psychiatry departments would greatly benefit the community.

9. RECOMMENDATION

The issue of mental health conditions in dermatological patients should receive more attention and it would also be helpful to identify vulnerable groups and intervene in them to prevent the development of clinical mental disorder.

Colleges and educational programmers should aim at increasing dermatologists' awareness of mental health issues and promoting the use of validated psychiatric screening questionnaires. Improving consultation-liaison services and collaborating with specialists from other disciplines should be strengthened between each department.

Training non-specialists such as community health workers on mental health-related issues across an individual's life course and intervening would be an effective strategy.

Mental health literacy of the population should be enhanced through information, education, and communication activities would help in increasing awareness, care seeking, reduce stigma related to mental problems.

This study paves the way for further studies and it would be a step stone for other researchers assuming other underlying constructs such as skin color, quality of life, self-esteem, etc.

Appendices

Address of the Researcher Resident

Name of Resident	Solomon Takele	
Full title of the research project	The Prevalence of Common Mental Disorders and Associated Factors among Patients with Chronic Skin Disease in Ethiopia: A Multi-Center Cross-Sectional Study	
Duration of the project	June 2023 to Oct 2023	
Study Area	SPHMMC, ALERT/AHRI, DCSH	
Total Cost of the project	86,867.00 Ethiopian Birr	
Source(s) of Funding	SPHMMC	
Address of investigator	Tel: +2510914659607	
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Name of Advisor(s)	1) Dr Meskerem Abebe	2) Dr Girma Mamo

Letter of Approval

St. Paul Hospital Millennium Medical College Graduate Study Program

Approved by Board of Examiners

Chair, Dep't of Graduate Committee

Signature

Date

Advisor

Signature

Date _____

Examiner, internal

Signature

Date

Examiner, External

Signature

Date _____

Declaration

I, the undersigned, declare that this thesis is my original work and has never been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

Name: Dr. Solomon Takele

Submission Date: January 12, 2024.

Signature: _____

Advisor's Name Dr. Meskerem Abebe

Signature.....

Dr. Girma Mamo

Signature.....

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ANNEX

የአዕምሮ ህክምና ድህረ ምረቃ የትምህርት ክፍል ት/ቤት የአዕምሮ ህክምና ትምህርት-ፕሮግራም መጠይቅ፡፡

ውድ ተሳታፊዎች በመጀመሪያ ስለ መልካም ትብብሮች አስቀድሜ ለመሰግን እወዳለው፡፡ ይህ መጠይቅ በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ ፣ በደሴ ኮምፕሪኔንሲቭ ስፔሃላይዝድ ሆስፒታል እንዲሁም በአህሪ/አለርት ሆስፒታል ውስጥ የቆዳ ህመም ያለባቸው እና በተመላላሽ ለሚታከሙ ታካሚዎች ታስቦ የተዘጋጀ ሲሆን አላማውም የቆዳ ህመም ካለባቸው ታካሚዎች ውስጥ ምን ያህሉ ሰዎች አዘውትረው ለሚከሰቱ የአእምሮ መታወክ ወይም የስነልቦና መረበሽ እንዳጋጠማቸው እና ተያያዥ ጉዳዮችን ለማወቅ ታስቦ የተዘጋጀ መጠይቅ ነው፡፡ መጠይቁ የሚውለው በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካ ኮሌጅ የአዕምሮ ህክምና የትምህርት ክፍል ለድህረ ምረቃ ጥናት የመመረቂያ ጽሁፍ ማሟያነው፡፡ ለዚህ መጠይቅ የተሰጠው መረጃ ሚስጥራዊነቱ የተጠበቀ እና ለትምህርት አላማ ብቻ የሚውል እንደሆነ ረጋግጥልዎት እወዳለሁ፡ ስም መጻፍ አያስፈልግም፡፡

መጠይቁ ክፍሎች ያሉት ሲሆን፡ የዚህ ጥናት አላማ ግቡን የሚመታው በእናንተ በሚሰጠው መረጃ ተገቢነትና እውነተኝነት ላይ ተወስኖ መሆኑን ተረድታችሁ በመጠየቁ ላይ ያሉትን ጥያቄዎች በአግባቡ እና በእውነተኝነት እንድትመልሱ በትህትና እጠይቃለሁ፡፡

አመሰግናለሁ!

ክፍል 1፡- የግል ሁኔታ የተመለከቱ ጥያቄዎች፡፡

Appendix 1: questionnaire part -1 (socio – demographic)

መመሪያ፡- እባክዎትን ለጥያቄዎች በሚመለከትዎት መልስ ላይ የ(✓) ምልክት ያድርጉ፡፡

ተ.ቁ	ጥያቄ	መልስ
1	ፆታ	ወንድ
		ሴት
2	እድሜ	ከ 18-24 አመት
		ከ25-49 አመት
		ከ50 አመት በላይ
3	የትምህርት ደረጃ	ማንበብና መፃፍ የማይችል
		አንደኛ ደረጃ ት/ቤት 1-8
		ሁለተኛ ደረጃ ት/ቤት 9-10
		መሠናዶ ት/ቤት 11-12
		ኮሌጅ እና ከዛ በላይ
4	የመኖሪያ አካባቢ የስራ ሁኔታ	ከተማ
		ገጠር
5	የስራ ሁኔታ	ስራ የሌለው

		ተማሪ	
		ግብርና	
		ተቀጥሮ የሚሰራ	
		ነጋዴ ጡረታ	
6	የቤተሰብ አማካኝ ገቢ	<3541.5 ብር	
		>= 3541.5 ብር	
7	የጋብቻ ሁኔታ	ያላገባ	
		ያገባ	
		አግብቶ/ታ የፈታ/ች	
		ባል ወይም ሚስት የሞተባ(በ)ት	

ክፍል 2:- የህመም እና የባህሪ ሁኔታን የተመለከቱ ጥያቄዎች፡፡

Appendix 2: questionnaire part-2 (the clinical factors)

ተ.ቁ	ጥያቄ	መልስ	
1.	ለስንት አመት ያህል ታመሙ	ከ1 ዓመት በታች	
		ከ1-5 ዓመት	
		ከ5 ዓመት በላይ	
	ለምን ያህል ጊዜ የህክምና ክትትል አደረጉ	ከ1 ዓመት በታች	
		ከ1-5 ዓመት	
		ከ5 ዓመት በላይ	
2.	ተደራቢ የአካል ህመም	አለ	
		የለም	
3.	አለ ካሉ የተደራቢ የአካላዊ ህመም አይነት	ግፊት	
		ከመጠን ያለፈ ውፍረት	
		ስኳር	
		ከፍተኛ የሰውነት የስብመጠን	
		ሌላ	
4.	የቆዳ ህመም አይነት (በመረጃ ሰብሳቢው ብቻ የሚሞላ)	ሶሪያሲስ	
		ቪቲሊጎ	
		ክሮኒክ አርቲካሪያ	
		ሌሽማኒያሲስ	
		ኤክሜማ	

		ሊጥረሲ	
		ብጉር	
		ሰባሪክ ደርማታይትስ	
		ሜላስማ	
		ሌላ	
5.	ሱስ አምጭ ነገሮችን አዘውትረው ይጠቀማሉ	አወ	
		አይደለም	
6.	ከላይ ለተጠየቀው ጥያቄ መልስዎ አወ ከሆነ የሚጠቀሙት	ሲጋራ	
		ጫት	
		አልኮል	
		ካናቢስ	
		አልኮል እና ጫት	
		አልኮል እና ሲጋራ	
		ሌላ	
7.	የቆዳ ቁስለት በዋናነት የሚገኝበት የሰውነት ክፍል	ፊት	
		ራስ	
		እጅ ወይም እግር	
		የመራቢያ አካል	
		ሌላ ቦታ	
8.	በለፈው 1 ወር ውስጥ (ከመጨረሻው ክትትል እስከ ዛሬ) መድሀኒትዎን ከታዘዘለዎት ውስጥ በምን ያህል መጠን ያነሰ ይዎስዳሉ	1. ሁልጊዜ (ከ 76%-100% የሚሆነውን ጊዜ)	
		2. በአብዛኛው (51%-75% የሚሆነውን ጊዜ)	
		3. አልፎ አልፎ (26%-50% የሚሆነውን ጊዜ)	
		4. ፈፅሞ አልወስድም (0%-25% የሚሆነውን ጊዜ)	
9.	በቤተሰብ የአዕምሮ ህመም ታሪክ	አለ	
		የለም	

ክፍል 3:- አስሎ-3 የማህበራዊ ድጋፍ መጠይቅ

Appendix 3: questionnaire part – 3 (Oslo social support)

መመሪያ፡ይህ የመጠይቅ ከማህበረሰቡና ከቤተሰብዎ የሚያገኙትን ድጋፍና ተዛማጅ ጉዳዮች ይዳስሳል፡ እባክዎትን ከተሰጡት አማራጮች ውስጥ እርስዎን በሚገልጹ መልሶች ብቻ ላይ ያክብቡ፡፡

1. በጣም የሚቀርብዎት እና በከባድ የግል ችግር ጊዜ የሚደርሱልዎት ስንት ሰዎች ይሆናሉ (አንድ አማራጭ ብቻ ይጠቀሙ)

1. የሉም
2. 1 ወይም 2
3. ከ 3 – 5
4. ከ 5 በላይ

2. በሚያደርጓቸው ነገሮች ሰዎች ምን ያህል ትኩረትና ፍላጎት ያሳያሉ (አንድ አማራጭ ብቻ ይጠቀሙ)

5. በጣም ብዙ ፍላጎትና ትኩረት
4. መጠነኛ ፍላጎትና ትኩረት
3. አላውቅም
2. ትንሽ ፍላጎትና ትኩረት
1. ምንም ፍላጎትና ትኩረት

3. እርዳታ የግድ በሚያስፈልግዎ ጊዜ ከጎረቤትዎ እርዳታ ማግኘት ምን ያህል ቀላል ነው (አንድ አማራጭ ብቻ ይጠቀሙ)።

5. በጣም ቀላል
4. ቀላል
3. የሚቻል
2. አስቸጋሪ
1. በጣም አስቸጋሪ

ክፍል 4:- ከአዕምሮ ህመም ጋር የተያያዙ ጥያቄዎች

Appendix 4: questionnaire part -4 (self-response questionnaire)

መመሪያ- የሚከተሉት ጥያቄዎች ባለፉት 30 ቀናት ውስጥ ምናልባት ሲረብሽዎት ከቆዩ አንዳንድ ህመሞችና እና ችግሮች ጋራ ይያያዛሉ። ላለፉት 30 ቀናት የተጠቀሰው ችግር አጋጥሞት ከነበረ አዎ ብለው ይመልሱ። በሌላ በኩል ላለፉት 30 ቀናት ውስጥ የተጠቀሰው ችግር ካልደረሰብዎት፡- አይደለም ብለው ይመልሱ። እባክዎን መጠየቁን ሲሞሉ ከማንም ጋር አይመካከሩ። ጥያቄውን እንዴት መመለስ እንዳለብዎት እርግጠኛ ካልሆኑ እባክዎ መስጠት የሚችሉትን ጥሩ መልስ ይስጡ።

ተ.ቁ	ባለፈት 4 ሣምንታት የደረሰ የጤና ችግር	አወ	አይደለም
1	እራስ ምታት ብዙ ጊዜ ያምዎታል?		
2	ምግብ የመውሰድ ፍላጎትዎ ቀንሷል?		
3	በደንብ አይተኙም?		
4	በቀላሉ ይደነግጣሉ?		
5	እጅዎ ይንቀጠቀጣል?		
6	የመንፈስ መጠበብ (መጨነቅ) ሁኔታ አለብዎት?		
7	ምግብ ከበሉ በኋላ ሆድዎትን ይከብድዎታል?		
8	በትክክል ማሰብ ይቸገራሉ?		

9	ደስታ የማጣት ሰሜት አለዎት?		
10	ያለበቂ ምክንያት እንባ እንባ ይሉታል?		
11	በየቀኑ በሚሠራቸው ስራዎች መደሰት ይቸገራሉ?		
12	የእለት ተእለት ተግባሮን መወሰን ይቸገራሉ?		
13	የእለት ተግባሮን ለመፈፀም ይቸገራሉ?		
14	በአካባቢዎ ጠቃሚ ተሳትፎ ማድረግ ይቸገራሉ?		
15	በአንዳንድ ነገሮች ላይ የነበረዎት ፍላጎት ወይም ስሜት ጠፍቷል?		
16	የማልጠቅም ሰው ነኝ ብለው ያስባሉ?		
17	ህይወትዎ አስጠልቶት መቼ ባረፍኩ ያሉበት ጊዜ አለ?		
18	ሁልጊዜ ድካም ይሠማዎታል?		
19	ሆድዎ ይረበሻል?		
20	በቀላሉ ይደክሞታል?		

ክፍል 5: -የመገለል ስሜትን በተመለከተ:

ቀጥሎ ያሉት መጠይቆች በተሳታፊው ህመም ምክንያት የመገለል ስሜትን ለመጠየቅ የተዘጋጁ ናቸው፡፡

በመሆኑም ተሳታፊው በሚለው ደረጃ ላይ የ (✓) ምልክት ያስቀምጡ፡፡

Appendix 5: questionnaire part -5 (Percieved stigma)

ክድ	መጠይቅ	በጭራሽ አይደለም(0)	አንዳንድ ጊዜ (1)	በጣም ብዙ ጊዜ (2)	ሁል ጊዜ (3)
1	ሌሎች በቆዳዬ በሽታ ምክንያት ወደ እኔ አይቀርቡኝም?				
2	ሌሎች በቆዳዬ በሽታ ላይ ትኩረ ብለው ያዩኝ ይመስለኛል?				
3	ሌሎች በቆዳዬ በሽታ ምክንያት እኔን ሲነኩኝ ምቹት አይሰማቸውም?				
4	ሌሎች ሰዎች የቆዳ በሽታዬ ተላላፊ ነው ብለው ያስባሉ?				
5	ሌሎች ሰዎች በቆዳ በሽታዬ ምክንያት ራቄኝ?				
6	ሌሎች ሰዎች አንዳንድ ጊዜ ስለቆዳ በሽታዬ የሚያናድዱ አስተያየቶችን ይሰጣሉ?				