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Pathways to psychiatric care and factors associated with delayed help-seeking among patients with mental illness: A cross sectional study

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Abstract

Objective: This study aimed to assess pathways to psychiatric care and factors associated with delayed help-seeking among patients with mental illness in northern Ethiopia using the world health organization pathway study encounter form.

Design: Cross sectional study design was used

Setting: Data was collected using face to face interview from patients with various diagnosis of mental illness attending outpatient follow up treatment at Ayder Comprehensive Specialized hospital in Mekelle City, Tigray, Ethiopia

Participants: Participants who came for follow up consecutively during the study period were included in the study

Outcome measures: Pathways to psychiatric care, delayed psychiatric treatment and factors affecting delayed psychiatric treatment

Results: The median duration from problem onset to contact with first care provider was 4 weeks, whereas to contact with modern psychiatric services was 52.0 weeks. Study participants who were single (AOR=2.91; 95%CI; 1.19, 7.11), divorced (AOR=3.73; 95%CI; 1.33, 10.49) and participants who perceive mental illness as shameful (AOR=3.29; 95%CI; 1.15, 9.41) had delayed treatment seeking behavior. Whereas, participants with no history of substance use (AOR=0.43; 95% CI; 0.20, 0.92) were less likely to have delayed treatment seeking behavior.

Conclusions: There is significant delay in seeking modern psychiatric treatment. Religious healers were the first place where help was sought for mental illness in this population. Most of the respondents described that mental illnesses were caused by supernatural causes. Stigma and lack of awareness about where treatment is available were barrier in seeking appropriate care.

Key words: pathway, psychiatric care, delayed treatment, mental illness, help-seeking

Word count: 4021

Strength and limitation of this study

- This is the first pathway study in northern part of Ethiopia with 100% response rate maintained.
- This study was conducted at tertiary hospital in patients with severe mental illness.

Therefore, the results of this study might not be generalized for those who do not reach mental health services and for those with common mental disorders.

- Recall bias regarding the onset of illness could lead to over and under reporting of the Duration of untreated mental illnesses.

Background

Mental illness is associated with high levels of chronicity, comorbidity and premature mortality (1, 2). This is due to the onset of first episode mental illnesses are usually started at early ages(3) but most people with the illnesses do not get early psychiatric treatment(4). Studies indicated that traditional and faith healers are the first source of help by majority of patients(4, 5). The reason is related with patients' knowledge about the causes and treatments of the illness and their awareness of the available services (6). These factors lead to prolonged duration of untreated mental illness (DUMI) with its adverse consequences such as poorer response to: psychotropic medications, symptoms control, and long term prognosis with more relapses. As a result, people with mental illness (PMI) develop poor quality of life and compromised social, personal and occupational functioning. Empirical studies have shown that the DUMI averages 1 to 2 years. The average DUMI is even more in developing nations. The reasons for which are yet to be explored from pathways of care service studies(7). Therefore, reducing DUMI has become the primary aim of modern psychiatric services for patients with mental illness(8). This can be achieved by identifying the patients' pathways to different help sources and factors that play role in delaying psychiatry treatment(6). Pathway to care is a comprehensive and systematized clarification of sources of care used by patients before seeking help from mental health professionals. It is a rapid and reasonable method of studying help seeking behavior of mentally ill patients and their family(9).

Descriptive studies from different countries indicate that a large number of patient do not present themselves directly to mental health professionals. They adopt path with traverses through many agencies(10). Study results indicated mixed findings regarding first source of help by PMI. While it was reported that faith healers and non-psychiatrist allopath care provider were the first to be consulted(6, 11, 12), in another studies it was psychiatrists followed by traditional healers and general practitioners (13-16). Results from two previous Ethiopian studies also presented

different findings. It was shown that 41% of patients with new episodes of neuropsychiatric disorders directly consulted a psychiatrist. A proportion 30.9% of patients had sought care from priests, holy water or church(10). In contrast, the second study reported that half of the patients sought traditional treatment from either a religious healer 30.2% or an herbalist 20.1% before they came to the hospital for psychiatric care(17).

The median DUI is affected by the paths taken by patients to arrive to psychiatry care. A Study done in different countries revealed that people with mental disorder seek treatment after 6 months and above, from the onset of their illness(6, 18). In Asian based studies where most of the initial sources of help reported were traditional or religious care providers, the median duration untreated illness greatly varies. In a study from Iran, duration of untreated psychosis and pathway to care in patients with first-episode psychosis showed that, the median duration of untreated psychosis (DUP) was 11 weeks with the mean of 52 weeks whereas, it was 64 weeks and 10.5 weeks from Pakistan and Bangladesh study results respectively(13-15). In a Nigerian study, the mean and median DUP were 72.80±75.7 and 52 weeks, respectively (11). In Ethiopian studies, the median delay between onset of illness and arrival at the psychiatric hospital was 38 weeks(10)while median duration of symptoms of mental illness before contact to modern mental health service was 52.1 weeks(17). The initial contribution healers might cause to prolong pathway to psychiatric care and possible obstacle to early detection, identification and intervention (6, 15, 18).

It was indicated that subjects who chose to use psychiatric services as first portal of care were more likely to be younger in age, unmarried, unemployed and better educated(6, 10, 17). Patients who reported financial difficulties (14), diagnosed with Schizophrenia and substance use disorders initially sought psychiatric care from non-psychiatric treatment facility or centers before seeking care at the public psychiatric hospital (16). The stigma associated with the illness and the knowledge and beliefs about the cause of mental illness was found to affect the preferences of help sources among patients and caregivers(12, 14).

However, in the northern part of Ethiopia, no scientific data available indicating pathways to psychiatry care service. Therefore, this study was conducted with the aim to assess pathway to psychiatric care service and associated factors with delayed help seeking among people with mental illness. This kind of study is very crucial to identify and intervene contributing factors for delayed psychiatric care for better treatment prognosis and outcome.

Methods

Study design and setting

Hospital based cross sectional study design was used. It was conducted at Ayder comprehensive specialized Hospital, Mekelle city, Ethiopia from May to June, 2017. Ayder comprehensive specialized hospital commenced rendering its referral and non-referral services in 2008. The hospital provides services to eight million population in its catchment areas of the Tigray, Afar and northeastern parts of the Amhara regional states. It provides inpatient and outpatient services for all age groups. The psychiatry unit has 18 beds and approximately 850 patients receive outpatient services every month. Psychiatry is the only clinical department which receives patient without referral and with referrals from all direction of the catchment area.

Participant selection

Sample size was determined using single population proportion formula assuming that 50% of the participants will seek early treatment at 95%CI and 5% margin error. Considering 10% non-response rate a total of 423 adult patients with mental illnesses were selected. Consecutive sampling method was used to select the study participants until the required sample size is achieved.

Data collection and Measurement

The data was collected using structured interviewer administered questionnaires prepared in local languages (Amharic and Tigre). Pathways to psychiatric care was assessed using World Health Organization (WHO) encounter form. This questionnaire documents the care from whom help is initially sought (the first pathway contact), and then the next carer (second pathway contact), third carer (third pathway) and finally a fourth carer (Fourth pathway) contact (19). Treatment delay was measured using median time interval in weeks from problem onset to contact with psychiatric services. To sort significant delay for seeking mental health treatment,

52.1 weeks duration was taken as a reference point from a study conducted in Southwest Ethiopia (17). Therefore, individuals who sought mental health treatment from the psychiatric hospital after 52.1 weeks from the first onset of illness were categorized as delayed and before 52.1 weeks as early treatment seeking for psychiatric care. Data was collected by eight trained BSc Psychiatry nurses using face to face interviews.

Data Processing and Analysis

The collected data was coded after checking their completeness then double entered to Epidata Version 3.1.3, cleaned and exported to SPSS version20.0 for further analysis. Descriptive statistics was computed for continuous variables. For categorical variables, bivariate analyses were performed to nominate candidate variables for multivariate logistic regression analysis. Thus, those variables with p value of 0.25 and below was fitted to multivariate logistic regression analysis model to assess variables that have association with the outcome variable and with 95% CI to control for confounding. Statistical significance was declared at p value less than 0.05.

Patient and public involvement

No patient involved.

Results

Socio-demographic characteristics of study participants

Data was collected from 423 study participants with 100% response rate. Out of the total study participants (53.4%) were males. The mean age was 32.48 (SD ±9.33) years with minimum and maximum age of 18 and 60 years respectively. About half, 48.5%, of the participants were jobless and a quarter, 25.8%, of them were (table 1).

Table 1. Socio-demographic characteristics of study participants at Ayder compressive specialized Hospital.

Variables	Responses	Frequencies	Percentages
Residence	Rural	141	33.3
	Urban	282	66.7
Age	18-30	217	51.3
	31-40	130	30.7
	41-50	59	13.9
	51-60	17	4.0
Sex	Male	226	53.4
	Female	197	46.6
Marital status	Married	104	24.6

	Single	239	56.5
	Divorced	63	14.9
	Widowed	17	4.0
Religion	Orthodox	342	80.9
	Muslim	66	15.6
	Catholic	8	1.9
	Protestant	7	1.7
Ethnic	Tigray	392	92.7
	Amhara	15	3.5
	Oromo	6	1.4
	Afar	9	2.1
	SNNP	1	0.2
Education	Illiterate	109	25.8
	Can read and write	18	4.3
	Primary school	107	25.3
	High school	102	24.1
	Diploma	40	9.5
	Degree and above	47	11.1
Occupation	Jobless	205	48.5
	Daily laborer	25	5.9
	Farmer	46	10.9
	Private business	49	11.6
	Prisoner	2	0.5
	Student	33	7.8
	House wife	23	5.4
	Civil servant	40	9.5
Family size	1-3	235	55.6
	4-8	165	39
	>8	23	5.4

**SNNP: Southern Nation Nationalities and Peoples' Region*

Sources of referral for first contact to psychiatry care and distribution of medically diagnosed mental illnesses

During their first contact to psychiatric care majority, 252(59.6%), of the participants sought treatment for their illness on the advice of their family members or relatives followed by former patients 119(28.1%). Out of the total study participants 107(25.3%) came with a referral letter. Nearly two-thirds, 268(63.4%), had follow up whereas, 155 (36.6) were new patients. This study indicated that the time intervals from onset of symptom to the first contact to psychiatric care were not normally distributed. The minimum and the maximum time interval to seek treatment was 0.1 and 1560 weeks respectively. Outliers with a very long delay were present. Therefore, median rather than mean duration was used. The median duration from problem onset to contact with modern psychiatric services was 52 weeks with inter-quartile range of 140 weeks. Time

interval to receive care was early for 247(58.4%) and delayed for 176(41.6%) of the study participants. Based on DSM-IV-TR diagnosis 182(43%) were diagnosed to have schizophrenia (Table 2).

Table 2: Distribution mental illness to psychiatric care among patients at Ayder comprehensive specialized hospital in 2017 (N=423)

Variables	Responses	Frequencies	Percentages
Who Suggested to care sought from	Patient him self	32	7.6
	Former patient	119	28.1
	Family	252	59.6
	Others*	20	4.7
Come with referral letter	No	316	74.7
	Yes	107	25.3
Past history of mental health care service	Yes	268	63.4
	No	155	36.4
Time interval to receive care	Early(<52 weeks)	247	58.4
	Delayed(>52 weeks)	176	41.6
Diagnosis based on DSM TR	Bipolar	46	10.9
	Other psychotic	79	18.7
	Schizophrenia	182	43
	MDD	85	20.1
	Epilepsy	6	1.4
	Anxiety	16	3.8
	Others*	9	2.1

**Other represents for who suggested was health professional, neighbor and work mate.*

**Other for diagnosis represents for sleep, somatoform disorders and PTSD.*

Pathways to psychiatric care

Out of the total study participants 302(71.4%) sought help from religious healer in the first time, 95(22.5%) sought help directly from psychiatric service, and 11(2.6%) from traditional healer (see figure 1 and table 3). The main source information to get help for their illness were from family /relative was 339(80.1%), patient himself 47(11%), and from former patient18 (4.2).The main problem presented to get help was because of aggressive behavior 181(42.8%), suicidal behavior 49(11.6%), functional impairment 95(22.5%), and worsening of their illness 87(20.6%) (Table 3).

Table 3: Distribution of first contact of care among patients at Ayder comprehensive specialized hospital in 2017 (N=423).

Variables	Responses	Frequencies	Percentages
Where did go to seek treatment	Religious leader	302	71.4
	Traditional healer	11	2.6
	General practitioner	15	3.5
	Psychiatric service	95	22.5
Who suggested care sought	Patient himself	47	11
	Family/relative	339	80.1
	Friends	10	2.4
	Neighbor	8	1.9
	Former patient	18	4.3
	Health professional	1	0.2
What was the main Problem?	Aggressive behavior	181	42
	Suicidal behavior	49	11.6
	Functional impaired	95	22.5
	Worsen his illness	87	20.6
What was the main treatment?	Religious/holy water	302	71.4
	Traditional medicine	11	2.6
	Medication	10	2.4
	Psychiatric service	95	22.5
	Other	5	12.2

**Other what was the main treatment represents referral*

In the second point of contact to care with non-psychiatric service out of the remaining 328 study participants 6(1.8%) sought help from religious healer, 55(16.8%) from traditional healer, 22(6.7%) from general practitioner, 3(0.9%) from community nurse whereas 242(73.8%) contacted modern psychiatric service. Their sources of information to get psychiatric service were: patient himself 14(4.3%), on the advice family/relative 214(65.2%), and former patient 70(21.3%). Regarding their problem presented to get help seeking was due to aggressive behavior 81(24.7%), suicide 27(8.2%), functional impairment 63(19.2%), and because of worsening their illness 147(44.8%).

In the third path way after contact with non-psychiatric service out of the remaining 86 study participants,76(88.4%) study participants sought help from psychiatric service,7(8.1%) from general practitioner and 3(3.5%) from traditional healer. Regarding their source of information to get service from family/relative were 44(51.1%), from former patient 31(36%) from health professional 7(8.1%), 2(2.3%) from neighbor and1 (1.2%) on the advice of work mate.

Depending on the main problem presented to seek help was due aggressive behavior 20(23.3%), because of suicide attempt 5(5.8%), functional impairment 12(14%), and because of worsening of their illness was 49(57%).

In the fourth pathway out of the remaining 10 study participants 10(100%) sought help from psychiatric service. Regarding their source of information to get service from family/relative were 2(20%), former patient 6(60%) and from health professional 2(20%). Depending on the main problem presented to seek help was due aggressive behavior 1(10%), suicidal behavior 1(10%) and because of worsening of their illness was 8(80%).

Perceived cause, severity, stigma and treatment option of mental illness and reasons for delay treatment seeking

Study participants responded reasons for delay in help seeking treatment 41(9.7%) was due to financial difficulties, 222(52.5%) did not know where to seek help, and 72(17%) were lack of accessibility of mental health facilities nearest their area. Concerning perceived causes of mental illness were spiritual possession, evil eye, sinful act, walks around garbage dumps, and stress accounted for 124(29.3%), 41(9.7%), 31(7.3%), 38(9%), and 129(30.5%) respectively. Regarding to problems faced in help-Seeking they responded because family member didn't recognize their severity of illness was 272(64.3%), family member felt ashamed 102(24.1%).

The majority 349(82.5%) of the study participants responded that mental illness is curable. Almost all, 343(97.4%), participants responded mental illness can be treated by modern treatment. Study participants who responded to what kind people mental illness is affects as angry and stressed were 244(57.5%)**,** and people with crisis 58(13.7%). Concerning perceived severity of mental illness 260(61.5%) responded very high severity whereas 16(3.8%) respond less severe. In terms of community perception for mental illness those who responded very highly shameful 86(20.1%), not as such shameful 107(25.3%) and not at all shameful were 102(24.1%) (Table 4).

Table 4: Distribution of patient's perception towards cause, severity, stigma and treatment option of mental illness and reasons for delay treatment seeking at ACSH in 2017 (N=423)

Variables	Responses	Frequencies	Percentages
Reasons for delay in help seeking	Distance	36	8.5

	Financial difficulties	41	9.7
	Didn't know where to seek help	222	52.5
	Lack of mental health service	72	17
	Not believed modern treatment	25	5.9
	Arrived in early time	27	6.4
Perceived causes of mental illnesses	Spiritual possession	124	29.3
	Evil eye	41	9.7
	Family history	23	5.4
	Sinful act	31	7.3
	Pathogen	5	1.2
	Walk around tomb, ,ash, forest	38	9
	I don't know	32	7.6
	Stress	129	30.5
Problems Faced in Help-Seeking	Family didn't recognize severity of the illness	272	64.2
	Family member felt shameful	102	24.1
	Couldn't convince medical staff	16	3.8
	Friends/relative discourage them	11	2.6
	Didn't face any problem	12	2.8
Is mental illnesses curable?	Yes	349	82.5
	I am not sure	4	0.9
	No	70	16.5
Which Treatment can be used to treat mental illness	Modern medicine	343	97.4
	holly water	6	1.7
	Traditional medicine	2	0.6
Which kind of people are affected by mental illnesses?	Angry and stressed	244	57.7
	People who use drug	44	10.4
	People with crisis	58	13.7
	Those who think a lot	56	13.2
	Others*	21	5
Perceived severity of mental illnesses	Very high severe	260	61.5
	High severe	96	22.1
	Severe	51	12.1
	Less sever	16	3.8
Perception for mental illness	Very high shameful	86	20.1
	Highly shameful	83	19.6
	Shameful	46	10.9
	Not as such shameful	107	25.3
	Not at all shameful	102	24.1

**Other represents for having evil eye and I don't know*

Distribution of physical illnesses/symptoms, substance use and suicidal behaviors

Out of total participants 145(34.8%) responded to have physical illness. Suicidal behaviors and substance use were high among participants. (Figure 2)

Factors Associated with Delayed Contact with Modern Psychiatric Care

Controlling other variables age category was statistically associated to delay treatment seeking. Participants with age 31-40 years were 2.8 times (AOR=2.8; 95%CI; 1.4-5.59) more likely to have delayed modern psychiatric service than 18-30 years age groups. Marital status was statically associated with delayed psychiatric treatment. Study participants who are single (AOR=2.52; 95%CI; 1.03, 6.22), and divorced (AOR=3.5; 95%CI; 1.25-9.81) were 2.5 and 3.5 times more likely to have delayed psychiatric treatment than married. Study participants who were jobless were 3.4 times (AOR= 3.38; 95%CI; 1.05-10.82) more likely to have delayed treatment psychiatric treatment than employed. Patients with DSM-IV-TR Diagnosis of other psychotic disorder seek early psychiatric treatment about 82% (AOR=0.18; 95%CI; 0.06-0.51) more than patients with bipolar disorder. Participants who came after seeking religious treatment were 3.7(AOR=3.73; 95%CI; 1.75-7.96) times more delayed those who came directly to the psychiatric service. Participants who perceived mental illness as shameful were 3.4 times (AOR=3.42; 95%CI; 1.19-9.83) times more likely to have delayed psychiatric treatment than those who responded not shameful. (Table 5)

Table 5: Multivariate analysis of factors associated with time interval delayed psychiatric treatment at Ayder comprehensive specialized hospital, July, 2017 (N=423)

Variables	Responses	Time		AOR	P value
		Early	Delayed		
Sex	Female	120(60.9)	77(39.1)	0.88(0.46,1.7)	0.709
	Male	127(56.8)	99(43.2)	1	
Age	18-30	143(65.9)	74(34.1)	1	
	31-40	65(50)	65(50)	2.78(1.38,5.59)**	0.004
	41-50	30(50.8)	29(41.2)	2.78(0.82,6.35)	
	51-60	9(52.9)	8(47.1)	1.44(0.32,6.87)	
Marital status	Married	73(70.2)	31(29.8)	1	
	Single	136(56.9)	103(43.1)	2.53(1.03,6.22)**	0.043
	Divorced	29(46)	34(54)	3.5(1.25,9.81)**	0.017
	Widowed	9(52.9)	8(47.1)	2.51(0.57,11.07)	
Occupation	Jobless	95(46.1)	111(53.9)	3.38(1.05,10.82)**	0.041
	Daily labor	18(75)	6(25)	1.87(0.35,9.05)	
	Farmer	29(63)	17(37)	1.54(0.35,6.77)	
	Private business	35(71.4)	14(28.6)	1.43(0.4,5.42)	
	Student	26(78.8)	7(21.2)	1.72(0.41,7.28)	
	Prisoner	1(50)	1(50)	10.52(0.24,45.25)	

	House wife	13(56.5)	10(43.5)	2.62(0.5,13.86)	
	Employee	30(75)	10(25)	1	
diagnosis based	Bipolar	29(63)	17(37)	1	
on DSM-IV-TR	Other psychotic d/o	66(83.5)	13(16.5)	0.18(0.06,0.51)**	0.001
	Schizophrenia	65(35.7)	117(64.3)	1.89 (0.83,4.31)	
	MDD	62(72.9)	23(27.1)	0.4(0.15,1.07)	
	Epilepsy	3(50)	3(50)	1.83(0.21,16.31)	
	Anxiety	14(87.5)	2(12.5)	0.31(0.05,2.08)	
	Other	8(88.9)	1(11.1)	0.29(0.02,3.46)	
where did you	Religious healer	154(51)	148(49)	3.73(1.75, 7.96) **	0.001
go to seek help	traditional healer	8(72.7)	3(27.3)	0.82(0.13,5.22)	
	General practitioner	12(80)	3(20)	1.1(0.15,7.91)	
	Psychiatrist	73(76.8)	22(23.2)	1	
Perception of	Very high shameful	46(54.1)	39(45.9)	0.93(0.39,2.18)	
mental illness	high shameful	46(55.4)	37(44.6)	0.93(0.39,2.18)	
	Shameful	19(41.3)	27(58.7)	3.42(1.19,9.83)**	0.023
	Not assuch shameful	71(66.4)	36(33.6)	0.75(0.35,1.58)	
	Not at all shameful	65(63.7)	37(36.3)	1	

Discussions

The DSM-IV-TR diagnosis of the study participants in this study indicated that schizophrenia accounts 43%, major depressive disorder 20.1%, other psychotic disorders 18.7%, bipolar disorders 10.9%, anxiety disorders 13.8% and epilepsy1.4%.

The pathway of the study participants revealed that 71.4% of study participants first sought help from religious sources and 2.6% from traditional healers. Less than a quarter, 22.5%, of them sought direct psychiatric treatment and 3.5% participants sought help from general health practitioner. This is in agreement with a study result from Nigeria which reported that most of the participants first sought treatments from religious and traditional healers (76.8%). Psychiatrists were the first contact for 18.5% of participants while 4.6% of participants received medical attention from GP (11). Similar results were also reported in another Nigerian study which indicated that many first sought treatments were from religious healers 48%, followed by traditional healers 20%, general/private hospital 20% and lastly, the psychiatric hospital 12% (12). A study result from India also showed that faith healers 39.5% followed by non-psychiatrist allopath care providers 29% were the most consulted sources of help. Direct entry to psychiatric treatment was reported by 13.5% of patients (6). However, it was against study results from

Ghana and Ethiopia. A Ghanaian study showed that patients that first sought care at the psychiatric hospital was 52.3 %; another 23.3 % sought from religious or traditional healing centers as their first contact; 21.5 % sought treatment from non-psychiatric general hospital as first point of contact; and 2.9 % sought help from community health nurse and other community medical practitioners as their first point of mental health care contact (16). In one of the Ethiopian study, over a third of the patients 35.2%, came directly to psychiatric treatment. Half of the patients sought traditional treatment from either a religious healer 30.2% or an herbalist 20.1% before they came to the (17). In another Ethiopian study it was shown that 41% directly consulted a psychiatrist, 30.9% sought help from holy water /church, 21.5%consulted doctors and 4.5% had initial contact with herbalist (10). The differences could be due to the study area and the sample size. Studies done in capital cities have larger proportions of patients using direct psychiatric treatment which could be associated with accessibility of the mental health services. Whereas, the sample size could also play a significant role as studies use different sample sizes ranging from (n=107 to 1044) (10, 16).

The prevalence of delayed psychiatric treatment was 176 (41.6%). It was lower than a study conducted to assess patterns of treatment seeking behavior for mental illnesses in Southwest Ethiopia in which the reported treatment delay was 65.l% (17). This might be due the current study was conducted seven years after the previous study and patients and their relatives might have a relatively better awareness about mental illness and treatment options. The median DUMI from illness onset to first carer contact and first psychiatric treatment contact were 4.0 and 52 weeks respectively. Different studies also indicated similar pathways taken to seek help by majority of PMI and similar median DUMI to the first psychiatric treatment (6, 11, 12, and 17). However, the median DUMI was less than a study from Pakistan (14) and greater than studies conducted in Iran, Bangladesh and Ethiopia (10, 13, and 15). The probable reason for the discrepancy could be the small sample sizes in the Pakistan (n=93) and Bangladesh (n=50) studies and the clinical diagnosis of the study population in which the Pakistani study employed only patients with psychosis. Other possible reason could be the socio-cultural differences among the study participants and different health care setups.

In this study majority 59.6% participants sought treatment for their illness were on the advice of their family /relative whereas 28.1% were advised by former patient and 7.6% of participants

managed to come by themselves, and 74.7% came without referral letter. Closely similar result was obtained from a study in Ethiopian capital where majority 69.6% of study participants attended to psychiatry on the advice of their family member, 9.4% advice of former patient and 87.6% was come without any referral (10). This is because most patients in Ethiopia get support and care by their family/relative. Similar results were also found from other studies in which reasons for accessing the mental health service were due to advise from friends and close relatives after their illness is worsen and deteriorating condition of the illness was 64%, (11, 12).

Comparing stigma associated with mental illness was found to affect the preferences of help sources among patients and caregiver. In this study about 24.1% of study participants responded that problems faced in help-seeking process were because family member felt ashamed of their illness. Study from Pakistan almost 25% of the mentally ill patients and an equal number of family members reported that they felt shy in discussing their illness (11). A study from Nigeria indicated that 20% of people with mental illness were influenced by stigma and discrimination from seeking specialist care (12). It is very crucial to take intervention on this aspect as stigma encountered as this might be significant barrier to help-seeking behavior of an individual there by resulted in delayed psychiatric care. This study revealed reasons for delay in help seeking was because of distance 8.5%, financial difficulties 9.7%, whereas, 52.5% reported didn't know where to seek help, 17% due to lack of availability of mental health facilities nearest to their area and 5.9% did not believe on modern treatment. Relating to problems faced in help-seeking process 64.3% were because family member didn't recognize the severity of illness, 3.8% couldn't convince medical staff of the severity of the illness and 2.6% discouraged by relatives/friends from seeking help. This study is similar with the study done in Pakistan when participants were inquired about the reasons for delay, around 29% reported financial difficulties, whereas 16% cited difficulty in reaching treatment centers. There were 40% patients and 9% of family and friends who did not feel the need for treatment. In around 23% cases, the patients and family did not have information regarding centers that offer treatment. Around 5% of the cases reported that health care providers did not take the illness seriously (11). This similarity might be due to lack of availability of mental service, lack of awareness and mental health literacy of psychiatric services and lack integration mental health with main stream health services in those study areas. In Nigeria also about 20% mentioned lack of available mental health services in the community as the reason for delays in seeking early treatment. The rest 80% indicated that poor

awareness about mental health services related to traditional beliefs regarding the causes of mental health, with health services not considered a priority for the treatment of such illnesses (14). This similarity might be due to lack of availability of mental health service, lack of awareness and mental health literacy of psychiatric services and lack integration mental health with main stream health services in those counties. Concerning perception and beliefs about the cause of mental illness in this study participants responded that the perceived causes of mental illness were spiritual possession 124(29.3%), evil eye41(9.7%), sinful act31(7.3%), I do not know32(7.6%), and walks around garbage dumps accounting 38(9%)the . In the Southwest Ethiopian, the most common explanations given for the cause of the mental illness were spiritual possession 198 (51.6%) and evil eye 61 (15.9%), whereas 73 (19.0%) of the respondents said they did not know the cause of mental illnesses (8). The study done in Nigeria showed 20% believed that mental health issues were caused by charms from an enemy or supernatural powers. This similarity might be due to lack of awareness towards cause of mental illness in those study area.

Study participants who came after seeking religious treatment were 3.8 times more likely to delay for psychiatry treatment than those who came direct to psychiatric treatment. This might be because the initial contribution healers might cause to prolong pathway to psychiatric care and possible obstacle to early detection, identification and intervention (6, 15, 18, and 20). Participants who were single and divorced were 2.5 and 3.5 times more likely to delay compared to those who are married. However, it reported that participants who chose to use psychiatric services as first portal of care were more likely to unmarried. This inconsistency might be because lack of social support. Study participants who were jobless were 3.4 times more likely to be delayed treatment compared to those employed participants. In this study the age group 31-40 years had significant statistical association with delayed treatment seeking behavior compared with those 18-30 age group. In studies conducted in Ethiopia at Amanuel mental specialized hospital, unemployment was found to be associated with delayed treatment seeking behavior but there were no significant association between the duration of delay on path way care with age group and marital status (4). This might be due to lack of economic support to get modern treatment that necessitate long distance travel because of inaccessibility. Regarding patient diagnosis and treatment seeking behavior, patients with diagnosis of other psychotic disorder sought psychiatry treatment 80% earlier than bipolar patients. The probable reason could be the

clinical presentation of the illnesses in which patients of this category are affected by more psychotic phenomena that results in a relatively overt behavioral disturbance than patient with bipolar disorder.

Conclusions

The study result showed a significant delay in seeking modern psychiatric treatment. Religious healers were the first place where help was sought for mental illness. Most of the respondents described that mental illnesses were caused by supernatural causes. First contact with religious sources of help, unmarried marital status, jobless/unemployed, being in age group of 31-40 years old, and patient diagnosis of other psychotic disorders were significantly associated with delayed psychiatric treatment. Therefore, it is vital to provide interventions on factors that play great role to delay psychiatric treatment.

Ethical Considerations

Ethical clearance was obtained from College of medicine and health science's Institutional Research Review Board (IRB) of Jimma University. Written informed consent was obtained from study participants to confirm willingness for participation after explaining the objective of the study. The information provided by each respondent was kept confidential.

Data availability statement

Data are available upon reasonable request.

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Author Contributions

ST designed the study, involved in the data collection, analysis and write up. HK and HH involved design, data analysis, and drafted manuscript. MA participated in the design of the study, analysis of the data and critically reviewed the manuscript. All authors read and approved the final manuscript.

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Competing Interest

The authors declared no conflict of interest.

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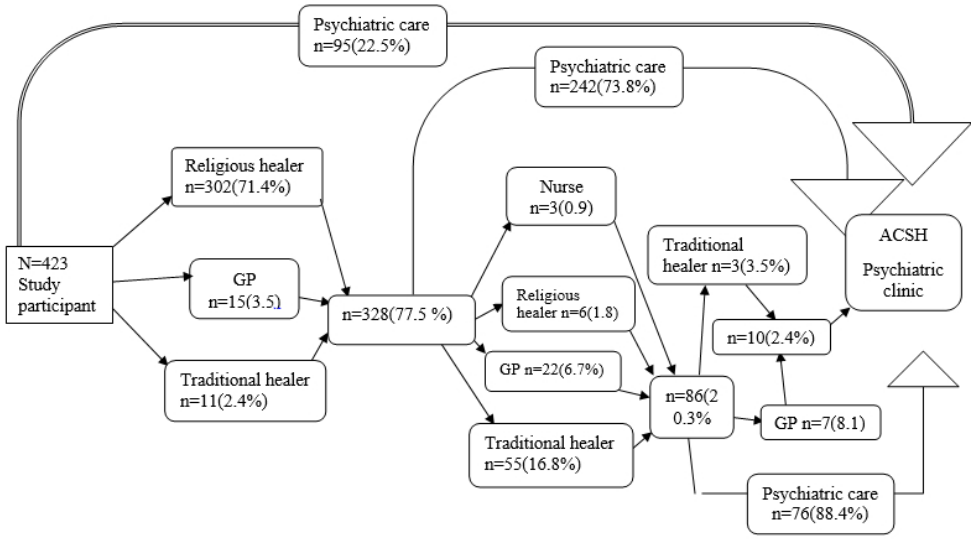
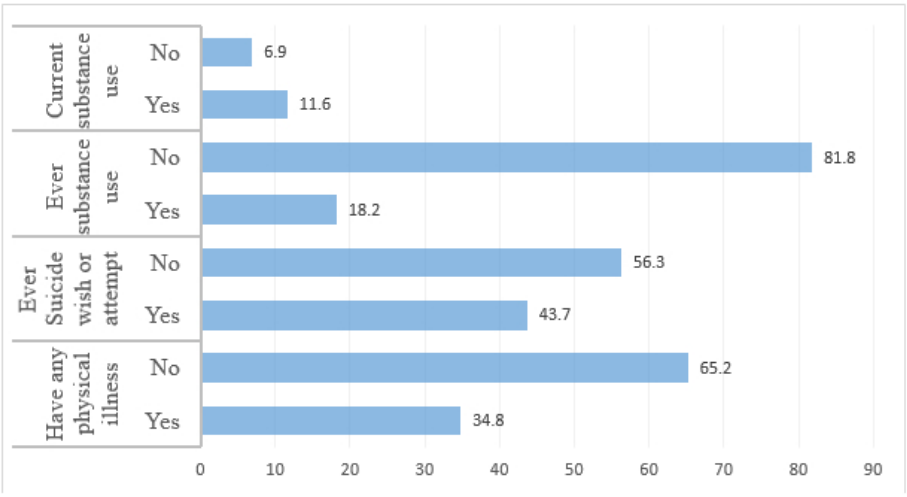


Figure 1: Pictorial representation of pathways to psychiatric treatment among 423 patients to arrive at ACSH psychiatry clinic



Note: **Physical illnesses/symptoms include**: *diabetic, hypertension, HIV, genito-urinary symptoms, headache, fever, weight loss, cough, chest pain, abdominal pain and joint pain*
Substances include: *alcohol, tobacco, khat, cannabis*,

Figure 2: Distribution of physical illnesses/symptoms, substance use and suicidal behaviors

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2
Objectives	3	State specific objectives, including any prespecified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5, 6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	5, 6
Bias	9	Describe any efforts to address potential sources of bias	*5,6*
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	6
		(*b*) Describe any methods used to examine subgroups and interactions	6
		(*c*) Explain how missing data were addressed	NA
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	NA
		(*e*) Describe any sensitivity analyses	NA
Results			NA

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	6
		(b) Give reasons for non-participation at each stage	NA
		(c) Consider use of a flow diagram	NA
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6,7
		(b) Indicate number of participants with missing data for each variable of interest	NA
Outcome data	15*	Report numbers of outcome events or summary measures	NA
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	13, 14
		(*b*) Report category boundaries when continuous variables were categorized	NA
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	NA
Discussion			
Key results	18	Summarise key results with reference to study objectives	18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	2
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14-18
Generalisability	21	Discuss the generalisability (external validity) of the study results	18
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	19

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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Keywords:	Pathway, Psychiatric care, delayed treatment, mental illness, help-seeking

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Pathways to psychiatric care and factors associated with delayed help-seeking among patients with mental illness in Northern Ethiopia: A cross sectional study

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Abstract

Objective: This study aimed to assess pathways to psychiatric care and factors associated with delayed help-seeking among patients with mental illness in northern Ethiopia using the world health organization pathway study encounter form.

Design: Cross sectional study design was used

Setting: Data was collected using face to face interview from patients with various diagnosis of mental illness attending outpatient follow up treatment at Ayder Comprehensive Specialized hospital in Mekelle City, Tigray, Ethiopia

Participants: Participants who came for follow up consecutively during the study period were included in the study

Outcome measures: Pathways to psychiatric care, delayed psychiatric treatment and factors affecting delayed psychiatric treatment

Results: The median duration from problem onset to contact with first care provider was 4 weeks, whereas to contact with modern psychiatric services was 52.0 weeks. Study participants who were single (AOR=2.91; 95%CI; 1.19, 7.11), divorced (AOR=3.73; 95%CI; 1.33, 10.49) and participants who perceive mental illness as shameful (AOR=3.29; 95%CI; 1.15, 9.41) had delayed treatment seeking behavior. Whereas, participants with no history of substance use (AOR=0.43; 95% CI; 0.20, 0.92) were less likely to have delayed treatment seeking behavior.

Conclusions: There is significant delay in seeking modern psychiatric treatment. Religious healers were the first place where help was sought for mental illness in this population. Most of the respondents described that mental illnesses were caused by supernatural causes. Stigma and lack of awareness about where treatment is available were barrier in seeking appropriate care.

Key words: pathway, psychiatric care, delayed treatment, mental illness, help-seeking

Word count: 4021

Strength and limitation of this study

- This is the first pathway study in northern part of Ethiopia with 100% response rate maintained.
- This study was conducted at tertiary hospital in patients with severe mental illness.

Therefore, the results of this study might not be generalized for those who do not reach mental health services and for those with common mental disorders.

- Recall bias regarding the onset of illness could lead to over and under reporting of the Duration of untreated mental illnesses.

Background

Mental illness is associated with high levels of chronicity, comorbidity and premature mortality (1, 2). This is due to the onset of first episode mental illnesses are usually started at early ages(3) but most people with the illnesses do not get early psychiatric treatment(4). Studies indicated that traditional and faith healers are the first source of help by majority of patients(4, 5). The reason is related with patients' knowledge about the causes and treatments of the illness and their awareness of the available services (6). These factors lead to prolonged duration of untreated mental illness (DUMI) with its adverse consequences such as poorer response to: psychotropic medications, symptoms control, and long term prognosis with more relapses. As a result, people with mental illness (PMI) develop poor quality of life and compromised social, personal and occupational functioning. Empirical studies have shown that the DUMI averages 1 to 2 years. The average DUMI is even more in developing nations. The reasons for which are yet to be explored from pathways of care service studies(7). Therefore, reducing DUMI has become the primary aim of modern psychiatric services for patients with mental illness(8). This can be achieved by identifying the patients' pathways to different help sources and factors that play role in delaying psychiatry treatments(6). Pathway to care is a comprehensive and systematized clarification of sources of care used by patients before seeking help from mental health professionals. It is a rapid and reasonable method of studying help seeking behavior of mentally ill patients and their family(9).

Descriptive studies from different countries indicate that a large number of patient do not present themselves directly to mental health professionals. They adopt path with traverses through many agencies(10). Study results indicated mixed findings regarding first source of help by PMI. While it was reported that faith healers and non-psychiatrist allopath care provider were the first to be consulted(6, 11, 12), in another studies it was psychiatrists followed by traditional healers and general practitioners (13-16). Results from two previous Ethiopian studies also presented

different findings. In one of the study conducted in the capital city, Addis Ababa, in specialized mental health Hospital, it was shown that 41% of patients with new episodes of neuropsychiatric disorders directly consulted a psychiatrist. A proportion 30.9% of patients had sought care from priests, holy water or church(10). In contrast, the second study, which was conducted in Southwest Ethiopia in a psychiatry clinic under a general Hospital setup, reported that half of the patients sought traditional treatment from either a religious healer 30.2% or an herbalist 20.1% before they came to the hospital for psychiatric care(17).

The median DUI is affected by the paths taken by patients to arrive to psychiatry care. A Study done in different countries revealed that people with mental disorder seek treatment after 6 months and above, from the onset of their illness(6, 18). In Asian based studies where most of the initial sources of help reported were traditional or religious care providers, the median duration untreated illness greatly varies. In a study from Iran, duration of untreated psychosis and pathway to care in patients with first-episode psychosis showed that, the median duration of untreated psychosis (DUP) was 11 weeks with the mean of 52 weeks whereas, it was 64 weeks and 10.5 weeks from Pakistan and Bangladesh study results respectively(13-15). In a Nigerian study, the mean and median DUP were 72.80±75.7 and 52 weeks, respectively (11). In Ethiopian studies, the median delay between onset of illness and arrival at the psychiatric hospital was 38 weeks(10)while median duration of symptoms of mental illness before contact to modern mental health service was 52.1 weeks(17). The initial contribution healers might cause to prolong pathway to psychiatric care and possible obstacle to early detection, identification and intervention (6, 15, 18).

It was indicated that subjects who chose to use psychiatric services as first portal of care were more likely to be younger in age, unmarried, unemployed and better educated(6, 10, 17). Patients who reported financial difficulties (14), diagnosed with Schizophrenia and substance use disorders initially sought psychiatric care from non-psychiatric treatment facility or centers before seeking care at the public psychiatric hospital (16). The stigma associated with the illness and the knowledge and beliefs about the cause of mental illness was found to affect the preferences of help sources among patients and caregivers(12, 14).

However, in the northern part of Ethiopia, no scientific data available indicating pathways to psychiatry care service. Therefore, this study was conducted with the aim to assess pathway to

psychiatric care service and associated factors with delayed help seeking among people with mental illness. This kind of study is very crucial to identify and intervene contributing factors for delayed psychiatric care for better treatment prognosis and outcome.

Methods

Study design and setting

Hospital based cross sectional study design was used. It was conducted at Ayder comprehensive specialized Hospital, Mekelle city, Ethiopia from May to June, 2017. Ayder comprehensive specialized hospital commenced rendering its referral and non-referral services in 2008. The hospital provides services to eight million population in its catchment areas of the Tigray, Afar and northeastern parts of the Amhara regional states. It provides inpatient and outpatient services for all age groups. The psychiatry unit has 18 beds and approximately 850 patients receive outpatient services every month. Psychiatry is the only clinical department which receives patient without referral and with referrals from all direction of the catchment area.

Participant selection

Sample size was determined using single population proportion formula assuming that 50% of the participants will seek early treatment at 95%CI and 5% margin error. Considering 10% non-response rate a total of 423 adult patients with mental illnesses were selected. Consecutive sampling method was used to select the study participants until the required sample size is achieved.

Data collection and Measurement

The data was collected using structured interviewer administered questionnaires prepared in local languages (Amharic and Tigre language). Pathways to psychiatric care was assessed using World Health Organization (WHO) encounter form. This questionnaire documents the care from whom help is initially sought (the first pathway contact), and then the next carer (second pathway contact), third carer (third pathway) and finally a fourth carer (Fourth pathway) contact (19). Treatment delay was measured using median time interval in weeks from problem onset to contact with psychiatric services. To sort significant delay for seeking mental health treatment, 52.1 weeks median duration was taken as a reference point from a study conducted in Southwest

Ethiopia (17). Therefore, individuals who sought mental health treatment from the psychiatric hospital after 52.1 weeks from the first onset of illness were categorized as delayed and before 52.1 weeks as early treatment seeking for psychiatric care. Data was collected by eight trained BSc Psychiatry nurses using face to face interviews.

Data Processing and Analysis

The collected data was coded after checking their completeness then double entered to Epidata Version 3.1.3, cleaned and exported to SPSS version20.0 for further analysis. Descriptive statistics was computed for continuous variables. For categorical variables, bivariate analyses were performed to nominate candidate variables for multivariate logistic regression analysis. Thus, those variables with p value of 0.25 and below was fitted to multivariate logistic regression analysis model to assess variables that have association with the outcome variable and with 95% CI to control for confounding. Statistical significance was declared at p value less than 0.05.

Patient and public involvement

No patient involved.

Results

Socio-demographic characteristics of study participants

Data was collected from 423 study participants with 100% response rate. Out of the total study participants (53.4%) were males. The mean age was 32.48 (SD ±9.33) years with minimum and maximum age of 18 and 60 years respectively. About half, 48.5%, of the participants were jobless and a quarter, 25.8%, of them were illiterate (table 1).

Table 1. Socio-demographic characteristics of study participants at Ayder compressive specialized Hospital.

Variables	Responses	Frequencies	Percentages
Residence	Rural	141	33.3
	Urban	282	66.7
Age	18-30	217	51.3
	31-40	130	30.7
	41-50	59	13.9
	51-60	17	4.0
Sex	Male	226	53.4
	Female	197	46.6
Marital status	Married	104	24.6
	Single	239	56.5

	Divorced	63	14.9
	Widowed	17	4.0
Religion	Orthodox	342	80.9
	Muslim	66	15.6
	Catholic	8	1.9
	Protestant	7	1.7
Ethnic	Tigray	392	92.7
	Amhara	15	3.5
	Oromo	6	1.4
	Afar	9	2.1
	SNNP	1	0.2
Education	Illiterate	109	25.8
	Can read and write	18	4.3
	Primary school	107	25.3
	High school	102	24.1
	Diploma	40	9.5
	Degree and above	47	11.1
Occupation	Jobless	205	48.5
	Daily laborer	25	5.9
	Farmer	46	10.9
	Private business	49	11.6
	Prisoner	2	0.5
	Student	33	7.8
	House wife	23	5.4
	Civil servant	40	9.5
Family size	1-3	235	55.6
	4-8	165	39
	>8	23	5.4

**SNNP: Southern Nation Nationalities and Peoples' Region*

Sources of referral for first contact to psychiatry care and distribution of medically diagnosed mental illnesses

During their first contact to psychiatric care majority, 252(59.6%), of the participants sought treatment for their illness on the advice of their family members or relatives followed by former patients 119(28.1%). Out of the total study participants 107(25.3%) came with a referral letter. Nearly two-thirds, 268(63.4%), had follow up whereas, 155 (36.6) were new patients. This study indicated that the time intervals from onset of symptom to the first contact to psychiatric care were not normally distributed. The minimum and the maximum time interval to seek treatment was 0.1 and 1560 weeks respectively. Outliers with a very long delay were present. Therefore, median rather than mean duration was used. The median duration from problem onset to contact with modern psychiatric services was 52 weeks with inter-quartile range of 140 weeks. Time

interval to receive care was early for 247(58.4%) and delayed for 176(41.6%) of the study participants. Based on DSM-IV-TR diagnosis 182(43%) were diagnosed to have schizophrenia (Table 2).

Table 2: Distribution mental illness to psychiatric care among patients at Ayder comprehensive specialized hospital in 2017 (N=423)

Variables	Responses	Frequencies	Percentages
Who Suggested to care sought from	Patient him self	32	7.6
	Former patient	119	28.1
	Family	252	59.6
	Others*	20	4.7
Come with referral letter	No	316	74.7
	Yes	107	25.3
Past history of mental health care service	Yes	268	63.4
	No	155	36.4
Time interval to receive care	Early(<52 weeks)	247	58.4
	Delayed(>52 weeks)	176	41.6
Diagnosis based on DSM TR	Bipolar	46	10.9
	Other psychotic	79	18.7
	Schizophrenia	182	43
	MDD	85	20.1
	Epilepsy	6	1.4
	Anxiety	16	3.8
	Others*	9	2.1

**Other represents for who suggested was health professional, neighbor and work mate.*

**Other for diagnosis represents for sleep, somatoform disorders and PTSD.*

Pathways to psychiatric care

Out of the total study participants 302(71.4%) sought help from religious healer in the first time, 95(22.5%) sought help directly from psychiatric service, and 11(2.6%) from traditional healer (see figure 1 and table 3). The main source information to get help for their illness were from family /relative was 339(80.1%), patient himself 47(11%), and from former patient18 (4.2).The main problem presented to get help was because of aggressive behavior 181(42.8%), suicidal behavior 49(11.6%), functional impairment 95(22.5%), and worsening of their illness 87(20.6%) (Table 3).

Table 3: Distribution of first contact of care among patients at Ayder comprehensive specialized hospital in 2017 (N=423).

Variables	Responses	Frequencies	Percentages
Where did go to seek treatment	Religious leader	302	71.4
	Traditional healer	11	2.6
	General practitioner	15	3.5
	Psychiatric service	95	22.5
Who suggested care sought	Patient himself	47	11
	Family/relative	339	80.1
	Friends	10	2.4
	Neighbor	8	1.9
	Former patient	18	4.3
	Health professional	1	0.2
What was the main Problem?	Aggressive behavior	181	42
	Suicidal behavior	49	11.6
	Functional impaired	95	22.5
	Worsen his illness	87	20.6
What was the main treatment?	Religious/holy water	302	71.4
	Traditional medicine	11	2.6
	Medication	10	2.4
	Psychiatric service	95	22.5
	Other	5	12.2

**Other what was the main treatment represents referral*

In the second point of contact to care with non-psychiatric service out of the remaining 328 study participants 6(1.8%) sought help from religious healer, 55(16.8%) from traditional healer, 22(6.7%) from general practitioner, 3(0.9%) from community nurse whereas 242(73.8%) contacted modern psychiatric service. Their sources of information to get psychiatric service were: patient himself 14(4.3%), on the advice family/relative 214(65.2%), and former patient 70(21.3%). Regarding their problem presented to get help seeking was due to aggressive behavior 81(24.7%), suicide 27(8.2%), functional impairment 63(19.2%), and because of worsening their illness 147(44.8%).

In the third path way after contact with non-psychiatric service out of the remaining 86 study participants,76(88.4%) study participants sought help from psychiatric service,7(8.1%) from general practitioner and 3(3.5%) from traditional healer. Regarding their source of information to get service from family/relative were 44(51.1%), from former patient 31(36%) from health professional 7(8.1%), 2(2.3%) from neighbor and1 (1.2%) on the advice of work mate.

Depending on the main problem presented to seek help was due aggressive behavior 20(23.3%), because of suicide attempt 5(5.8%), functional impairment 12(14%), and because of worsening of their illness was 49(57%).

In the fourth pathway out of the remaining 10 study participants 10(100%) sought help from psychiatric service. Regarding their source of information to get service from family/relative were 2(20%), former patient 6(60%) and from health professional 2(20%). Depending on the main problem presented to seek help was due aggressive behavior 1(10%), suicidal behavior 1(10%) and because of worsening of their illness was 8(80%).

Perceived cause, severity, stigma and treatment option of mental illness and reasons for delay treatment seeking

Study participants responded reasons for delay in help seeking treatment 41(9.7%) was due to financial difficulties, 222(52.5%) did not know where to seek help which could be due to being new to the environment for people with mental illness coming from Arab countries and internally displaced from different regions of the country due to inter communal conflict, and 72(17%) were lack of accessibility of mental health facilities nearest their area. Concerning perceived causes of mental illness were spiritual possession, evil eye, sinful act, walks around garbage dumps, and stress accounted for 124(29.3%), 41(9.7%), 31(7.3%), 38(9%), and 129(30.5%) respectively. Regarding to problems faced in help-Seeking they responded because family member didn't recognize their severity of illness was 272(64.3%), family member felt ashamed 102(24.1%).

The majority 349(82.5%) of the study participants responded that mental illness is curable. Almost all, 343(97.4%), participants responded mental illness can be treated by modern treatment. Study participants who responded to what kind people mental illness is affects as angry and stressed were 244(57.5%)**,** and people with crisis 58(13.7%). Concerning perceived severity of mental illness 260(61.5%) responded very high severity whereas 16(3.8%) respond less severe. In terms of community perception for mental illness those who responded very highly shameful 86(20.1%), not as such shameful 107(25.3%) and not at all shameful were 102(24.1%) (Table 4).

Table 4: Distribution of patient's perception towards cause, severity, stigma and treatment option

of mental illness and reasons for delay treatment seeking at ACSH in 2017 (N=423)

Variables	Responses	Frequencies	Percentages
Reasons for delay in help seeking	Distance	36	8.5
	Financial difficulties	41	9.7
	Didn't know where to seek help	222	52.5
	Lack of mental health service	72	17
	Not believed modern treatment	25	5.9
	Arrived in early time	27	6.4
Perceived causes of mental illnesses	Spiritual possession	124	29.3
	Evil eye	41	9.7
	Family history	23	5.4
	Sinful act	31	7.3
	Pathogen	5	1.2
	Walk around tomb, ,ash, forest	38	9
	I don't know	32	7.6
	Stress	129	30.5
Problems Faced in Help-Seeking	Family didn't recognize severity of the illness	272	64.2
	Family member felt shameful	102	24.1
	Couldn't convince medical staff	16	3.8
	Friends/relative discourage them	11	2.6
	Didn't face any problem	12	2.8
Is mental illnesses curable?	Yes	349	82.5
	I am not sure	4	0.9
	No	70	16.5
Which Treatment can be used to treat mental illness	Modern medicine	343	97.4
	holly water	6	1.7
	Traditional medicine	2	0.6
Which kind of people are affected by mental illnesses?	Angry and stressed	244	57.7
	People who use drug	44	10.4
	People with crisis	58	13.7
	Those who think a lot	56	13.2
	Others*	21	5
Perceived severity of mental illnesses	Very high severe	260	61.5
	High severe	96	22.1
	Severe	51	12.1
	Less sever	16	3.8
Perception for mental illness	Very high shameful	86	20.1
	Highly shameful	83	19.6
	Shameful	46	10.9
	Not as such shameful	107	25.3
	Not at all shameful	102	24.1

**Other represents for having evil eye and I don't know*

Distribution of physical illnesses/symptoms, substance use and suicidal behaviors

Out of total participants 145(34.8%) responded to have physical illness. Suicidal behaviors and substance use were high among participants. (Figure 2)

Factors Associated with Delayed Contact with Modern Psychiatric Care

Controlling other variables age category was statistically associated to delay treatment seeking. Participants with age 31-40 years were 2.8 times (AOR=2.8; 95%CI; 1.4-5.59) more likely to have delayed modern psychiatric service than 18-30 years age groups. Marital status was statically associated with delayed psychiatric treatment. Study participants who are single (AOR=2.52; 95%CI; 1.03, 6.22), and divorced (AOR=3.5; 95%CI; 1.25-9.81) were 2.5 and 3.5 times more likely to have delayed psychiatric treatment than married. Study participants who were jobless were 3.4 times (AOR= 3.38; 95%CI; 1.05-10.82) more likely to have delayed treatment psychiatric treatment than employed. Patients with DSM-IV-TR Diagnosis of other psychotic disorder seek early psychiatric treatment about 82% (AOR=0.18; 95%CI; 0.06-0.51) more than patients with bipolar disorder. Participants who came after seeking religious treatment were 3.7(AOR=3.73; 95%CI; 1.75-7.96) times more delayed those who came directly to the psychiatric service. Participants who perceived mental illness as shameful were 3.4 times (AOR=3.42; 95%CI; 1.19-9.83) times more likely to have delayed psychiatric treatment than those who responded not shameful. (Table 5)

Table 5: Multivariate analysis of factors associated with time interval delayed psychiatric treatment at Ayder comprehensive specialized hospital, July, 2017 (N=423)

Variables	Responses	Time		AOR	P value
		Early	Delayed		
Sex	Female	120(60.9)	77(39.1)	0.88(0.46,1.7)	0.709
	Male	127(56.8)	99(43.2)	1	
Age	18-30	143(65.9)	74(34.1)	1	
	31-40	65(50)	65(50)	2.78(1.38,5.59)**	0.004
	41-50	30(50.8)	29(41.2)	2.78(0.82,6.35)	
	51-60	9(52.9)	8(47.1)	1.44(0.32,6.87)	
Marital status	Married	73(70.2)	31(29.8)	1	
	Single	136(56.9)	103(43.1)	2.53(1.03,6.22)**	0.043
	Divorced	29(46)	34(54)	3.5(1.25,9.81)**	0.017
	Widowed	9(52.9)	8(47.1)	2.51(0.57,11.07)	
Occupation	Jobless	95(46.1)	111(53.9)	3.38(1.05,10.82)**	0.041
	Daily labor	18(75)	6(25)	1.87(0.35,9.05)	

	Farmer	29(63)	17(37)	1.54(0.35,6.77)	
	Private business	35(71.4)	14(28.6)	1.43(0.4,5.42)	
	Student	26(78.8)	7(21.2)	1.72(0.41,7.28)	
	Prisoner	1(50)	1(50)	10.52(0.24,45.25)	
	House wife	13(56.5)	10(43.5)	2.62(0.5,13.86)	
	Employee	30(75)	10(25)	1	
diagnosis based	Bipolar	29(63)	17(37)	1	
on DSM-IV-TR	Other psychotic d/o	66(83.5)	13(16.5)	0.18(0.06,0.51)**	0.001
	Schizophrenia	65(35.7)	117(64.3)	1.89 (0.83,4.31)	
	MDD	62(72.9)	23(27.1)	0.4(0.15,1.07)	
	Epilepsy	3(50)	3(50)	1.83(0.21,16.31)	
	Anxiety	14(87.5)	2(12.5)	0.31(0.05,2.08)	
	Other	8(88.9)	1(11.1)	0.29(0.02,3.46)	
where did you	Religious healer	154(51)	148(49)	3.73(1.75, 7.96) **	0.001
go to seek help	traditional healer	8(72.7)	3(27.3)	0.82(0.13,5.22)	
	General practitioner	12(80)	3(20)	1.1(0.15,7.91)	
	Psychiatrist	73(76.8)	22(23.2)	1	
Perception of	Very high shameful	46(54.1)	39(45.9)	0.93(0.39,2.18)	
mental illness	high shameful	46(55.4)	37(44.6)	0.93(0.39,2.18)	
	Shameful	19(41.3)	27(58.7)	3.42(1.19,9.83)**	0.023
	Not assuch shameful	71(66.4)	36(33.6)	0.75(0.35,1.58)	
	Not at all shameful	65(63.7)	37(36.3)	1	

Discussions

The DSM-IV-TR diagnosis of the study participants in this study indicated that schizophrenia accounts 43%, major depressive disorder 20.1%, other psychotic disorders 18.7%, bipolar disorders 10.9%, anxiety disorders 13.8% and epilepsy1.4%.

The pathway of the study participants revealed that 71.4% of study participants first sought help from religious sources and 2.6% from traditional healers. Less than a quarter, 22.5%, of them sought direct psychiatric treatment and 3.5% participants sought help from general health practitioner. This is in agreement with a study result from Nigeria which reported that most of the participants first sought treatments from religious and traditional healers (76.8%). Psychiatrists were the first contact for 18.5% of participants while 4.6% of participants received medical attention from GP (11). Similar results were also reported in another Nigerian study which indicated that many first sought treatments were from religious healers 48%, followed by traditional healers 20%, general/private hospital 20% and lastly, the psychiatric hospital 12% (12). A study result from India also showed that faith healers 39.5% followed by non-psychiatrist

allopath care providers 29% were the most consulted sources of help. Direct entry to psychiatric treatment was reported by 13.5% of patients (6). However, it was against study results from Ghana and Ethiopia. A Ghanaian study showed that patients that first sought care at the psychiatric hospital was 52.3 %; another 23.3 % sought from religious or traditional healing centers as their first contact; 21.5 % sought treatment from non-psychiatric general hospital as first point of contact; and 2.9 % sought help from community health nurse and other community medical practitioners as their first point of mental health care contact (16). In one of the Ethiopian study, over a third of the patients 35.2%, came directly to psychiatric treatment. Half of the patients sought traditional treatment from either a religious healer 30.2% or an herbalist 20.1% before they came to the (17). In another Ethiopian study it was shown that 41% directly consulted a psychiatrist, 30.9% sought help from holy water /church, 21.5%consulted doctors and 4.5% had initial contact with herbalist (10). The differences could be due to the study area and the sample size. Studies done in capital cities have larger proportions of patients using direct psychiatric treatment which could be associated with accessibility of the mental health services and with better literacy. Whereas, the sample size could also play a significant role as studies use different sample sizes ranging from (n=107 to 1044) (10, 16).

The prevalence of delayed psychiatric treatment was 176 (41.6%). It was lower than a study conducted to assess patterns of treatment seeking behavior for mental illnesses in Southwest Ethiopia in which the reported treatment delay was 65.1% (17). This might be due the current study was conducted seven years after the previous study and patients and their relatives might have a relatively better awareness about mental illness and treatment options. The median DUMI from illness onset to first carer contact and first psychiatric treatment contact were 4.0 and 52 weeks respectively. Different studies also indicated similar pathways taken to seek help by majority of PMI and similar median DUMI to the first psychiatric treatment (6, 11, 12, and 17). However, the median DUMI was less than a study from Pakistan (14) and greater than studies conducted in Iran, Bangladesh and Ethiopia (10, 13, and 15). The probable reason for the discrepancy could be the small sample sizes in the Pakistan (n=93) and Bangladesh (n=50) studies and the clinical diagnosis of the study population in which the Pakistani study employed only patients with psychosis. Other possible reason could be the socio-cultural differences among the study participants and different health care setups.

In this study majority 59.6% participants sought treatment for their illness were on the advice of their family /relative whereas 28.1% were advised by former patient and 7.6% of participants managed to come by themselves, and 74.7% came without referral letter. Closely similar result was obtained from a study in Ethiopian capital where majority 69.6% of study participants attended to psychiatry on the advice of their family member, 9.4% advice of former patient and 87.6% was come without any referral (10). This is because most patients in Ethiopia get support and care by their family/relative. Similar results were also found from other studies in which reasons for accessing the mental health service were due to advise from friends and close relatives after their illness is worsen and deteriorating condition of the illness was 64%, (11, 12). This is a crucial area of emphasis and attention should be given for peer support of people with mental illnesses. Service users and researchers in developed countries have strongly advocated for access to peer support for people with SMI (20) and went further to implementation influences of the peer support network interventions (21). A systematic review conducted in low and middle income countries also shown positive results of peer-delivered interventions (22) . Therefore, it is vital to utilize these resources as an intervention ingredient to hasten early psychiatry treatment of People with mental illnesses.

Comparing stigma associated with mental illness was found to affect the preferences of help sources among patients and caregiver. In this study about 24.1% of study participants responded that problems faced in help-seeking process were because family member felt ashamed of their illness. Study from Pakistan almost 25% of the mentally ill patients and an equal number of family members reported that they felt shy in discussing their illness (11). A study from Nigeria indicated that 20% of people with mental illness were influenced by stigma and discrimination from seeking specialist care (12). It is very crucial to take intervention on this aspect as stigma encountered as this might be significant barrier to help-seeking behavior of an individual there by resulted in delayed psychiatric care. This study revealed reasons for delay in help seeking was because of distance 8.5%, financial difficulties 9.7%, whereas, 52.5% reported didn't know where to seek help, 17% due to lack of availability of mental health facilities nearest to their area and 5.9% did not believe on modern treatment. Relating to problems faced in help-seeking process 64.3% were because family member didn't recognize the severity of illness, 3.8% couldn't convince medical staff of the severity of the illness and 2.6% discouraged by relatives/friends from seeking help. This study is similar with the study done in Pakistan when

participants were inquired about the reasons for delay, around 29% reported financial difficulties, whereas 16% cited difficulty in reaching treatment centers. There were 40% patients and 9% of family and friends who did not feel the need for treatment. In around 23% cases, the patients and family did not have information regarding centers that offer treatment. Around 5% of the cases reported that health care providers did not take the illness seriously (11). This similarity might be due to lack of availability of mental service, lack of awareness and mental health literacy of psychiatric services and lack integration mental health with main stream health services in those study areas. In Nigeria also about 20% mentioned lack of available mental health services in the community as the reason for delays in seeking early treatment. The rest 80% indicated that poor awareness about mental health services related to traditional beliefs regarding the causes of mental health, with health services not considered a priority for the treatment of such illnesses (14). This similarity might be due to lack of availability of mental health service, lack of awareness and mental health literacy of psychiatric services and lack integration mental health with main stream health services in those counties. Concerning perception and beliefs about the cause of mental illness in this study participants responded that the perceived causes of mental illness were spiritual possession 124(29.3%), evil eye41(9.7%), sinful act31(7.3%), I do not know32(7.6%), and walks around garbage dumps accounting 38(9%)the . In the Southwest Ethiopian, the most common explanations given for the cause of the mental illness were spiritual possession 198 (51.6%) and evil eye 61 (15.9%), whereas 73 (19.0%) of the respondents said they did not know the cause of mental illnesses (8). The study done in Nigeria showed 20% believed that mental health issues were caused by charms from an enemy or supernatural powers. This similarity might be due to lack of awareness towards cause of mental illness in those study area.

Study participants who came after seeking religious treatment were 3.8 times more likely to delay for psychiatry treatment than those who came direct to psychiatric treatment. This might be because the initial contribution healers might cause to prolong pathway to psychiatric care and possible obstacle to early detection, identification and intervention (6, 15, 18). Participants who were single and divorced were 2.5 and 3.5 times more likely to delay compared to those who are married. However, it reported that participants who chose to use psychiatric services as first portal of care were more likely to unmarried. This inconsistency might be because lack of social support. Study participants who were jobless were 3.4 times more likely to be delayed treatment

compared to those employed participants. In this study the age group 31-40 years had significant statistical association with delayed treatment seeking behavior compared with those 18-30 age group. In studies conducted in Ethiopia at Amanuel mental specialized hospital, unemployment was found to be associated with delayed treatment seeking behavior but there were no significant association between the duration of delay on path way care with age group and marital status (4). This might be due to lack of economic support to get modern treatment that necessitate long distance travel because of inaccessibility. Regarding patient diagnosis and treatment seeking behavior, patients with diagnosis of other psychotic disorder sought psychiatry treatment 80% earlier than bipolar patients. The probable reason could be the clinical presentation of the illnesses in which patients of this category are affected by more psychotic phenomena that results in a relatively overt behavioral disturbance than patient with bipolar disorder.

Conclusions

The study result showed a significant delay in seeking modern psychiatric treatment. Religious healers were the first place where help was sought for mental illness. Most of the respondents described that mental illnesses were caused by supernatural causes. First contact with religious sources of help, unmarried marital status, jobless/unemployed, being in age group of 31-40 years old, and patient diagnosis of other psychotic disorders were significantly associated with delayed psychiatric treatment. Therefore, it is vital to provide interventions on factors that play great role to delay psychiatric treatment.

Ethical Considerations

Ethical clearance was obtained from College of medicine and health science's Institutional Research Review Board (IRB) of Jimma University. Written informed consent was obtained from study participants to confirm willingness for participation after explaining the objective of the study. The information provided by each respondent was kept confidential.

Data availability statement

Data are available upon reasonable request.

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Author Contributions

ST designed the study, involved in the data collection, analysis and write up. HK and HH involved design, data analysis, and drafted manuscript. MA participated in the design of the study, analysis of the data and critically reviewed the manuscript. All authors read and approved the final manuscript.

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Competing Interest

The authors declared no conflict of interest.

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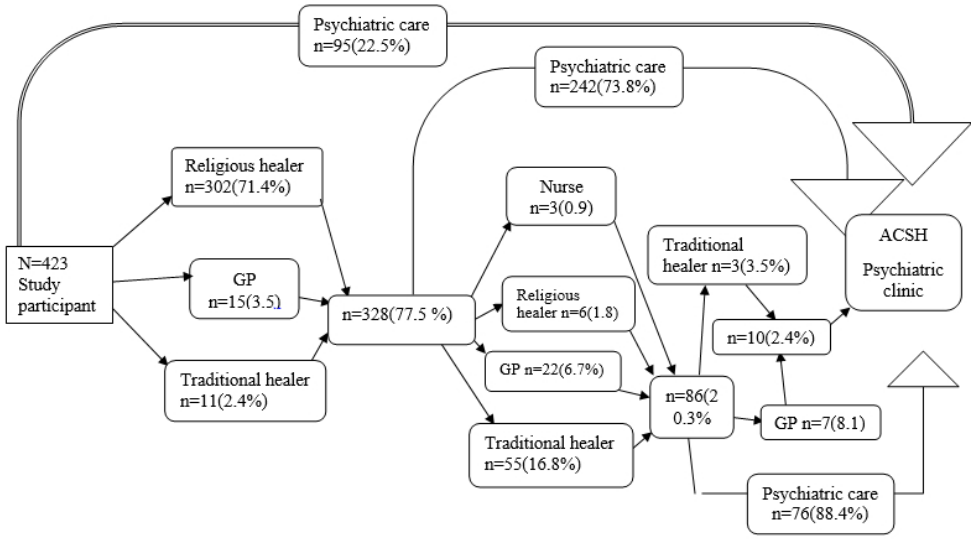
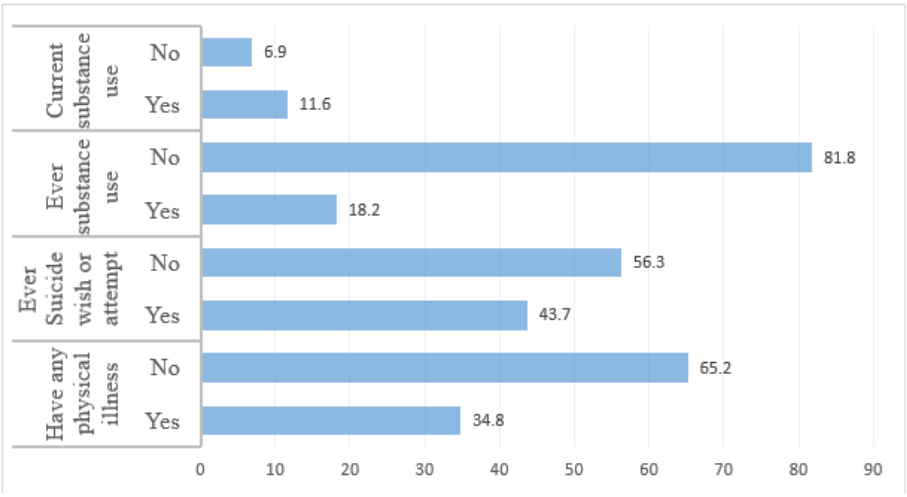


Figure 1: Pictorial representation of pathways to psychiatric treatment among 423 patients to arrive at ACSH psychiatry clinic



Note: **Physical illnesses/symptoms include**: *diabetic, hypertension, HIV, genito-urinary symptoms, headache, fever, weight loss, cough, chest pain, abdominal pain and joint pain*
Substances include: *alcohol, tobacco, khat, cannabis*,

Figure 2: Distribution of physical illnesses/symptoms, substance use and suicidal behaviors

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2
Objectives	3	State specific objectives, including any prespecified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5, 6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	5, 6
Bias	9	Describe any efforts to address potential sources of bias	*5,6*
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	6
		(*b*) Describe any methods used to examine subgroups and interactions	6
		(*c*) Explain how missing data were addressed	NA
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	NA
		(*e*) Describe any sensitivity analyses	NA
Results			NA

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	6
		(b) Give reasons for non-participation at each stage	NA
		(c) Consider use of a flow diagram	NA
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6,7
		(b) Indicate number of participants with missing data for each variable of interest	NA
Outcome data	15*	Report numbers of outcome events or summary measures	NA
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	13, 14
		(*b*) Report category boundaries when continuous variables were categorized	NA
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	NA
Discussion			
Key results	18	Summarise key results with reference to study objectives	18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	2
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14-18
Generalisability	21	Discuss the generalisability (external validity) of the study results	18
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	19

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

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Pathways to psychiatric care and factors associated with delayed help-seeking among patients with mental illness in Northern Ethiopia: A cross sectional study

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Pathways to psychiatric care and factors associated with delayed help-seeking among patients with mental illness in Northern Ethiopia: A cross sectional study

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Abstract

Objective: This study aimed to assess pathways to psychiatric care and factors associated with delayed help-seeking among patients with mental illness in northern Ethiopia using the world health organization pathway study encounter form.

Design: Cross sectional study design was used

Setting: Data was collected using face to face interview from patients with various diagnosis of mental illnesses attending outpatient treatment at Ayder Comprehensive Specialized Hospital in Mekelle City, Tigray, Northern Ethiopia

Participants: Participants who came to attend outpatient treatment during the study period were included in the study using consecutive sampling technique.

Outcome measures: Pathways to psychiatric care, delayed psychiatric treatment and factors affecting delayed psychiatric treatment

Results: The median duration from problem onset to contact with first care provider was 4 weeks, whereas to contact with modern psychiatric services was 52.0 weeks. Study participants who were single (AOR=2.91; 95%CI; 1.19, 7.11), divorced (AOR=3.73; 95%CI; 1.33, 10.49) and participants who perceive mental illness as shameful (AOR=3.29; 95%CI; 1.15, 9.41) had delayed treatment seeking behavior. Whereas, participants with no history of substance use (AOR=0.43; 95% CI; 0.20, 0.92) were less likely to have delayed treatment seeking behavior.

Conclusions: There is significant delay in seeking modern psychiatric treatment. Religious healers were the first place where help was sought for mental illness. Majority of the respondents described that mental illnesses were caused by supernatural causes. Stigma and lack of awareness about where treatment is available were barrier in seeking appropriate care.

Key words: pathway, psychiatric care, delayed treatment, mental illness, help-seeking

Word count: 4021

Strength and limitation of this study

- This study was conducted based on the pathway encounter form developed by WHO collaborative study which is important to collect data on a number of patients with mental disorders that sought services from both the formal and informal sectors.
- The study helps to identify major sources of consultation used by patients for psychiatric care

- This is the first pathway to psychiatric care study in northern part of Ethiopia with 100% response rate maintained.
- This study was conducted at tertiary Hospital among patients with severe mental illnesses and it might not be generalized for patients who do not receive mental health services and for those with common mental disorders following treatment at primary health care settings.
- Recall bias regarding the onset of illness could lead to over and under reporting of the duration of untreated mental illnesses.

Background

Mental illness is associated with high levels of chronicity, comorbidity and premature mortality (1, 2). This is due to the onset of first episode mental illnesses are usually started at early ages(3) but most people with the illnesses do not get early psychiatric treatment(4). Studies indicated that traditional and faith healers are the first source of help by majority of patients(4, 5). The reason is related with patients' knowledge about the causes and treatments of the illness and their awareness of the available services (6). These factors lead to prolonged duration of untreated mental illness (DUMI) with its adverse consequences such as poorer response to: psychotropic medications, symptoms control, and long term prognosis with more relapses. As a result, people with mental illness (PMI) develop poor quality of life and compromised social, personal and occupational functioning. Empirical studies have shown that the DUMI averages 1 to 2 years. The average DUMI is even more in developing nations. The reasons for which are yet to be explored from pathways of care service studies(7). Therefore, reducing DUMI has become the primary aim of modern psychiatric services for patients with mental illness(8). This can be achieved by identifying the patients' pathways to different help sources and factors that play role in delaying psychiatry treatments(6). Pathway to care is a comprehensive and systematized clarification of sources of care used by patients before seeking help from mental health professionals. It is a rapid and reasonable method of studying help seeking behavior of mentally ill patients and their family(9).

Descriptive studies from different countries indicated that a large number of patients do not present themselves directly to mental health professionals. They adopt paths which traverses

through many agencies(10). Study results indicated mixed findings regarding first source of help by PMI. While it was reported that faith healers and non-psychiatrist allopath care provider were the first to be consulted(6, 11, 12), in another studies it was psychiatrists followed by traditional healers and general practitioners (13-16). Results from two previous Ethiopian studies also presented different findings. In one of the study conducted in the capital city, Addis Ababa, in specialized mental health Hospital, it was shown that 41% of patients with new episodes of neuropsychiatric disorders directly consulted a psychiatrist. About one third, 30.9% of patients had sought care from priests, holy water or church(10). In contrast, the second study which was conducted in Southwest Ethiopia in a psychiatry clinic under a general Hospital setup, reported that half of the patients sought traditional treatment from either a religious healer 30.2% or an herbalist 20.1% before they came to the hospital for psychiatric care(17).

The median DUI is affected by the paths taken by patients to arrive to psychiatry care. A Study done in different countries revealed that people with mental disorder seek treatment after 6 months and above from the onset of their illness(6, 18). In Asian based studies where most of the initial sources of help reported were traditional or religious care providers, the median duration untreated illness greatly varies. In a study from Iran duration of untreated psychosis and pathway to care in patients with first-episode psychosis showed that the median duration of untreated psychosis (DUP) was 11 weeks with the mean of 52 weeks whereas, it was 64 weeks and 10.5 weeks from Pakistan and Bangladesh study results respectively(13-15). In a Nigerian study, the mean and median DUP were 72.80±75.7 and 52 weeks, respectively (11). In Ethiopian studies, the median delay between onset of illness and arrival at the psychiatric hospital was 38 weeks(10)while median duration of symptoms of mental illness before contact to modern mental health service was 52.1 weeks(17). The initial consulted healers might cause to prolong pathway to psychiatric care and a possible obstacle to early detection, identification and intervention (6, 15, 18).

It was indicated that subjects who chose to use psychiatric services as first portal of care were more likely to be younger in age, unmarried, unemployed and better educated(6, 10, 17). Patients who reported financial difficulties (14), diagnosed with Schizophrenia and substance use disorders initially sought psychiatric care from non-psychiatric treatment facility or centers before seeking care at the public psychiatric hospital (16). The stigma associated with the illness

and the knowledge and beliefs about the cause of mental illness was found to affect the preferences of help sources among patients and caregivers(12, 14).

However, in the northern part of Ethiopia, no scientific data available indicating pathways to psychiatry care service. Therefore, this study was conducted with the aim to assess pathway to psychiatric care service and associated factors with delayed help seeking among people with mental illness. This kind of study is very crucial to identify and intervene contributing factors for delayed psychiatric care for better treatment prognosis and outcome.

Methods

Study design and setting

Hospital based cross sectional study was conducted at Ayder comprehensive specialized Hospital, Mekelle city, Northern Ethiopia from May to June, 2017. Ayder comprehensive specialized hospital commenced rendering its referral and non-referral services in 2008. The hospital provides services to eight million population in its catchment areas of the Tigray, Afar and northeastern parts of the Amhara national regional states. It provides inpatient and outpatient services for all age groups. The psychiatry unit has 18 beds and approximately 850 patients receive outpatient services every month. Psychiatry is the only clinical department which receives patient without referral and with referrals from all direction of the catchment area.

Participant selection

Sample size was determined using single population proportion formula assuming that 50% of the participants will seek early treatment at 95%CI and 5% margin error. Considering 10% non-response rate a total of 423 adult patients with mental illnesses were selected. Consecutive sampling method was used to select the study participants until the required sample size is achieved.

Patient and public involvement

No patients were involved

Data collection and Measurements

The data was collected using structured interviewer administered questionnaires prepared in local languages (Amharic and Tigre language). Pathways to psychiatric care was assessed using the World Health Organization (WHO) encounter form. This questionnaire documents the care from whom help is initially sought (the first pathway contact), and then the next carer (second pathway contact), third carer (third pathway) and finally a fourth carer (Fourth pathway) contact (19). Treatment delay was measured using median time interval in weeks from problem onset to contact with psychiatric services. To sort significant delay for seeking mental health treatment, 52.1 weeks median duration was taken as a reference point from a study conducted in Southwest Ethiopia (17). Therefore, individuals who sought mental health treatment from the psychiatric hospital after 52.1 weeks from the first onset of illness were categorized as delayed and before 52.1 weeks as early treatment seeking for psychiatric care. Data was collected by eight trained BSc Psychiatry nurses using face to face interviews.

Data Processing and Analysis

The collected data was coded after checking their completeness then entered to Epidata Version 3.1.3 cleaned and exported to IBM SPSS Statistics for Windows, version 20 for further analysis. Descriptive statistics was computed for continuous variables. For categorical variables, bivariate analyses were performed to nominate candidate variables for multivariate logistic regression analysis. Then, those variables with p value of 0.25 and below was fitted to multivariate logistic regression analysis model to assess variables that have association with the outcome variable and with 95% CI to control for confounding. The strength of association was measured using adjusted Odds ratio (AOR) and level of statistical significance was declared at p value less than 0.05.

Results

Socio-demographic characteristics of study participants

Data was collected from 423 study participants with 100% response rate. Out of the total study participants (53.4%) were males. The mean age was 32.48 (SD ±9.33) years with minimum and maximum age of 18 and 60 years respectively. About half, 48.5%, of the participants were jobless and a quarter, 25.8%, of them were illiterate (table 1).

Table 1. Socio-demographic characteristics of study participants at Ayder compressive specialized Hospital.

Variables	Responses	Frequencies	Percentages
Residence	Rural	141	33.3
	Urban	282	66.7
Age	18-30	217	51.3
	31-40	130	30.7
	41-50	59	13.9
	51-60	17	4.0
Sex	Male	226	53.4
	Female	197	46.6
Marital status	Married	104	24.6
	Single	239	56.5
	Divorced	63	14.9
	Widowed	17	4.0
Religion	Orthodox	342	80.9
	Muslim	66	15.6
	Catholic	8	1.9
	Protestant	7	1.7
Ethnic	Tigray	392	92.7
	Amhara	15	3.5
	Oromo	6	1.4
	Afar	9	2.1
	SNNP	1	0.2
Education	Illiterate	109	25.8
	Can read and write	18	4.3
	Primary school	107	25.3
	High school	102	24.1
	Diploma	40	9.5
	Degree and above	47	11.1
Occupation	Jobless	205	48.5
	Daily laborer	25	5.9
	Farmer	46	10.9
	Private business	49	11.6
	Prisoner	2	0.5
	Student	33	7.8
	House wife	23	5.4
	Civil servant	40	9.5
Family size	1-3	235	55.6
	4-8	165	39
	>8	23	5.4

**SNNP: Southern Nation Nationalities and Peoples' Region*

Sources of referral for first contact to psychiatry care and distribution of medically diagnosed mental illnesses

During their first contact to psychiatric care majority, 252(59.6%), of the participants sought treatment for their illness on the advice of their family members or relatives followed by former patients 119(28.1%). Out of the total study participants 107(25.3%) came with a referral letter. Nearly two-thirds, 268(63.4%), had follow ups whereas, 155 (36.6) were new patients. This study indicated that the time intervals from onset of symptom to the first contact to psychiatric care were not normally distributed. The minimum and the maximum time interval to seek treatment was 0.1 and 1560 weeks respectively. Outliers with a very long delay were present. Therefore, median rather than mean duration was used. The median duration from problem onset to contact with modern psychiatric services was 52 weeks with inter-quartile range of 140 weeks. Time interval to receive care was early for 247(58.4%) and delayed for 176(41.6%) of the study participants. Based on DSM-IV-TR diagnosis 182(43%) were diagnosed to have schizophrenia (Table 2).

Table 2: Distribution of mental illnesses to psychiatric care among patients attending outpatient treatment at Ayder comprehensive specialized hospital in 2017 (N=423)

Variables	Responses	Frequencies	Percentages
Who Suggested to care sought from	Patient him self	32	7.6
	Former patient	119	28.1
	Family	252	59.6
	Others*	20	4.7
Come with referral letter	No	316	74.7
	Yes	107	25.3
Past history of mental health care service	Yes	268	63.4
	No	155	36.4
Time interval to receive care	Early(<52 weeks)	247	58.4
	Delayed(>52 weeks)	176	41.6
Diagnosis based on DSM TR	Bipolar	46	10.9
	Other psychotic	79	18.7
	Schizophrenia	182	43
	MDD	85	20.1
	Epilepsy	6	1.4
	Anxiety	16	3.8
	Others*	9	2.1

**Other represents for who suggested was health professional, neighbor and work mate.*

Other for diagnosis represents for sleep, somatoform disorders and PTSD.

Pathways to psychiatric care

Out of the total study participants 302(71.4%) sought help from religious healer in the first time, 95(22.5%) sought help directly from psychiatric service, and 11(2.6%) from traditional healer (see figure 1 and table 3). The main source of information to get help for their illness were from family /relative 339(80.1%), patient himself 47(11%), and from former patient18 (4.2).The main problem presented to get help was because of aggressive behavior 181(42.8%), suicidal behavior 49(11.6%), functional impairment 95(22.5%), and worsening of their illness 87(20.6%) (Table 3).

Table 3: Distribution of first contact of care among patients at Ayder comprehensive specialized hospital in 2017 (N=423).

Variables	Responses	Frequencies	Percentages
Where did go to seek treatment	Religious leader	302	71.4
	Traditional healer	11	2.6
	General practitioner	15	3.5
	Psychiatric service	95	22.5
Who suggested care sought	Patient himself	47	11
	Family/relative	339	80.1
	Friends	10	2.4
	Neighbor	8	1.9
	Former patient	18	4.3
	Health professional	1	0.2
What was the main Problem?	Aggressive behavior	181	42
	Suicidal behavior	49	11.6
	Functional impaired	95	22.5
	Worsen his illness	87	20.6
What was the main treatment?	Religious/holy water	302	71.4
	Traditional medicine	11	2.6
	Medication	10	2.4
	Psychiatric service	95	22.5
	Other	5	12.2

Other what was the main treatment represents referral

In the second point of contact to care with non-psychiatric service out of the remaining 328 study participants 6(1.8%) sought help from religious healer, 55(16.8%) from traditional healer, 22(6.7%) from general practitioner, 3(0.9%) from community nurse whereas 242(73.8%) contacted modern psychiatric service. Their sources of information to get psychiatric service

were: patient himself 14(4.3%), on the advice family/relative 214(65.2%), and former patient 70(21.3%). Regarding their problem presented to get help seeking was due to aggressive behavior 81(24.7%), suicide 27(8.2%), functional impairment 63(19.2%), and because of worsening their illness 147(44.8%).

In the third path way after contact with non-psychiatric service out of the remaining 86 study participants,76(88.4%) study participants sought help from psychiatric service,7(8.1%) from general practitioner and 3(3.5%) from traditional healer. Regarding their source of information to get service from family/relative were 44(51.1%), from former patient 31(36%) from health professional 7(8.1%), 2(2.3%) from neighbor and1 (1.2%) on the advice of work mate. Depending on the main problem presented to seek help was due aggressive behavior 20(23.3%), because of suicide attempt 5(5.8%), functional impairment 12(14%), and because of worsening of their illness was 49(57%).

In the fourth pathway out of the remaining 10 study participants 10(100%) sought help from psychiatric service. Regarding their source of information to get service from family/relative were 2(20%), former patient 6(60%) and from health professional 2(20%). Depending on the main problem presented to seek help was due aggressive behavior 1(10%), suicidal behavior 1(10%) and because of worsening of their illness was 8(80%).

Perceived cause, severity, stigma and treatment option of mental illness and reasons for delay treatment seeking

Study participants responded reasons for delay in help seeking treatment 41(9.7%) was due to financial difficulties 222(52.5%), did not know where to seek help which could be due to being new to the environment for people with mental illness coming from Arab countries and internally displaced from different regions of the country due to inter communal conflict, and 72(17%) were lack of accessibility of mental health facilities nearest to their area. Concerning perceived causes of mental illness were spiritual possession, evil eye, sinful act, walks around garbage dumps, and stress accounted for 124(29.3%), 41(9.7%), 31(7.3%), 38(9%), and 129(30.5%) respectively. Regarding to problems faced in help-Seeking, patients responded that it is because their family members did not recognize the severity of illness was 272(64.3%) and family member felt ashamed 102(24.1%).

The majority 349(82.5%) of the study participants responded that mental illness is curable. Almost all, 343(97.4%), participants responded mental illness can be treated by modern treatment. Study participants responded that mental illness affects people who are angry and stressed were 244(57.5%) and people with crisis 58(13.7%). Concerning perceived severity of mental illness 260(61.5%) responded as very severe whereas 16(3.8%) respond less severe. In terms of community perception for mental illness those who responded were: very highly shameful 86(20.1%), not as such shameful 107(25.3%) and not at all shameful 102(24.1%) (Table 4).

Table 4: Distribution of patient's perception towards cause, severity, stigma and treatment option of mental illness and reasons for delay treatment seeking at Ayder Comprehensive Specialized Hospital, 2017 (N=423)

Variables	Responses	Frequencies	Percentages
Reasons for delay in help seeking	Distance	36	8.5
	Financial difficulties	41	9.7
	Didn't know where to seek help	222	52.5
	Lack of mental health service	72	17
	Not believed modern treatment	25	5.9
	Arrived in early time	27	6.4
Perceived causes of mental illnesses	Spiritual possession	124	29.3
	Evil eye	41	9.7
	Family history	23	5.4
	Sinful act	31	7.3
	Pathogen	5	1.2
	Walk around tomb, ,ash, forest	38	9
	I don't know	32	7.6
	Stress	129	30.5
Problems Faced in Help-Seeking	Family didn't recognize severity of the illness	272	64.2
	Family member felt shameful	102	24.1
	Couldn't convince medical staff	16	3.8
	Friends/relative discourage them	11	2.6
	Didn't face any problem	12	2.8
Is mental illnesses curable?	Yes	349	82.5
	I am not sure	4	0.9
	No	70	16.5
Which Treatment can be used to treat mental illness	Modern medicine	343	97.4
	holly water	6	1.7
	Traditional medicine	2	0.6
Which kind of people are affected by mental illnesses?	Angry and stressed	244	57.7
	People who use drug	44	10.4
	People with crisis	58	13.7

	Those who think a lot	56	13.2
	Others*	21	5
Perceived severity of mental illnesses	Very high severe	260	61.5
	High severe	96	22.1
	Severe	51	12.1
	Less sever	16	3.8
Perception for mental illness	Very high shameful	86	20.1
	Highly shameful	83	19.6
	Shameful	46	10.9
	Not as such shameful	107	25.3
	Not at all shameful	102	24.1

**Other represents for having evil eye and I don't know*

Distribution of physical illnesses/symptoms, substance use and suicidal behaviors

Out of total participants 145(34.8%) responded to have physical illness. Suicidal behaviors and substance use were high among participants. (Figure 2)

Factors Associated with Delayed Contact with Modern Psychiatric Care

Controlling other variables age category was statistically associated to delay treatment seeking. Participants with age 31-40 years were 2.8 times (AOR=2.8; 95%CI; 1.4-5.59) more likely to have delayed modern psychiatric service than 18-30 years age groups. Marital status was statistically associated with delayed psychiatric treatment. Study participants who are single (AOR=2.52; 95%CI; 1.03, 6.22), and divorced (AOR=3.5; 95%CI; 1.25-9.81) were 2.5 and 3.5 times more likely to have delayed psychiatric treatment than married. Study participants who were jobless were 3.4 times (AOR= 3.38; 95%CI; 1.05-10.82) more likely to have delayed treatment psychiatric treatment than employed. Patients with DSM-IV-TR Diagnosis of other psychotic disorder seek early psychiatric treatment about 82% (AOR=0.18; 95%CI; 0.06-0.51) more than patients with bipolar disorder. Participants who came after seeking religious treatment were 3.7(AOR=3.73; 95%CI; 1.75-7.96) times more delayed than patients who came directly to the psychiatric service. Participants who perceived mental illness as shameful were 3.4 times (AOR=3.42; 95%CI; 1.19-9.83) times more likely to have delayed psychiatric treatment than those who responded not shameful. (Table 5)

Table 5: Multivariate analysis of factors associated with delayed psychiatric treatment at Ayder Comprehensive specialized hospital, July, 2017 (N=423)

Variables	Responses	Time		AOR	P value
		Early	Delayed		
Sex	Female	120(60.9)	77(39.1)	0.88(0.46,1.7)	0.709
	Male	127(56.8)	99(43.2)	1	
Age	18-30	143(65.9)	74(34.1)	1	
	31-40	65(50)	65(50)	2.78(1.38,5.59)**	0.004
	41-50	30(50.8)	29(41.2)	2.78(0.82,6.35)	
	51-60	9(52.9)	8(47.1)	1.44(0.32,6.87)	
Marital status	Married	73(70.2)	31(29.8)	1	
	Single	136(56.9)	103(43.1)	2.53(1.03,6.22)**	0.043
	Divorced	29(46)	34(54)	3.5(1.25,9.81)**	0.017
	Widowed	9(52.9)	8(47.1)	2.51(0.57,11.07)	
Occupation	Jobless	95(46.1)	111(53.9)	3.38(1.05,10.82)**	0.041
	Daily labor	18(75)	6(25)	1.87(0.35,9.05)	
	Farmer	29(63)	17(37)	1.54(0.35,6.77)	
	Private business	35(71.4)	14(28.6)	1.43(0.4,5.42)	
	Student	26(78.8)	7(21.2)	1.72(0.41,7.28)	
	Prisoner	1(50)	1(50)	10.52(0.24,45.25)	
	House wife	13(56.5)	10(43.5)	2.62(0.5,13.86)	
	Employee	30(75)	10(25)	1	
diagnosis based on DSM-IV-TR	Bipolar	29(63)	17(37)	1	
	Other psychotic d/o	66(83.5)	13(16.5)	0.18(0.06,0.51)**	0.001
	Schizophrenia	65(35.7)	117(64.3)	1.89 (0.83,4.31)	
	MDD	62(72.9)	23(27.1)	0.4(0.15,1.07)	
	Epilepsy	3(50)	3(50)	1.83(0.21,16.31)	
	Anxiety	14(87.5)	2(12.5)	0.31(0.05,2.08)	
	Other	8(88.9)	1(11.1)	0.29(0.02,3.46)	
where did you go to seek help	Religious healer	154(51)	148(49)	3.73(1.75, 7.96) **	0.001
	traditional healer	8(72.7)	3(27.3)	0.82(0.13,5.22)	
	General practitioner	12(80)	3(20)	1.1(0.15,7.91)	
	Psychiatrist	73(76.8)	22(23.2)	1	
Perception of mental illness	Very high shameful	46(54.1)	39(45.9)	0.93(0.39,2.18)	
	high shameful	46(55.4)	37(44.6)	0.93(0.39,2.18)	
	Shameful	19(41.3)	27(58.7)	3.42(1.19,9.83)**	0.023
	Not assuch shameful	71(66.4)	36(33.6)	0.75(0.35,1.58)	
	Not at all shameful	65(63.7)	37(36.3)	1	

Discussions

The DSM-IV-TR diagnosis of the study participants in this study indicated that schizophrenia accounts 43%, major depressive disorder 20.1%, other psychotic disorders 18.7%, bipolar disorders 10.9%, anxiety disorders 13.8% and epilepsy1.4%.

The pathway of the study participants revealed that 71.4% of study participants first sought help from religious sources and 2.6% from traditional healers. Less than a quarter, 22.5%, of them sought direct psychiatric treatment and 3.5% participants sought help from general health practitioner. This is in agreement with a study result from Nigeria which reported that most of the participants first sought treatments from religious and traditional healers (76.8%). Psychiatrists were the first contact for 18.5% of participants while 4.6% of participants received medical attention from GP (11). Similar results were also reported in another Nigerian study which indicated that many first sought treatments were from religious healers 48%, followed by traditional healers 20%, general/private hospital 20% and lastly, the psychiatric hospital 12% (12). A study result from India also showed that faith healers 39.5% followed by non-psychiatrist allopath care providers 29% were the most consulted sources of help. Direct entry to psychiatric treatment was reported by 13.5% of patients (6). However, it was against study results from Ghana and Ethiopia. A Ghanaian study showed that patients that first sought care at the psychiatric hospital was 52.3 %; another 23.3 % sought from religious or traditional healing centers as their first contact; 21.5 % sought treatment from non-psychiatric general hospital as first point of contact; and 2.9 % sought help from community health nurse and other community medical practitioners as their first point of mental health care contact (16). In one of the Ethiopian study, over a third of the patients 35.2%, came directly to psychiatric treatment. Half of the patients sought traditional treatment from either a religious healer 30.2% or an herbalist 20.1% before they came to the psychiatry treatment (17). In another Ethiopian study it was shown that 41% directly consulted a psychiatrist, 30.9% sought help from holy water /church, 21.5%consulted doctors and 4.5% had initial contact with herbalist (10). The differences could be due to the study area and the sample size. Studies done in capital cities have larger proportions of patients using direct psychiatric treatment which could be associated with accessibility of the mental health services and with better literacy. Whereas, the sample size

could also play a significant role as studies use different sample sizes ranging from (n=107 to 1044) (10, 16).

The prevalence of delayed psychiatric treatment was 176 (41.6%). It was lower than a study conducted to assess patterns of treatment seeking behavior for mental illnesses in Southwest Ethiopia in which the reported treatment delay was 65.l% (17). This might be due the current study was conducted seven years after the previous study and patients and their relatives might have a relatively better awareness about mental illness and treatment options. The median DUMI from illness onset to first carer contact and first psychiatric treatment contact were 4.0 and 52 weeks respectively. Different studies also indicated similar pathways taken to seek help by majority of PMI and similar median DUMI to the first psychiatric treatment (6, 11, 12, and 17). However, the median DUMI was less than a study from Pakistan (14) and greater than studies conducted in Iran, Bangladesh and Ethiopia (10, 13, and 15). The probable reason for the discrepancy could be the small sample sizes in the Pakistan (n=93) and Bangladesh (n=50) studies and the clinical diagnosis of the study population in which the Pakistani study employed only patients with psychosis. Other possible reason could be the socio-cultural differences among the study participants and different health care setups.

In this study majority 59.6% participants sought treatment for their illness were on the advice of their family /relative whereas 28.1% were advised by former patient and 7.6% of participants managed to come by themselves, and 74.7% came without referral letter. Closely similar result was obtained from a study in Ethiopian capital where majority 69.6% of study participants attended to psychiatry on the advice of their family member, 9.4% advice of former patient and 87.6% came without any referral (10). This is because most patients in Ethiopia get support and care by their family/relative. Similar results were also found from other studies in which reasons for accessing the mental health service were due to advise from friends and close relatives after their illness is worsen and deteriorating condition of the illness was 64%, (11, 12). This is a crucial area of emphasis and attention should be given for peer support of people with mental illnesses. Service users and researchers in developed countries have strongly advocated for access to peer support for people with SMI (20) and went further to implementation influences of the peer support network interventions (21). A systematic review conducted in low and middle income countries also shown positive results of peer-delivered interventions (22) . Therefore, it

is vital to utilize these resources as an intervention ingredient to hasten early psychiatry treatment of People with mental illnesses.

Comparing stigma associated with mental illness was found to affect the preferences of help sources among patients and caregiver. In this study about 24.1% of study participants responded that problems faced in help-seeking process were because family member felt ashamed of their illness. In a study from Pakistan almost 25% of the mentally ill patients and an equal number of family members reported that they felt shy in discussing their illness (11). A study from Nigeria indicated that 20% of people with mental illness were influenced by stigma and discrimination from seeking specialist care (12). It is very crucial to take intervention on this aspect as stigma encountered might be significant barrier to help-seeking behavior of an individual resulted in delayed psychiatric care. This study revealed reasons for delay in help seeking was because of distance 8.5%, financial difficulties 9.7%, whereas, 52.5% reported didn't know where to seek help, 17% due to lack of availability of mental health facilities nearest to their area and 5.9% did not believe on modern treatment. Relating to problems faced in help-seeking process 64.3% were because family member didn't recognize the severity of illness, 3.8% couldn't convince medical staff of the severity of the illness and 2.6% discouraged by relatives/friends from seeking help. This study is similar with the study done in Pakistan when participants were inquired about the reasons for delay, around 29% reported financial difficulties, whereas 16% cited difficulty in reaching treatment centers. There were 40% patients and 9% of family and friends who did not feel the need for treatment. In around 23% cases, the patients and family did not have information regarding centers that offer treatment. Around 5% of the cases reported that health care providers did not take the illness seriously (11). This similarity might be due to lack of availability of mental service, lack of awareness and mental health literacy of psychiatric services and lack integration mental health with main stream health services in those study areas. In Nigeria also about 20% mentioned lack of available mental health services in the community as the reason for delays in seeking early treatment. The rest 80% indicated that poor awareness about mental health services related to traditional beliefs regarding the causes of mental health, with health services not considered a priority for the treatment of such illnesses (14). This similarity might be due to lack of availability of mental health service, lack of awareness and mental health literacy of psychiatric services and lack integration mental health with main stream health services in those counties. Concerning perception and beliefs about the cause of mental

illness in this study participants responded that the perceived causes of mental illness were spiritual possession 124(29.3%), evil eye41(9.7%), sinful act31(7.3%), I do not know32(7.6%), and walks around garbage dumps accounting 38(9%)the . In the Southwest Ethiopian, the most common explanations given for the cause of the mental illness were spiritual possession 198 (51.6%) and evil eye 61 (15.9%), whereas 73 (19.0%) of the respondents said they did not know the cause of mental illnesses (8). The study done in Nigeria showed 20% believed that mental health issues were caused by charms from an enemy or supernatural powers. This similarity might be due to lack of awareness towards cause of mental illness in those study area.

Study participants who came after seeking religious treatment were 3.8 times more likely to delay for psychiatry treatment than those who came direct to psychiatric treatment. This might be because the initial contribution healers might cause to prolong pathway to psychiatric care and be possible obstacle to early detection, identification and intervention (6, 15, 18). Participants who were single and divorced were 2.5 and 3.5 times more likely to delay compared to those who are married. However, it is reported that participants who chose to use psychiatric services as first portal of care were more likely to unmarried. This inconsistency might be because lack of social support. Study participants who were jobless were 3.4 times more likely to be delayed treatment compared to those employed participants. In this study the age group 31-40 years had significant statistical association with delayed treatment seeking behavior compared with those 18-30 age group. In studies conducted in Ethiopia at Amanuel mental specialized hospital, unemployment was found to be associated with delayed treatment seeking behavior but there were no significant association between the duration of delay on pathway care with age group and marital status (4). This might be due to lack of economic support to get modern treatment that necessitate long distance travel because of inaccessibility. Regarding patient diagnosis and treatment seeking behavior, patients with diagnosis of other psychotic disorder sought psychiatry treatment 80% earlier than bipolar patients. The probable reason could be the clinical presentation of the illnesses in which patients of this category are affected by more psychotic phenomena that results in a relatively overt behavioral disturbance than patient with bipolar disorder.

Strengths and limitations of the study

This is a pathway to care study that portrays the paths taken by patients with mental illnesses to arrive to psychiatric care facility. It indicates the various intermediate help sources the patients

used before a visit to psychiatric care. Regardless of perceived importance by patients, the intermediate help sources play a role on the duration of use of psychiatry treatment and the current study had identified help sources that contributed to delayed psychiatry treatment. Additionally, the study also assessed patient related factors, illness perception and stigma among others that affected delayed psychiatric care. However, the study did not assess the use of other help sources post psychiatric care treatment that might have an impact on treatment adherence. Recall bias of the first onset of illness and or the duration of illness could be a major limitation as majority might knew the exact time and used only approximations. The use of interviewer administer questionnaire which might contributed to social desirability bias and selection of participants from a single facility were other limitation of the study.

Conclusions

The study result showed a significant delay in seeking modern psychiatric treatment. Religious healers were the first place where help was sought for mental illness. Most of the respondents described that mental illnesses were caused by supernatural causes. First contact with religious sources of help, unmarried marital status, jobless/unemployed, being in age group of 31-40 years old, and patient diagnosis of other psychotic disorders were significantly associated with delayed psychiatric treatment. Therefore, it is vital to provide interventions on factors that played a role to delayed psychiatry treatment.

Data availability statement

Data are available upon reasonable request to the corresponding author.

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Contributors

ST designed the study, involved in the data collection, analysis and write up. HK and HH involved design, data analysis, and drafted manuscript. MA participated in the design of the study, analysis of the data and critically reviewed the manuscript. All authors read and approved the final manuscript.

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Competing Interest

None declared

Patient consent for publication

Not required

Ethical Considerations

Ethical clearance was obtained from College of medicine and health science's Institutional Research Review Board (IRB) of Jimma University. Written informed consent was obtained from study participants to confirm willingness for participation after explaining the objective of the study. The information provided by each respondent was kept confidential.

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Figure Caption and legends

Figure 1:Pictorial representation of pathways to psychiatric care among 423 patients to arrive at ACSH psychiatry clinic

Figure 2: **Distribution of physical illnesses/symptoms, substance use and suicidal behaviors**

Note: **Physical illnesses/symptoms include**: *diabetic, hypertension, HIV, genito-urinary symptoms, headache, fever, weight loss, cough, chest pain, abdominal pain and joint pain*

Substances include: *alcohol, tobacco, khat, cannabis*

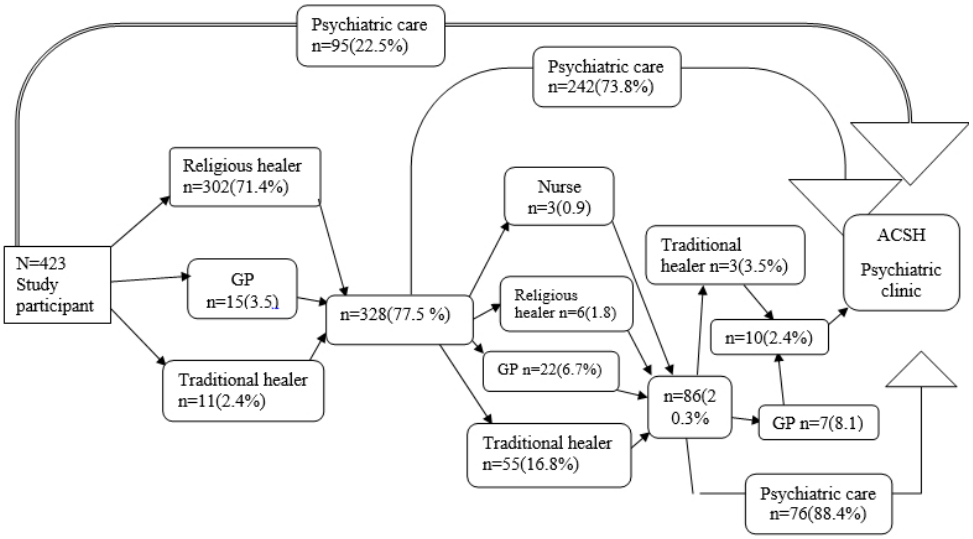
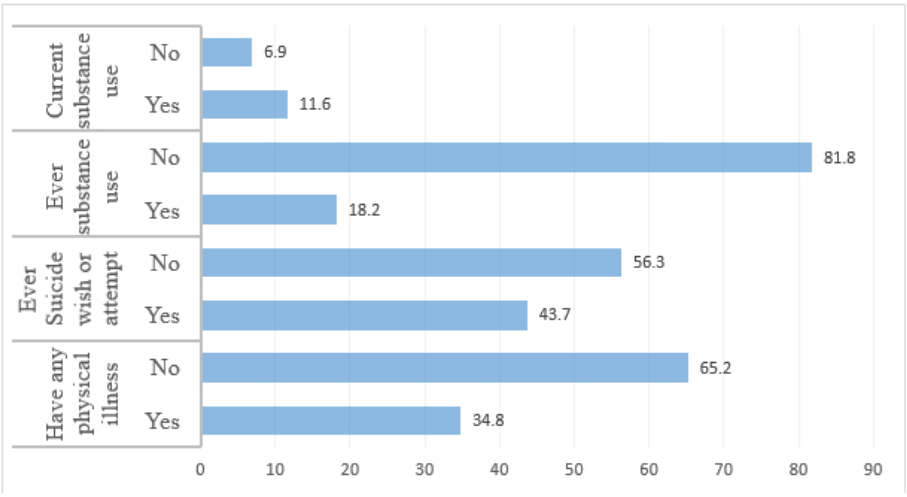


Figure 1: Pictorial representation of pathways to psychiatric treatment among 423 patients to arrive at ACSH psychiatry clinic



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Substances include: *alcohol, tobacco, khat, cannabis*,

Figure 2: Distribution of physical illnesses/symptoms, substance use and suicidal behaviors

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2
Objectives	3	State specific objectives, including any prespecified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5, 6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	5, 6
Bias	9	Describe any efforts to address potential sources of bias	*5,6*
Study size	10	Explain how the study size was arrived at	5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	6
		(*b*) Describe any methods used to examine subgroups and interactions	6
		(*c*) Explain how missing data were addressed	NA
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	NA
		(*e*) Describe any sensitivity analyses	NA
Results			NA

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	6
		(b) Give reasons for non-participation at each stage	NA
		(c) Consider use of a flow diagram	NA
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6,7
		(b) Indicate number of participants with missing data for each variable of interest	NA
Outcome data	15*	Report numbers of outcome events or summary measures	NA
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	13, 14
		(*b*) Report category boundaries when continuous variables were categorized	NA
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	NA
Discussion			
Key results	18	Summarise key results with reference to study objectives	18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	2
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14-18
Generalisability	21	Discuss the generalisability (external validity) of the study results	18
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	19

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.