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ORIGINAL RESEARCH

Determinants of Disability Among Individuals Living with Schizophrenia Attending Psychiatric Follow-Up Clinic in Jimma, Southwest Ethiopia: An Institution-Based Case-Control Study

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Background: Disability due to schizophrenia ends up with a higher degree of impairment in occupational, social and interpersonal functioning than other chronic illnesses. Despite severe and long-lasting schizophrenia associated disability, little has been explored so far to identify determinants of disability among individuals living with schizophrenia in Ethiopia.

Objective: To identify the determinants of disability among individuals living with schizophrenia attending the psychiatric follow-up clinic at Jimma Medical Center (JMC).

Methods: An institution-based unmatched case-control study was conducted among 98 Cases and 98 controls of individuals living with schizophrenia attending the JMC psychiatric clinic from September 1 to October 30, 2022. Consecutive sampling technique was used to recruit the required sample size of both groups. The cases group were participants who scored >12 total on the WHO Disability Assessment Scale version 2–0 (WHODAS 2–0) whereas the control group were those who scored 12 total on the WHODAS 2–0.

Results: Being jobless (AOR = 2.29; 95% CI: 1.10–4.77), longer than 5-year duration of illness without treatment (AOR = 3.13; 95% CI: 1.23–7.98), poor social support (AOR = 2.54; 95% CI: 1.04–6.22), negative symptoms (AOR = 2.45; 95% CI: 1.14–5.29), known family history of mental illness (AOR = 3.59; 95%: 1.67–7.73) and risky khat use (AOR = 4.37; 95% CI: 1.86–10.29) were found to be determinants of disability among schizophrenia patients.

Conclusion: Joblessness, longer than 5-year duration of illness without treatment, poor social support, negative symptoms, known family history of mental illness and risky khat use were found to be determinants of disability in schizophrenia patients. Interventions targeting reducing of disability and improving quality of life of schizophrenia patients should consider the aforementioned determinants.

Keywords: disability, schizophrenia, Jimma Medical Center

Introduction

Schizophrenia is a severe, chronic and recurrent psychotic disease which affects how a person thinks, feels, and behaves. It can cause a range of symptoms, including delusions, hallucinations, disorganized speech or thinking, catatonic and negative symptoms that last at least six months. Schizophrenia can be disabling and interfere with an individual's ability to maintain interpersonal relationships, occupational performance, overall self-care, medical care, and worsening physical health.[1–3] Because schizophrenia is a progressive and deteriorating illness both patients and their families often suffer from poor self-care and its disabling effects.[4,5]

Schizophrenia is a major public health problem that affects up to 1% of the general population, with men and women being equally affected.[6] It is one of the most disabling and economically devastating mental disorders, and the WHO ranks it as one of the top ten illnesses contributing to the global burden of disease (GBD).[7] Schizophrenia contributes

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13.4 million years of life lived with disability to the global burden of disease which accounts for 1.1% of total disability adjusted life years (DALY) and accounts for 2.8% of years lived with a disability.[8,9] People with schizophrenia are two to three times more likely than the general population to die early.[9–12]

According to an Indian study, the greatest (88%) disability was found in interpersonal activities, followed by communication and understanding (78%), work (76%), and self-care (40%). Overall, 44%, 42%, and 14% of patients with schizophrenia experienced mild, moderate, or severe disability as a result of their illness, respectively. In a study conducted in Nigeria, 78% of people with schizophrenia were disabled. Only 1% had severe disability, while 77% had mild to moderate disability. The domains with the highest prevalence rates of disability were participation in society and getting along, while the domains with the lowest prevalence rates were activities (household, work, and school) and self-care.[13]

Despite more than five decades of pharmacological and psychosocial interventions, schizophrenia continues to be one of the leading causes of disability globally.[14] Based on the findings of a randomized clinical trial study conducted in California, aging in people with schizophrenia is typically associated with improvement in positive symptoms and decreased hospitalization; approximately 60% of older people with schizophrenia in the United States still reside in assisted care settings.[11] In Ethiopia, the prevalence of schizophrenia is estimated to be between 0.5% and 1%, and it is also a leading cause of disability. A cross-sectional study done in northern Ethiopia shown that the magnitude of disability among patients living with schizophrenia was 41.7%.[15]

The severity of schizophrenia associated disability varies depending on a number of factors, including the severity of the symptoms, the level of social support, more than 5 years of illness duration, untreated symptoms for more than 5 years, negative symptoms, multiple relapse, and availability of mental health services.[11,15,16]

The administration of antipsychotic treatment, including both first and second generation antipsychotics, in the management of schizophrenia has been associated with the development of tardive dyskinesia which might lead to disability Antipsychotic-based machine learning models may help with the prediction of tardive dyskinesia occurring in patients with schizophrenia.[17,18] However, schizophrenia is currently not preventable, it is critical to assist individuals suffering from schizophrenia symptoms in receiving treatment as soon as possible with both antipsychotic medications and psychosocial treatments.[4]

Despite the fact that the magnitude and severity of disability in patients with schizophrenia were found to be high in Ethiopia, little has been explored and analyzed in order to identify specific determinants of disability in patients with schizophrenia which is critical for the prevention and integration of treatment modalities.

Methods

Study Area and Period

An institution based unmatched case-control study design was conducted from September 1, 2022 to October 30. The study was conducted at Jimma Medical Center (JMC) which is found in Jimma town, located 352 km south west of Addis Ababa, the capital city of Ethiopia, located at an altitude of 1500–2700 meters above sea level. The psychiatric clinic is one of the many chronic follow-up clinics at the JMC available on every work day. Monthly more than 570 schizophrenia patients are seen on follow up in the psychiatric clinic.

Study Design

An institution-based, unmatched case-control study was conducted.

Source Population

All individuals living with schizophrenia attending the psychiatric follow up clinic at Jimma Medical Center during the data collection period.

Study Population

All individuals with a disability and without a disability were included in this study as cases (an individual who scored >12 for total sum on the WHODAS 2–0 12 items score) and as controls (an individual who scored 12 for total sum on the WHODAS 2–0 12 items score), respectively.

Inclusion Criteria

All individuals living with schizophrenia attending the psychiatric follow-up clinic during the data collection period were included in this study as a case (who scored >12 for sum on the WHODAS 2–0 12 items score) and as a control (who scored 12 for total sum on the WHODAS 2–0 12 items score) were included.

Exclusion Criteria

Acutely ill individuals who were not able to respond during data collection.

Diagnostic ambiguity during follow-up visit.

Individuals with comorbid mental illness.

Sample Size Determination

EPI INFO, version 7 statistical software for un-matched case control study design was used to calculate the sample size using the double population formula for an unmatched case control study by considering the proportion of current alcohol use in controls 36.8% with odds ratio 2.47 in a previous study done in in Ethiopia.[15] With an assumption of 95% CI, 80% power, control to case ratio 1:1 the sample size was 178. By adding 10% non-response rate the total sample size becomes 196 (98 controls and 98 cases).

Sampling Technique and Procedures

Participants were recruited using a consecutive sampling technique. First, all study participants were screened by WHODAS 2-0 12 items and participants who scored >12 from total sum on the WHODAS 2-0 12 items were considered as cases. Following identification of cases, respective controls, participants who scored 12 from total sum on the WHODAS 2-0 12 items were identified. The participants who were eligible and willing to participate in the study were interviewed from both groups. Data was collected by face-to-face interview with structured interviewer administered questionnaires used for data collection. The patient's charts were reviewed to assess the type of current medication used and its side effects.

Data Collection Instruments

World Health Organization Disability Assessment Schedule 2.0, 12 items was used to assess the functional disability of patients with mental illness.[19] It has been adapted and validated in the rural Ethiopian setting among people with severe mental disorders.[20]

Structured questioners were used to assess the socio-demographic factors of age, sex, ethnicity, religion, marital status, residence, education, income and occupational status which were adopted from different literatures.

A questionnaire for clinical inventory was designed to collect age of onset of the illness, total duration of illness, duration of illness without treatment, medical illness comorbidity, known family history of mental illness and types of currently used medication and their side effects.

The severity of positive and negative symptoms was assessed by using the positive and negative syndrome scale (PANSS).[21,22] The Cronbach's alpha of PANSS in this study was 0.94.

The medication adherence rating scale (MARS): was used to assess medication adherence status of the study participants.[23] The Cronbach's alpha of MARS in this study was 0.70.

Perceived devaluation and discrimination scale (PDDS): is a most widely used tool to assess perceived stigma among people with severe mental illness.[24,25] The Cronbach's alpha of PDDS in this study was 0.88.

Oslo social support scale (Oslo-3): This is a three-item brief assessment of social support which has been widely used by different studies and has good psychometric properties.[26] The Cronbach's alpha of Oslo-3 in this study was 0.87.

The alcohol, smoking, and substance involvement screening test (ASSIST-3): Used to assess the current alcohol, cigarettes, and khat and cannabis use status of the participants.[27] The Cronbach's alpha of ASSIST-3 in this study was 0.80.

Dependent Variable

Disability.

Independent Variables

Socio-demographic related variables: age, sex, marital status, educational status, residence, religion, ethnicity, occupation, and Income.

Clinical variables: positive symptoms, negative symptoms, age at onset of illness, duration of illness without treatment, total duration of the illness, medication adherence, type of currently used medications, medication side effects, and comorbid with another medical illness.

Psychosocial variables: social support, known family history of mental illness, and perceived stigma.

Risky substance related variables: alcohol, tobacco, khat, and others (cannabis/hashish).

Operational Definition

Duration of illness without treatment: Is the time between the onset of first-episode of psychosis and first treatment.[15]

Disability: Disability score was explained through mild to extreme which may differ by their intensity, scored >12 from total sum on the WHODAS 2-0 12 items score.[28]

Case: Is an individual who scored >12 for total sum on the WHODAS 2–0 12 items.

Control: Is an individual who scored 12 for total sum on the WHODAS 2–0 12 items.

Negative and positive symptoms: Participants were asked for each question have you ever experienced any negative or positive symptoms and the responses were yes/no. Verbal report and physical manifestations during the course of the interview as well as reports of behavior by primary care givers or families also reviewed.[15]

Perceived stigma: Scoring greater than or equal to the mean score of 2.5 on PDD scales as having "high perceived stigma" and those scoring below the mean score as having "low perceived stigma".[24]

Medication adherence: Adherence is usually equivalent to scores greater than 5 whereas non-adherence is less or equal to 5.[23]

Level of social support: A score of 3–8 is poor support, 9–11 is moderate support, and 12–14 is strong support.[26]

Risky substance use: Total score stages for alcohol are 0–10 (low risk), 11–26 (moderate), and ≥27 (excessive risk). Total risk scores for khat, tobacco, and hashish are similar: low (0–3), reasonable (4–26), and high (≥27).[27]

Data Quality Assurance

A structured questionnaire and patient's card (reviewed by the authors after reviewing different literatures) were used. Data was collected through face-to-face interview by four psychiatric nurses. The instruments were pre-tested in 5% of the sample size at Shenan Gibe General Hospital and the reliability and understandability of the questionnaire was checked. The questionnaire was prepared in English, and translated to Afan Oromo, Amharic, and back translated to English to ensure consistency. The data collection procedure was supervised and the collected data was checked for completeness, consistency, and clarity. Data quality was ensured during data entry, coding, cleaning, and analysis.

Data Analysis Procedure

All collected data were checked for completeness and consistency and entered into Epi-data, version 4.6 and exported to SPSS, version 26 for analysis. The descriptive data were computed, bi-variable and multivariate logistic regression was made to test the association between independent and dependent variables and variables with a p-value of <0.25 were transported to the multivariable logistic regression. Finally, predictor variables with a p-value of <0.05 in the multivariable logistic regression model were taken as determinants of disability. The adjusted odds ratio (AOR) and 95% confidence interval (CI) were used to measure the strength of the association. Model fitness and multi-collinearity was checked as Hosmer and Lemshow's goodness of fit test at p value >0.05 and a variation inflation factor (VIF) value for each independent variable is <10.

Results

Socio-demographic Characteristics of the Study Participants

A total of 196 participants (98 cases and 98 controls) were involved in the study. The mean ages (± standard deviation) of cases and controls were 41.14 (±12.143) years and 33.85 (±10.982) years, respectively. There were more males in both cases 57 (58%), females 41 (42%) and controls 54 (55%), females 44 (45%) (Table 1).

Table 1 Socio-demographic Characteristics of Disability Among Individuals Living with Schizophrenia, Attending the Psychiatric Follow-Up Clinic at JMC, Southwest Ethiopia, 2022.

Variables	Category	Status of disability		Total (N) Number (%)
		Yes (Cases) = 98 Number (%)	No (Controls) = 98 Number (%)	
Age	<18	10(10.2)	7(7.1)	17(8.7)
	18–24	8(8.2)	9(9.2)	17(8.7)
	25–39	39(39.8)	44(44.9)	83(42.3)
	40–49	28(28.6)	23(23.5)	51(26)
	≥50	13(13.3)	15(15.3)	28(14.3)
Sex	Male	57(58)	54(55)	111(56.6)
	Female	41(42)	44(45)	85(43.4)
Marital status	Married	39(40)	38(38.5)	77(35.5)
	Single	46(46.6)	48(49)	94(50)
	Widowed	6(6.2)	10(10.2)	16(8.2)
	Divorced/ Separated	7(7.2)	9(9.2)	16(8.2)
Ethnicity	Oromo	70(71.4)	51(52)	121(61.7)
	Amhara	10(10.4)	15(15.3)	25(12.8)
	Dawuro	9(9.1)	14(6.2)	23(11.8)
	Others[b]	9(9.1)	18(18.5)	27(13.8)
Religion	Muslim	62(63.2)	50(51)	112(57.1)
	Orthodox	14(14.2)	20(20.4)	34(17.3)
	Protestant	16(16.3)	21(21.4)	37(18.9)
	Others[a]	6(6.3)	7(7.1)	13(6.6)
Residency	Urban	44(44.9)	42(42.9)	86(43.9)
	Rural	54(55.1)	56(57.1)	110(56.1)
Educational status	Cannot read and write	6(5)	10(10.2)	16(8.2)
	Read and write	14(14)	16(16.3)	30(15.3)
	Primary (1–8)	36(37)	38(20.7)	74(37.8)
	Secondary (9–12)	29(30)	20(20.4)	49(25)
	College & above	13(14)	14(14.2)	27(13.8)

(*Continued*)

Table 1 (Continued).

Variables	Category	Status of disability		Total (N) Number (%)
		Yes (Cases) = 98 Number (%)	No (Controls) = 98 Number (%)	
Job status	Ha job	41(41.8)	63(64.3)	104(53)
	Jobless	57(58.2)	35(35.7)	92(57)
Monthly income	<Poverty level	79(80.6)	72(73.5)	151(79)
	>poverty level	19(19.4)	26(26.5)	19(21)

Notes: Others[a] (Kafa, Yem, Tigre), Others[b] (Wakeffata, Catholic).

Clinical Characteristics of the Study Participants

The majority of respondents had negative symptoms almost more than half in cases and around one third in controls. More than three fourths in both cases and controls participants had no positive symptoms (Table 2).

Table 2 Clinical Characteristics of Disability Among Individuals Living with Schizophrenia Attending Psychiatric Follow-Up Clinic at JMC, Southwest Ethiopia, 2022.

Variables	Categories	Status of disability		Total (N) Number (%)
		Cases = 98 Number (%)	Controls = 98 Number (%)	
Age onset of illness	10–19	30(30.6)	25(25.4)	55(28.1)
	20–29	17(17)	18(18.1)	35(17.9)
	30–39	30(31)	28(29)	58(26.9)
	≥40	21(21.4)	27(27.5)	48(24.5)
Total duration of illness	<=1	10(11.2)	12(12.2)	22(11)
	2–5	50(51)	29(29.6)	79(40)
	>5	38(38.8)	57(58.2)	95(39)
Duration of illness without treatment?	1–2	32(32.7)	48(48.8)	80(40.8)
	3–5	26(26.5)	39(39.9)	65(33.2)
	>5	40(40.8)	11(11.2)	51(26)
Type of currently medication used	1st generation	35(36)	38(39)	73(37.2)
	2nd generation	63(64)	60(61)	123(62.8)
Medication side effects	Yes	55(56.1)	47(48)	102(52)
	No	43(43.9)	51(52)	94(48)
Medical illness comorbidities	Yes	40(49)	44(45)	84(42.9)
	No	58(49)	54(55)	112(57.1)
Positive symptoms	Yes	17(18)	15(15.5)	32(16)
	No	81(82)	83(84.5)	164(84)

(*Continued*)

Table 2 (Continued).

Variables	Categories	Status of disability		Total (N) Number (%)
		Cases = 98 Number (%)	Controls = 98 Number (%)	
Negative symptoms	Yes	54(55.1)	35(35.7)	89(45.4)
	No	44(44.9)	63(64.3)	107(54.6)
General psychopathology symptoms	Yes	22(22.4)	28(28.6)	50(25.5)
	No	76(77.6)	70(71.4)	146(74.5)
Medication non-adherence	Yes	72(73.5)	64(65.3)	136(69.4)
	No	26(26.5)	34(34.7)	60(30.6)

Psychosocial and Risk Substance Use Characteristics of the Participants

The majority of both cases (around 77.6%) and controls (62%) had experienced perceived stigma and devaluation. More than half of participants in cases and almost half of respondents in controls had low alcohol risk use. Around 1/3 of both groups had high risk of tobacco use. Around one-third of cases and half of participants in controls had low risk use of khat (Table 3).

Table 3 Psychosocial and Risk Substance Use Characteristics of Disability Among Individuals Living with Schizophrenia Attending Psychiatric Follow-Up Clinic at JMC, Southwest Ethiopia, 2022.

Variables	Category	Status of disability		Total (N) Number (%)
		Cases = 98 Number (%)	Controls = 98 Number (%)	
Social support	Poor	43(43.9)	12(12.2)	55(28.1)
	Moderate	20(20.4)	41(41.8)	61(31.1)
	Strong	35(35.7)	45(46)	80(40.8)
Family history of mental illness	Yes	61(62.7)	35(35.7)	96(49)
	No	37(37.3)	63(64.3)	100(51)
Perceived stigma	Yes	76(77.6)	62(63.3)	138(70.4)
	No	22(22.4)	36(36.7)	58(29.6)
Risky use of alcohol	Low risk	52(53.1)	47(48)	99(50.5)
	Moderate risk	23(23.5)	19(19.4)	42(21.4)
	High risk	23(23.5)	32(32.7)	55(28.1)
Risky use of tobacco	Low risk	43(43.8)	37(37.8)	80(40.8)
	Moderate	27(27.6)	29(29.6)	56(28.6)
	High risk	28(28.6)	32(32.7)	60(30.6)
Risky use of khat	Low risk	29(29.6)	52(53.1)	81(4.3)
	Moderate risk	13(13.3)	17(17.3)	30(15)
	High risk	56(57.1)	29(29.6)	85(43.3)

(*Continued*)

Table 3 (Continued).

Variables	Category	Status of disability		Total (N) Number (%)
		Cases = 98 Number (%)	Controls = 98 Number (%)	
Risky use of other substances	Low risk	80(81.7)	73(74.5)	153(78.1)
	Moderate	8(8.2)	12(12.2)	20(10.2)
	High risk	10(10.2)	13(13.2)	23(11.7)

Notes: Other substances (cannabis, hashish, inhalant).

Factors Associated with Disability

Bivariate analysis was done to see the association between each independent variable and disability status. Hence eleven variables; being jobless, having a monthly income below poverty level, having >5 years total duration of illness, having >5 years duration of illness without treatment, having negative symptoms, medication non-adherence, poor social support, perceived stigma, having a known family history of mental illness, high risk use of alcohol, and high-risk use of khat showed an association with disability at the p-value of less than 0.25. These variables were simultaneously entered into multivariable analysis in order to determine independent predictors of disability.

In multivariable logistic regression six variables were found to be independent predictors of disability. The obtained final model shows that being jobless was significantly associated with disability, indicating that patients who were jobless were more than twice as likely as those who had a job to develop disability with an AOR of 2.29 (1.10–4.77).

This study also found that having been ill for more than 5 years without treatment was a predictor of disability which explored that schizophrenic patients who had been ill for more than 5 years without treatment were about three times more likely to develop a disability, with an AOR of 3.13 (1.23–7.98).

Poor social support was found to be a risk factor for disability in this study with an AOR of 2.54 (1.04–6.22). Patients with poor social support were 2.54 times more likely to develop a disability than patients with good social support.

The greater likelihood of disability occurred 2.45 times in schizophrenic patients than those who had negative symptoms currently as compared to their counterparts, with an AOR of 2.45 (1.14–5.29).

Participants with a known family history of mental illness were around three and half times more likely to develop a disability than those who had no known family history of mental illness with an AOR of 3.59 (1.67–7.73).

Higher risky use of khat is also a determinant of disability in this study. The odds of being disabled is about four times greater in individuals with a high risk use of khat than for individuals who had no risky use of khat, with an AOR of 4.37 (1.86–10.29) (Table 4).

Table 4 Multivariable Logistic Regression Results of Determinants of Disability Among Individuals Living with Schizophrenia Attending Psychiatric Follow-Up Clinic at JMC, Southwest Ethiopia, 2022.

Variables	Categories	Disability status		COR (95% CI)	AOR (95% CI)	P-value
		Case	Control			
Job status	Has job	41(41.8)	63(64.3)	1	1	
	Jobless	57(58.2)	35(35.7)	2.51(1.41, 4.45)	2.29(1.1, 4.77)*	0.027
Duration of illness without treatment	1–2	32(32.7)	48(49)	1	1	
	3–5	26(26.5)	39(39.9)	1.1(0.51, 1.95)	0.56(0.24, 1.33)	0.129
	>5	40(40.8)	11(11.2)	5.45(2.44, 12.8)	3.13(1.23, 7.98)*	0.017

(*Continued*)

Table 4 (Continued).

Variables	Categories	Disability status		COR (95% CI)	AOR (95% CI)	P-value
		Case	Control			
Social support	Poor	43(43.9)	12(12.2)	4.61(2.12, 10.02)	2.54(1.04, 6.22)*	0.004
	Moderate	20(20.4)	41(41.8)	0.63(0.31, 1.25)	0.52(0.21, 1.26)	0.480
	Strong	35(35.7)	45(46)	1	1	
Negative symptoms	Yes	54(55.1)	35(35.7)	2.23(1.24, 3.92)	2.45(1.14, 5.29)*	0.022
	No	44(44.9)	63(64.3)	1	1	
Family history of mental illness	Yes	61(62.7)	35(35.6)	2.97(1.66,5.305)	3.59(1.67, 7.73)*	0.001
	No	37(37.3)	63(64.4)	1	1	
Risky khat use	Low risk	29(29.6)	52(53.1)	1	1	
	Moderate risk	13(13.3)	17(17.3)	1.37(0.58, 3.22)	1.45(0.46, 4.57)	0.531
	High risk	56(57.1)	29(29.6)	3.46(1.83, 6.55)	4.37(1.86, 10.29*	0.001

Notes: *Statistically significant at P-value <0.005.

Discussion

The identified independent predictors were: being jobless, duration of illness without treatment for greater than five years, poor social support, negative symptoms, known family history of mental illness, and risky khat use.

Among the socio-demographic factors, being jobless was significantly associated with disability. This finding is supported by studies conducted in Ethiopia and Taiwan.[15,29] This might be due to the reason that individuals living with schizophrenia are vulnerable to discrimination in a variety of settings, which can result in job loss and difficulty finding a new job, as well as unsatisfactory job termination such as quitting or being fired. Furthermore, academic disadvantage and unemployment in schizophrenia are all part of a vicious cycle that frequently results in poor academic performance and joblessness.[21,30,31]

This study found that having been ill for more than 5 years without treatment was a predictor of disability. This finding is supported by research conducted in Ethiopia, India, China and the United Kingdom.[15,32–34] This might be due to longer durations of untreated psychosis predicting poorer outcomes due to more severe positive and negative symptoms, a lower likelihood of remission, and poor social functioning and global outcome. It can be interpreted as evidence that untreated psychosis may constitute an active morbid process that is toxic to the brain and that influences the prognosis by worsening the schizophrenia disease process which leads to disability.[12,35,36]

Poor social support was found to be a risk factor for disability, which is consistent with previous research done in Ethiopia and Egypt.[37] This might be due to social support being found to be important in the availability of empathetic relationships, supportive and favorable attitudes among family members and the community contributing to improved outcomes in schizophrenia and in assisting people with mental illnesses in coping with life and illness-related stresses. It also explains why schizophrenicss with a lack of social support, which is associated with decreased social activity, increased relapse, and decreased interest in establishing close relationships with family, friends, and romantic partners, have poorer mental health recovery.[38,39]

Having negative symptoms is associated with disability in this study. This is supported by studies conducted in Ethiopia and the United States of America.[15,40] This could be due to the fact that negative symptoms of schizophrenia, such as difficulties with motivation, social isolation, reduced affective responsiveness, speech and mobility, are more likely to contribute to poor functional outcomes and quality of life in people with schizophrenia.[41]

The novel finding of this study is that having a family history of mental illness was an independent predictor of disability among peoples living with schizophrenia, which might be supported by research conducted in eastern Ethiopia.[30]

It might be due to a shared risk of genetic markers, environmental exposures, or a combination of these factors associated with a family history of mental illness, which causes functional impairments in schizophrenia patients.[42]

The present finding shows that high risky khat use was found to be associated with disability. This finding is supported by studies conducted in Ethiopia and Australia.[43,44] It could also be due to the prevalence of problematic khat use indicators such as negative physical and mental health effects, social withdrawal, neglect of social responsibilities, disrupting behavior and violence, causing familial problems, residential instability, and decreased functional status.[44] The possible explanation could be due to the reason that risky khat usage adds to the already debilitating disease's burden and can increase vulnerability to individuals living with schizophrenia by non-adherence to treatment and exacerbating preexisting schizophrenia symptoms or triggering new symptoms, complicating the course of the illness by causing relapse and hospitalization.[45,46]

Limitation of the Study

The subjective nature of self-reported response for some items might be limited by recall bias, also social desirability bias may also occur for some items. Incompleteness of the patient's chart is one of the shortcomings of this study since some items, like type of currently used medications and medication side effects, were abstracted from the patient chart.

Conclusion

The findings of this study revealed that the significant independent predictors of disability were joblessness, negative symptoms, greater than 5-year duration of illness without treatment, poor social support, known family history of mental illness, and risky khat use. Therefore, it is important to consider those factors while targeting and designing interventions in schizophrenia comprehensively to prevent disability and enhancing the functioning of patients. A further prospective study is encouraged to delineate determinants over a period of time. We recommend further longitudinal studies using standard diagnostic tools, including important factors that have been missed in this study, like expressed emotion, frequency of relapse, and patients' quality of life, as well as machine learning methods to further predict disability.

Abbreviations

AOR, adjusted odds ratio; ASSIST, alcohol, smoking, and substance involvement screening test; DUP, duration of untreated psychosis; DSM-5TR, Diagnostic and statistical manual of mental disorder, fifth edition text revision; GBD, global burden of disease; IRB, institutional review board. JMC, Jimma Medical Center MARS, medication adherence rating scale; PANSS, positive and negative syndrome scale; PDDS, perceived devaluation and discrimination scale; SPSS, statistical package of social science.

Data Sharing Statement

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

Ethics Approval

Ethical clearance was obtained from Jimma University institute of health institutional review board with reference number JUIH/IRB/67/22. It complies with the Declaration of Helsinki. Written informed consent was obtained from all study participants after a detailed explanation of the purpose of the study prior to data collection. For the participants under 18 years of age, the families/surrogates provided informed consent and the participants themselves provided their assent.

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Author Contributions

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

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Disclosure

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