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Stigma and determinant factors among patients with mental disorders: Institution-based cross-sectional study

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Abstract

Objectives: To assess prevalence and its associated factors of perceived stigma among patients with mental disorders who had appointment for treatment at Debre Markos, Finote Selam, and Felege Hiwot Hospitals, Ethiopia, 2019.

Methods: At selected hospitals in the Amhara Region, an institution-based cross-sectional study was conducted from 1 February to 1 March 2019. Participants were selected using systematic random sampling technique and data were collected using a standardized questionnaire. The Internalized Stigma Scale was designed to examine the stigma associated with mental disorders. The data were coded and enter into Epi data version 4.4.2.1 before being exported to SPSS version 20 for analysis. Odds ratios and 95% confidence interval were used to show the strength of the association.

Results: A total of 610 participants were participated, with a response rate of 98.6%, and 215 (35.2%) of them reported a high level of perceived stigma. Being single (adjusted odds ratio = 1.84, 95% confidence interval: 1.12, 3.02), accessing their medication freely (adjusted odds ratio = 1.70, 95% confidence interval: 1.08, 2.67), having suicidal thoughts (adjusted odds ratio = 1.95, 95% confidence interval: 1.25, 3.03), having low social support (adjusted odds ratio = 5.09, 95% confidence interval: 2.95, 8.76), age 25–34 years (adjusted odds ratio = 1.94, 95% confidence interval: 1.11, 3.40), age 35–44 years (adjusted odds ratio = 2.10, 95% confidence interval: 1.06–4.18), and age > 44 years (adjusted odds ratio = 3.48, 95% confidence interval: 1.67, 7.24) were revealed to be significantly associated with high perceived stigma after multivariable logistic regression analysis ($p < 0.05$).

Conclusion: The prevalence of high perceived stigma was 35.2%, which is found to be high among people who have mental disorders in this study. Being single, accessing their medication freely, having suicidal thoughts, having low social support, and being within the age of (25–34), (35–44), > 44 were all found to be significantly associated with high perceived stigma ($p < 0.05$). But married, access medication by fee, have no suicidal thought, having moderate and strong social support, and young age were significantly associated with low perceived stigma.

Keywords

Mental disorder, perceived stigma, Ethiopia

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Introduction

Mental disorders affect around 450 million people worldwide, including more than 13 million Ethiopians. In Ethiopia, only about 10% of people with severe mental disorders had access to modern psychiatric services.[1,2] Mental, neurological, and substance use disorders are widespread throughout the world and dramatically increase the risk of morbidity and premature death. Mental disorders have also contributed for huge burden that accounts 33% years lived with disability.[3,4]

A study conducted in Canada showed that the prevalence of perceived stigma was 24.4%,[5] in Nigeria, showed that the prevalence of perceived stigma was 22.5%,[6] and in Ethiopia, the prevalence of high perceived stigma was 83.5%.[7] A number of factors, including social support (poor social support),

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duration of mental disorders less than a year, educational status (unable to read and write), age (younger age),[8] and those who were not working, substance use, and type of mental disorders were significantly associated variables with high perceived stigma in different researches.[5–7,9,10]

Stigma is a set of negative attitudes that drive persons with mental diseases to dread, reject, avoid, and discriminate against them.[11,12] People with mental disorders are subjected to human rights violations, economic problems, educational restrictions, and restrictions on reproductive rights as a result of stigma and discrimination.[13] Patients in impoverished countries are subjected to extreme stigma and abuse. Only a small percentage of mentally ill patients receive modern treatment, and the majority of untreated mental disorders patients live in low-income countries.[13,14] Between 76% and 85% of people with serious mental problems in poor- and middle-income countries do not obtain treatment; comparable with high income countries is equally large, between 35% and 50%.[15]

Traditional views regarding psychiatric problems, such as that they are harmful, did not compute in the community, resulting in sentiments of shame and dread among those with mental disorders.[1,2] Around 20% of employees have a mental health problem at work, and while many companies are adopting policies to support a healthy workforce, there is no common vision for mental health in the workplace.[16] Traditional beliefs continue to impact people's attitudes regarding mental disorders, resulting in stigmatization of those with mental disorders. Because of the stigma, they stop seeking treatment for their sickness.[17,18]

People who have been stigmatized have a lower quality of life and are less likely to achieve their personal goals.[19] Mental stigma has been shown to negatively impact service users' health, as well as their capacity to lead and recover from a normal life.[20] Many people are hesitant to seek mental health treatment because they do not want to be classified as "mental patients" and the stigma that comes with it.[21] Along with coping with the signs of mental disorders, they also struggle with the stigma that society places on their condition (hallucinations, sadness, delusions, and anxiety).[16]

Loss of self-esteem and self-efficacy, demoralization, and hopelessness are all psychological factors that affect adherence to medical treatment.[22] Stigma can lead to a reduction in public funding for mental health services and a decrease in the quality of care provided to people with mental disorders.[23]

For many persons with mental disorders, stigma has a significant influence on their lives, interfering with work, housing, health care, social life, and self-esteem.[24] Every aspect of society must work together to increase access to mental health care services. To do this, it is necessary to identify and remove the barriers preventing people from using these services, but there is lack of research that shows the extent of perceived stigma and the factors that contribute to it.[25,26] Since the previous study conducted in Ethiopia focused on schizophrenia,[7] there were lack of knowledge about overall magnitude of perceived stigma among individuals who have mental disorders. So, the objective of this study was to assess the overall prevalence of perceived stigma among patients with mental disorders as well as the factors that influence it.

Materials and methods

Study design and area

The study was conducted at Debre Markos, Felege Hiwot, and Finote Selam Hospitals from February 1 to March 1, 2019 with an institution-based cross-sectional study design.

Debre Markos Referral Hospital is 300 km from Ethiopia's capital, Addis Ababa, and 256 km from Bihar Dar, the seat of the Amhara National Regional State. The hospital serves a population of more than 3.5 million people. Felege Hiwot Referral Hospital is one of the Bahir Dar's referral hospitals where is 555 km far from Addis Ababa, Ethiopia's capital. It serves a population of more than 4 million people. Finote Selam Hospital is 387 km north of Addis Ababa and 166 km south of Bihar Dar. The hospital serves a population of more than 100,000 people.

Debre Marko and Felege Hiwot Hospitals are comprehensive specialized hospital but Finote Selam Hospital is general hospital. All of them give outpatient and inpatient service for mental disorders. Patients who have monthly followed up at Debre Markos Referral Hospital, Felege Hiwot Referral Hospital, and Finote Selam Hospital were 500, 600, and 300, respectively.

Target and study populations

Patients who had follow-up for mental disorders treatment at selected hospitals were the source population, and patients who had follow-up for mental disorders treatment at selected hospitals and available during the study period were the study population.

Criteria for inclusion and exclusion

This study included patients with mental disorders aged 18 years and older who had at least 3 months of follow-up, and patients who have not insight were excluded in this study.

Sample size determination and sampling procedure

The number of samples needed for this study was calculated using a single population proportion formula that took into account 83.5% of the proportion study conducted in a manual specialized hospital among patients who diagnosed

schizophrenia,[7] a 4% margin of error, a 95% confidence level, and a 5% non-response rate. The final sample size was 619 after accounting for a 5% non-response rate.

Each hospital's study participants were chosen using a systematic random sampling technique. Each hospital was given a proportional sample size. The first participant was chosen by a lottery method.

Variables and measurements

Internalized stigma was measured using the Internalized Stigma of Mental Illness (ISMI) scale. The ISMI scale is a frequently used measure with 29 items divided into five domains: alienation (six items), stereotype endorsement (seven items), social withdrawal (six items), perceived discrimination (five items), and stigma resistance (five items).[27] A higher score on the remaining four subscales suggests more internalized stigma, with the exception of the stigma resistance domain. The fifth subscale (stigma-resistance subscale) is conceptually distinct from the others and has a lesser level of internal consistency. The ISMI 24-item 4-point Likert-type scale was employed in this study since it has been validated and used in other Ethiopian investigations.[28] Each ISMI item provides a declarative statement regarding a potential stigma issue, and participants react by indicating their level of agreement with each statement: 1 indicates significant disagreement; 2 indicates disagreement; 3 indicates agreement; and 4 indicates strong agreement.[22] The total internal consistency (Cronbach's alpha) of the ISMI in this study is 0.91. Internal consistency for domains is 0.70 for alienation, 0.73 for stereotype endorsement, 0.72 for discrimination experience, and 0.77 for social withdrawal. Finally, the low internalized stigma was defined as a score of 1.00–2.50, whereas high internalized stigma was defined as a score of 2.51–4.00.[29]

The independent variables are socio-demographic variables: age, sex, marital status, ethnicity, religion, educational status, occupation, and place of residence; patient-related factors: substance use (individual considers as substance use at least he or she uses one of the following listing substances (alcohol, kchat, or cigarette)), social support, suicidal ideation/attempt; treatment-related factors: frequency, poly therapy, duration of treatment, way of getting medication, psycho education; illness-related factors: type of mental disorders, comorbid illness.

To collect socio-demographic information and stigma-related factors, a structured questionnaire was used. Reviewing patient documents yielded information on the type of mental disorder, frequency of medicines, co-morbid illness, and duration of treatment and polytherapy. The Oslo three-item social support scales were used to assess social support: a sum score scale ranging from 3 to 14, which is operationalized as low support 3–8, moderate support 9–11, and good support 12–14.[30]

Quality control and data collection

A pre-tested assessment-administered questionnaire was used to collect data, along with clinical data from the individuals' medical records. The training of data collectors and supervisors was done using a training manual. Ten percent of the sample size participated in a pretest to evaluate the effectiveness of the data collection tool. Based on the outcomes of the pretest, certain modifications to the questionnaire were made, and internal consistency was examined. The confidentiality of the participants was guaranteed, and the questionnaire was kept anonymous. Every day, trained supervisor and data collectors verified the validity of the questionnaire.

Statistical analysis

The data were first double-checked for accuracy and consistency. The data were then coded and entered into Epi data version 4.4.2.1, and SPSS version 20 was used to analyze it. Numbers, frequencies, tables, charts, and figures were used to present the data. To find relevant factors, a bi-variate logistic regression analysis was used and p-value < 0.2 candidate for multivariable logistic regression. Confounding was managed using multivariable logistic regression and the Hosmer–Lemeshow goodness of fit test done to check model fitness that p value result 0.97. The odds ratio and 95% confidence interval were used to show the presence of a connection. For this investigation, a p-value of less than 0.05 is considered statistically significant.

The health science ethical review committee of Debre Markos University gave their approval (reference number: HSC/R/C/Ser/co/89/11/11). Each hospital provided a permission letter; participants' names and addresses were not collected; participants were educated about the study's benefits, confidentiality, and their rights to discontinue the interview at any time; and since we include individual who have insight (having an understanding about their illness) verbal informed consent was obtained prior to data collection from each participant and approved by health science ethical review committee of Debre Markos University.

Result

We invited 619 participants, but 610 participants volunteered to participate in this study, with a 98.6% response rate. Females made up 52.3% of those who took part in the survey. Participants were 31 years old on average. There were 254 single people (41.6%) among the total participants, with 39.8% married. Almost, majority of the participants were

Table 1. Socio-demographic characteristics of patients with mental disorders who had follow-up at DMRH, FSDH, and FHRH in March 2019 ($n = 610$).

Variables	Categories	Frequency	Percent
Sex	Male	291	47.7
	Female	319	52.3
Marital status	Single	254	41.6
	Widowed	26	4.3
	Divorced	87	14.3
	Married	243	39.8
Age in years	18–24	124	20.3
	25–34	241	39.5
	35–44	141	23.1
	>44	104	17.0
Religion	Orthodox	507	83.1
	Protestant	21	3.4
	Muslim	80	13.1
	Catholic	2	0.3
Ethnicity	Amhara	592	97.0
	Oromo	5	0.8
	Tigre	1	0.2
	Gurage	4	0.7
	Agew	8	1.3
Job	Government employed	111	18.2
	Private business	131	21.5
	Farmer	157	25.7
	Daily laborer	28	4.6
	Student	66	10.8
	Household worker	59	9.7
	Jobless	58	9.5
Educational status	Cannot read and write	144	23.6
	Primary school	189	31.0
	Secondary school	130	21.3
	Diploma and above	147	24.1
Residence	Rural	253	41.5
	Urban	357	58.5

DMRH: Debre Markos Referral Hospital; FSDH: Finote Selam District Hospital; FHRH: Felege Hiwot Referral Hospital.

Amhara by their ethnicity, and 507 (or 83.1%) being orthodox by their religion. One hundred fifty-seven (25.7%) of the survey participants were farmers, whereas 189 (31.0%) had completed primary school. Over half of the participants, 357 (58.5%) live in cities (Table 1).

Illness-related factors

The majority of participants, 558 (91.5%) did not have any comorbid illnesses, and only 52 (8.5%) had known comorbid illness. Hypertension, HIV/AIDS, diabetes mellitus, epilepsy, dyspepsia, and hyperthyroidism were the type of comorbid illness that were found in this study. Among study participants, 281 (46.1%) were diagnosed psychotic disorder especially schizophrenia. Major depressive disorder was diagnosed in 168 people (27.5%), whereas other disorders, such as dementia, insomnia, somatic symptoms, and drug use disorder, were diagnosed in 17 people (2.8%) (Table 2).

Table 2. Comorbid illness distribution of patients with mental disorders who had treatment appointment at DMRH, FSDH, and FHRH in March 2019 ($n = 610$).

Variables	Categories	Frequency	Percent
Comorbid illness	No	558	91.5
	Yes	52	8.5
Diagnosis	Anxiety disorder	71	11.6
	Bipolar disorder	73	12.0
	Major depressive disorder	168	27.5
	Psychotic disorder	281	46.1
	Other disorders	17	2.8

DMRH: Debre Markos Referral Hospital; FSDH: Finote Selam District Hospital; FHRH: Felege Hiwot Referral Hospital.

Mental disorders treatment-related variables

More than half of the responders, 381 (62.5%) obtained their medication free of charge. Two hundred forty-seven (40.5%) participants did not get psycho education about mental disorders (nature of disease, cause of illness, and duration of treatment). The majority of patients, 469 (76.9%) used one-type medication and 464 (76.1%) took it once daily. Risperidone, fluoxetine, and carbamazepine were the most often prescribed antipsychotics, antidepressants, and mood stabilizers, respectively. Two hundred seventy-five (45.1%) participants were on treatment for less than 1 year (Table 3).

Patient-related factors

Among study participants, 104 (17%) used at least one substance (alcohol, kchat, or cigarette), since they start medication and 54 (8.9%) participants used substance in the last 3 months. Regarding to suicide, 219 (35.9%) participants had suicidal ideation in their life time and 82 (13.4%) participants had suicidal attempt. In terms of social support, 285 (46.7%) participants had moderate social support (Table 4).

Prevalence of perceived stigma

According to the ISMI tool, 215 respondents (35.2%) had high scores and 395 respondents (64.8%) had low scores.

From bi-variate analysis, marital status, educational status, residence, way of getting medication, substance use since starting medication, getting psychoeducation, social support, duration of treatment, age, suicidal ideation, and suicidal attempt were variables that fulfilled the minimum requirement ($p < 0.2$) and for further analysis entered to multiple logistic regression. On the other hand, sex, religion, job, comorbid illness, type of mental disorder, type of medication that took by the patient,

Table 3. Treatment-related factor distribution of patients with mental disorders who had treatment appointment at DMRH, FSDH, and FHRH in March 2019 ($n = 610$).

Variables	Categories	Frequency	Percent
Way of getting medication	Free	381	62.5
	Fee	229	37.5
Getting psycho education	No	247	40.5
	Yes	363	59.5
Inpatient management history	No	467	76.6
	Yes	143	23.4
Type of medication	One type	469	76.9
	Two types	141	23.1
Frequency of medication	One time	464	76.1
	Two and more times	146	23.9
Duration on treatment	< 1 year	275	45.1
	(1–5 years)	236	38.7
	> 5 years	99	16.2

DMRH: Debre Markos Referral Hospital; FSDH: Finote Selam District Hospital; FHRH: Felege Hiwot Referral Hospital.

Table 4. Patient-related factor distribution of patients with mental disorders who had treatment appointment at DMRH, FSDH, and FHRH in March 2019 ($n = 610$).

Variables	Categories	Frequency	Percent
Use at least one substance (alcohol, chat, and cigarette) since start treatment	No	506	83.0
	Yes	104	17.0
Substance use in the last 3 months	No	556	91.1
	Yes	54	8.9
Suicidal ideation in your life	No	391	64.1
	Yes	219	35.9
Suicidal attempt in your life	No	528	86.6
	Yes	82	13.4
Social support	Having poor	122	20.0
	Having moderate	285	46.7
	Having strong	203	33.3

DMRH: Debre Markos Referral Hospital; FSDH: Finote Selam District Hospital; FHRH: Felege Hiwot Referral Hospital.

and frequency of medication did not fulfill the minimum requirements and were exclude from further analysis.

From multivariable logistic regression, being single (AOR = 1.84, 95% CI: 1.12, 3.02), accessing their medication freely (AOR = 1.70, 95% CI: 1.08, 2.67], having suicidal thoughts (AOR = 1.95, 95% CI: 1.25, 3.03), having low social support (AOR = 5.09, 95% CI: 2.95, 8.76), age 25–34 years (AOR = 1.94, 95% CI: 1.11, 3.40), age 35–44 years (AOR = 2.10, 95% CI: 1.06, 4.18), and age > 44 years (AOR = 3.48, 95% CI: 1.67, 7.24), were found to be strongly linked factors ($p < 0.05$) with high perceived stigma (Table 5). But married, getting their medication by payment, have no suicidal thought, having moderate and strong social support, and young age were significantly associated with low perceived stigma. Place of residence, occupation, educational status, type of mental disorders, comorbid illness, and frequency were not associated with high and low perceived stigma.

Discussion

People with mental disorders have challenges not only in terms of their symptoms, but also in terms of their social acceptance. According to this study, 35.2% of people report high perceived stigma. Being single, having unrestricted medicine access, having history of suicide ideation, low social support, and being between the ages of 25 and 34, 35 and 44, > 44 years were all found to be significantly associated factors to high perceived stigma ($p < 0.05$).

In this study, high perceived stigma against those with mental disorders was reported with (95% CI: 31.1, 39.3). It exceeded the findings of research done in Canada and Nigeria

Table 5. Factors associated with high perceived stigma among patients with mental disorders who had treatment appointment at DMRH, FSDH, and FHRH in March 2019 ($n = 610$).

Variables	Category	Perceived stigma		COR (95% CI)	AOR (95 CI)
		Low	High		
Marital status	Single	157	97	1.41 (0.97–2.05)	1.84 (1.12–3.02)*
	Widowed	15	11	1.67 (0.73–3.82)	1.06 (0.43–2.63)
	Divorce	54	33	1.40 (0.84–2.33)	1.12 (0.62–2.00)
	Married	169	74	1	1
Educational status	Cannot read and write	76	68	2.39 (1.47–3.90)	1.54 (0.80–2.98)
	Primary school	135	54	1.07 (0.66–1.73)	0.97 (0.55–1.70)
	Secondary school	77	53	1.84 (1.11–3.05)	1.63 (0.91–2.91)
	Diploma and above	107	40	1	1
Residence	Rural	152	101	1.42 (1.01–1.98)	1.05 (0.67–1.65)
	Urban	243	114	1	1
Way of getting medication	Free	222	159	2.21 (1.54–3.18)	1.70 (1.08–2.67)*
	Fee	173	56	1	1
Getting psychoeducation	No	168	79	0.79 (0.56–1.10)	1.03 (0.70–1.51)
	Yes	227	136	1	1
Substance use since start Rx	No	336	170	1	1
	Yes	59	45	1.51 (0.98–2.32)	1.09 (0.66–1.79)
Suicidal ideation	No	275	116	1	1
	Yes	120	99	1.96 (1.39–2.76)	1.95 (1.25–3.03)**
Suicidal attempt	No	348	180	1	1
	Yes	47	35	1.44 (0.90–2.31)	0.65 (0.35–1.22)
Social support	Low	42	80	6.69 (4.06–11.02)	5.09 (2.95–8.76)**
	Moderate	195	90	1.62 (1.07–2.45)	1.45 (0.92–2.26)
	Strong	158	45	1	1
Age	18–24 years	92	32	1	1
	25–34 years	156	85	1.57 (0.97–2.54)	1.94 (1.11–3.40)*
	35–44 years	91	50	1.58 (0.93–2.68)	2.10 (1.06–4.18)*
	> 44 years	56	48	2.46 (1.41–4.30)	3.48 (1.67–7.24)**
Duration of Rx	< 1 year	192	83	0.67 (0.41–1.07)	0.89 (0.51–1.55)
	(1–5) years	143	93	1.00 (0.62–1.62)	1.18 (0.68–2.05)
	> 5 years	60	39	1	1

COR: crude odds ratio; CI: confidence interval; AOR: adjusted odds ratio; DMRH: Debre Markos Referral Hospital; FSDH: Finote Selam District Hospital; FHRH: Felege Hiwot Referral Hospital.
*$p < 0.05$; **$p < 0.005$.

(24.4% and 22.5%, respectively).[5,6] The difference may be due to: the use of the tool to measure perceived stigma (in Canada, use of the Canadian Community Health Survey—Mental Health tool) as well as variations in socioeconomic status and the accessibility of mental health services. From Nigeria, a difference may be due to in sample size (small sample size in Nigeria), socioeconomic status difference, and availability of mental health services difference.

However, the perceived stigma in this study was lower than in a previous study done in Ethiopia 83.5%.[7] This disparity may be due to population differences and instrument difference; a previous study done in Ethiopian was focused only on schizophrenia, and perceived stigma was measured using the perceived devaluation and discrimination scale. Patients with acute symptoms of schizophrenia are known to exhibit odd conduct that deviates from socially accepted norms, exposing them to stigma and prejudice.

In terms of social support, patients who have low social support were 5.09 times more likely than those who have strong social support to develop higher perceived stigma. This finding was supported by study done in Nigeria.[6] This could be explained by the fact that while strong social support improves a person's sense of identity and integration into a group, it also lessens the negative emotions that are essential components of perceived stigma, such as alienation, discrimination, and social withdrawal. Hence, those with poor social support might score higher on those subscales that might confer the experience of high perceived stigma on them. Social support is a crucial factor in determining self-esteem and effectiveness. Among study

participants, 80 (13.1%) of patients who had poor social support had high perceived stigma.

In this study, 97 (15.9%) of single patients had high perceived stigma and single participants were 1.84 more likely to develop high perceived stigma, compared with married participants. This finding is supported by *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5).[31] Single individuals may develop stress and feel loneliness, which is risk to develop low self-esteem. In this study, 159 (26.1%) patients got their medication for free. Patients who had to pay for their medication had a 1.7 times higher chance of developing high perceived stigma than patients who received their medication by fee. This may due to people who got medication freely may consider themselves as unimportant person. Patients who had suicidal ideation, 99 (16.2%) of the study participants had high perceived stigma. Individuals who have suicidal thoughts were 1.95 times more likely than those who have no suicidal thoughts to develop high perceived stigma. This was supported study done Swiss.[32] This may be due to, people who have suicidal thoughts may blame themselves and religion followers may think that killing themselves is forbidden by God. A negative perception is frequently held of suicidal people, labeling them as weak, and unable to cope with their problems, or selfish. Participants in their late 20s and early 30s were more likely to have higher levels of perceived stigma, compared with younger participants. Participants age (35–44, >44 years) 2.10 and 3.48 were more likely to have higher levels of perceived stigma, respectively. This shows that as a patient becomes older, their likelihood of experiencing stigma increases as well. This may be because as people get older, they feel themselves to be more alone and have more coexisting medical issues and functional issues.

Strength and limitation of this study

We consider this study have some strengths, including: To our knowledge, this is the first study focused on exploring levels of perceived stigma, using a standardized measure, and including a large sample to show perceived stigma among those who have mental disorders. Limitation includes: People with higher levels of perceived stigma might not have had hospital follow-up, which could underestimate the magnitude of perceived stigma and including dementia may affect our study. The quantitative results were not supported with qualitative findings. Due to recall bias, the degree of perceived stigma was underestimated because we employed self-report to measure it.

Conclusion

In this study, they found high levels of perceived stigma in a third of their target population. Being single, having unrestricted medical access, having history of suicide ideation, low social support, being between the ages of: 25 and 34, 35 and 44, and >44 years were all found to be significantly associated factors. But married, access medication by fee, have no suicidal thought, having moderate and strong social support and young age were significantly associated with low perceived stigma.

Recommendation

To health care providers

It is better to give psychoeducation for patients who have suicidal thoughts to reduce stigma and give attention to people who have low social support, age >44 years old. Engage family members and community in psychoeducational programs to reduced perceived stigma.

To researchers

It is good to further study with other study designs and methods to provide strong evidence regarding prevalence and associated factors of perceived stigma. It is better to assess the prevalence and associated factors of perceived stigma in the community.

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Author contributions

A.G. generated the original idea, developed proposal, designed the study, collected the data, analyzed and interpret findings, prepared manuscript, and participated in all stages of the research. H.A., M.S., A.D.A., D.H., and A.S.I. participated in proposal development, design, analysis and interpretation of finding, data collection, preparation of manuscript, and all stages of the research.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval

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Informed consent

Since we include individual who have insight (having an understanding about their illness), verbal informed consent was obtained

prior to data collection from each participant and approved by health science ethical review committee of Debre Markos University.

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Supplemental material

Supplemental material for this article is available online.

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