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Medication Non-adherence and Use of Traditional Treatment Among Adult Psychiatric Patients in Jimma Town Treated at Jimma University Teaching Hospital Psychiatric Clinic. Community Based Cross-sectional Study, 2016

Birhanie Mekuriaw[1]*, Mubarek Abera[2], Workinesh Tessema[2], Liyew Agenagnew[3], Badiru Dawud[4], Eba Abdisa[5], Markos Tesfaye[6], Daniel Tolosa[7], Hailemariam Hailsilassie[2], Matiwos Soboka[2], Almaz Mamaru[2], Eyerusalem Yeshgeta[2] and Habtamu Kerebih[2]

[1]*Department of Psychiatry, College of Health Science, Dilla University, Dilla, Ethiopia*
[2]*Department of Psychiatry, Institute of Health, Jimma University, Jimma, Ethiopia*
[3]*School of Nursing, Institute of Health, Jimma University, Jimma, Ethiopia*
[4]*Department of Psychiatry, School of Nursing, College of Medical and Health Science, Haramya University, Harer, Ethiopia*
[5]*Department of Psychiatry, School of Nursing, College of Medical and Health Science, Wollega University, Nekemt, Ethiopia*
[6]*Department of Psychiatry, St. Paul's Hospital Millennium Medical College, Adiss Ababa, Ethiopia*
[7]*Department of Psychiatry, Adama Hospital, Adama, Ethiopia*

Abstract

Background: Medication non-adherence is common problem across all branches of medicine including psychiatry especially in severe mental illness. Many people with mental illness are known to use both modern and traditional treatment for their illness. However, the level of medication non-adherence among this group of patients is not yet explored. This study was conducted to assess the magnitude of non-adherence and traditional treatment as well as associated factors with non-adherence.

Methods: Community based cross sectional study was conducted from April June, 2016 in Jimma town. Data was collected using interviewer administered questionnaire and from patients' medical record. The four-item Morisky medication adherence scale was used to assess degree of medication non adherence. Pre-test was done on patients who had follow-up at Jimma University teaching Hospital psychiatric clinic and outside the study area. Data was analyzed using SPSS version 20 for windows and descriptive statistics and binary logistic regression statistical methods were applied. P-Value of less than 0.05 was considered statistically significant association in the final model.

Results: Out of 300 patients, 61.7% males and 38.3% were females. The prevalence rate of medication non-adherence was 39.3% and 198(66%) of the participants were traditional treatment users. Using religious types of traditional treatment [AOR=3.763, 95% C.I (1.459, 9.707)], longer duration of treatment (>10 years) [AOR=0.375, 95% C.I (0.155, 0.908)], no history of treatment default [AOR=0.375, 95% C.I (0.155, 0.908)] and no relapse history [AOR=0.365, 95% C.I (0.190, 0.702)] were independently associated variables with medication non-adherence.

Conclusion: This study showed that high magnitude of non-adherence and majority of the participants were users of traditional treatments which significantly affects medication adherence. Therefore, mental health professionals should focus on methods how to work cooperatively with traditional treatment giver to decrease non adherence and improve counseling service for patients about being non adherent and its effect on clinical outcome.

Keywords: Non adherence; Traditional treatment; Psychiatric patient; Psychiatry clinic

Abbreviations: AOR: Adjusted Odds Ratio; COR: Crude Odds Ratio; MMAS: Morsiky Medication Adherence Scale; MARS: Medication Adherence Rating Scale; CI: Confidence Interval; ETB: Ethiopian Birr; JUSH: Jimma University Specialized Hospital; SD: Standard Deviation; Rx: Treatment; Hx: History

Introduction

Psychiatric disorders are significant deviant from behavioral and/or psychological wellbeing which exposes for profound functional impairment and these should not totally linked with culturally sanctioned response to specific events. In the treatment process of this complicated problem, being non adherent to prescribed medication is a big challenge [1]. Adherence with a medication regimen is generally defined as the extent to which patients take medications as prescribed by their health care providers. It includes information on dose taking (taking the prescribed number of pills each day) and the timing of doses (taking pills within a prescribed period), whereas, Non-adherence to treatment is the degree to which a patient does not carry out the clinical recommendation of a treating physician or in other expression, it is failure of the patient to follow the prescribed treatment regimen [2,3]. Non adherence was been monitored since the very ancient time and it is a focus of increasing concern in the treatment of psychiatric disorders in recent years [3,4]. It is associated with multiple factors and which is also the main cause of illness relapse and poor prognosis as a large [5]. Despite non adherence is a common problem among different medical disciplines, the nature of psychiatric illness makes it special and various reasons for non-adherence came into view including co-morbidity, type of illness, cost of treatment and side effects of medication being

***Corresponding author:** Birhanie Mekuriaw, Department of Psychiatry, College of Health Science, Dilla University, Dilla, Ethiopia, Tel: +251461310001; E-mail: biradilla@gmail.com

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prescribed. Along with these reasons, many social and cultural myths and beliefs regarding psychiatric medication, use of alternative medicine and clinician-patient therapeutic alliance or relationship are also important factors contributing to non-adherence [5-8]. Due to this bunch of contributing factors, it limits the effectiveness of medications among patients with psychiatric disorder and which directly shows that proper insurance of good drug adherence is very important for good prognosis [1,9,10]. Non adherence to prescribed medical interventions is an ever present and complex problem, particularly for patients with a chronic illness. A rate of 50% has been attributed globally to chronic patients in both medical and psychiatric units. Although long-term treatment of pharmacotherapy is effective for chronic illnesses, their full benefits are often not realized because nearly 50% of patients do not take their medications as prescribed [11-13].

A systematic review of literature in USA on risk factors of medication non-adherence patients with schizophrenia showed that, rate of no adherence 41.2% and negative attitude toward medication, previous non-adherence, and shorter duration of illness, inadequate discharge planning and poorer therapeutic alliance were associated positively with non-adherence [14].

A study done at tertiary care Hospital in Pakistan on adult psychiatric patients revealed that, the prevalence of no adherence was around 39%. In this study, there is strong correlation between presence of a co-morbidity and non-adherence among the participants [8].

Other study done in Nigeria the prevalence of medication non-adherent was 48% and being employed, poor social support and perceived spiritual causation of mental illness were significant predictors of medication non adherent [15].

In Ethiopia, a study conducted at psychiatric facility of Jimma University Specialized Hospital (JUSH) the prevalence rate of medication non-adherence was found to be 41.2% as well as here also irregular follow-up, lack of family/social support and having complex drug regimen were the predictors of medication non-adherence [7].

On the other hand, a study done at Gondar hospital psychiatric clinic, the prevalence rate of non-adherence was 50.2%. Being from rural area and perceiving mediation is not required for their treatment were strongly associated with medication non adherence [16].

Regarding the prevalence of traditional treatment, a study conducted in Ethiopia at Addis Ababa Entoto St. Mary Church to assess the magnitude and associated factors of mental illness on holy water users among 416 participants, 60% were living with mental illness [17]. Also the other finding in Ethiopia at Agaro town to assess perceived cause of mental illness among 728 participants, significant proportion of people perceived as it is caused by super natural force and 21% and 19% of the participants were responds holy water is the treatment choice for epilepsy and schizophrenia respectively [18].

Furthermore, in Ethiopia regarding mental disorders and also many somatic disorders the commonly shared belief is that, it is caused by spirits or by other evil forces and accordingly there is a clear interaction between mental illness and spiritual as well as other cultural healing and people commonly use traditional treatment as a treatment modal of patients with mental illness as compared with developed countries [19]. Given these data, in Ethiopia there is no information on the level of medication non adherence among psychiatric patients in relation to use of traditional treatment. Therefore, this study aims to assess medication non-adherence, use of traditional treatments and factors which affect medication non-adherence among adult patients in Jimma town who have been treated at JUTH, psychiatry clinic.

Methods

Study design and setting

Community based cross-sectional study was conducted in Jimma town from April to June, 2016. Jimma town is capital city of Jimma zone which is found in Oromia regional state and located 352 km south west of Addis Ababa, the capital city of Ethiopia. The total population of Jimma town from 2007 central statistical agency [20] census is reported to be 120, 960 and with projection rate 4.7, it was estimated that in 2011 the total population to be around 144,369 [20]. The town has two hospitals; a general hospital and a University hospital. Psychiatric outpatient and inpatient services are available only at the University hospital. From the town, there were more than 1200 individuals who have ever follow-up treatment at psychiatric clinics. Out of these, 698 adults' patients (age ≥ 18) were registered or traced from medical registration office.

Population

The Source populations were residents of Jimma town age ≥18 years during the data collection period and have been treated for mental illness at psychiatric clinic of Jimma university teaching hospital. The study population was a sample of adult psychiatric patients' and residents of the town. Individuals with hearing impairment and cognitively impaired to consent were excluded from the study.

Sample size and sampling procedure

First, addresses {phone number, Kebeles (units)} of all adult psychiatric patients (n=698) who have follow-up and residents of the town were list out from medical registration office. Then the list of all these patients distributed to the health extension workers to trace their home using the registered address. To get study participants, tracing of individuals home in the community was applied by health extension workers in each kebeles (units) at Jimma town for all patients with mental illness who have been treated in Jimma university teaching hospital psychiatric clinic. Based on this, 304 individuals were traced across the town whereas the rest of patient couldn't be traced because of many reasons (changing residency place and kebeles, death and others) and individuals whose home were traced (n=304) or 44% of the adult psychiatric patient from the town became the final sample size of this study with the authors' censuses. After which, the data collectors invited all eligible psychiatric patients to participate in the study.

Instruments

All questionnaires were translated into local languages (Afan Oromo and Amharic) before data collection. Consistency was checked by a back-translation by another expert both in English and in local languages (Amharic and afan Oromo).

Outcome variable

Medication non adherence: It was measured using the self-reported, 4-item Morisky Medication adherence scale (MMAS), a commonly used, valid and reliable method. Answer is scored as 0 or 1; with score 1 corresponding to positive answers. The item scores obtained from the scale were summed to indicate an overall level of medication adherence. The MMAS scores range from zero to four and dichotomized into two to classify adherence levels in which being adherent-MMAS score of < 1 and with scores ≥ 2 was considered non-adherent with its reliability ranges 0.61-0.83 [7,21-23]. Its reliability in

this study was 0.79 Cronbach Alpha.

Explanatory variables

Demographic and socio-economic variables: Age, sex, marital status, ethnicity, religion, occupational status, educational, living condition and monthly household income.

Patients related factors

Types of diagnoses, duration of mental illness and treatment, history of treatment default and history of illness relapse were collected by reviewing patients chart and interviewing of the participants.

Traditional treatment related factors

In this study, it was defined by the sum total of the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the prevention, improvement or treatment of mental illnesses [24]. Based on this, Types of traditional treatment {Religious type (holy water, Quran, praying), Herbal medicine and Divine wizard}, Time to start traditional treatment (Before starting medication, After starting medication and both at the same time) and also Illness progress after starting traditional treatment(Better, Worsen and No change) were assessed as per the patients' response.

Social support

Oslo-3 item social support scale was used to assess level of social support of the individuals which is validated and considered the best predictor of mental health, covering different field of social support and its score ranged 3-14 by which a score of 3-8 poor support, 9-11 moderate support and 12-14 is strong support with its reliability across different study ranges 0.5-0.6 [25,26].

Data collection procedures

Data was collected by interviewing traced individuals. Two psychiatric nurses and four postgraduate students in integrated clinical and community mental health (ICCMH) had participated in data collection. Data collection was carried out after the questionnaires had been pretested at Jimma University Teaching Hospital on a sample of adult psychiatric patients who were receiving services and out of the study area. The pre-test results were not included in the final research report. Data collection was supervised by two mental Health professionals in addition to the principal investigator. The supervisor monitored data quality and checked all questionnaires for completeness.

Data processing and analysis

First, the data was checked for its consistency and completeness and entered into Epi-DATA software. After double data entry verification, data were exported to Statistical Package for Social Science (SPSS-version 20). Descriptive analysis was used to determine the prevalence and distribution of non-adherence and binary logistic regression was conducted to determine independent factors of non-adherence. Variables with P-value of less than 0.25 in bivariate analysis were further analyzed using a multivariable logistic regression to control confounders. In multivariable analysis, odd ratio was used to show the significance of the association by considering variables with p-value less than 0.05 as statically significant with 95% CI.

Ethical consideration

Ethical clearance was obtained from the ethical review board of Jimma University. Written informed consent was obtained from each of the participants prior to participation. Information obtained was kept confidential and anonymous during all stages of the study. Those who were identified to be non-adherent were linked to treating clinicians and psycho-education is given about medication on the spot (during data collection).

Results

Participants' characteristics

From total of 304 participants traced in the town, 300 individuals participated in the study with the response rate of 98.7%. Among these, 185 (61.7%) were males. The mean age of the respondents was 34.9 (+11.5) year with a maximum age of 80 year and minimum of 18 year. The majority 182 (60.7%) of the participants were single and follower of Islam 129 (43%) followed by Orthodox 121 (40.3%) religion. Oromo ethnicity constituted the largest proportion 145(48.3%), of the study subjects. Majority of 194 (64.7%) of the study participants were living with their family and 139 (46.3%) of the participants reported that they are jobless. Educational status of participants indicated that, 103 (34.3%) have attended primary school followed by 89 (29.7%) secondary school and 83 (27.7%) collage and above. Most of the participants, 138 (60.5%), were living with less than the average household monthly income based on the mean value of income of total participants (503 ETB).

Prevalence of medication non adherence and traditional treatment

The overall prevalence of medication non adherence of the total participants was 39.3% (n=118) while prevalence of traditional treatment was 66% (n=198).The percentages having non-adherence for males 42.7% (n=79) was greater than females 33.9% (n=39). Large proportion of respondents in age group of 18-20; 43.5% (n=10) and 21-30; 43.6% (n=44), single 44% (n=80) and divorced 36.4% (n=8) in marital status and living with family 40.2% (n=78) for living condition, had non adherent to medication. More than Hugh of respondents with occupational status of students 51.7% (n=15) were non adherent. Hugh of participants diagnosed with brief psychotic disorder 50% (n=10), having history of treatment default 51.1% (n=97), having relapse history 47.8% (n=97), duration of illness 5-10 years 45.3% (n=43) and duration of treatment 2-5 years 49.3% (n=36) were also non adherent to medication. Regarding the types of traditional treatment majority of the participants who were using both religious and herbal medicine 65.6% (n=21) were non adherent to prescribed medication. The pattern of medication non adherence upon social support showed that, as the strength of social support increases the prevalence of non-adherence decrease from 50.9% (n=28) to 35.9% (n=14) (Table 1).

Factors associated with medication non adherence in the bivariate analyses

In the bivariate analysis, medication non adherence was negatively associated with female gender, being married, living with family, merchants and housewives in occupation, no history of treatment default and relapse, duration of treatment >10 years and social support. However, living alone, being a student, having brief psychotic illness, duration of treatment 2-5 years and 5-10 years, religion, religious traditional treatment and both religious and herbal types of traditional treatment were positively associated with medication non adherence (Table 2).

Factors associated with medication non adherence in the multivariable analysis

Variables	Category	Frequency	Percent (%)
Age	18-20 21-30 31-40 >40	23 101 108 68	7.7 33.7 36.0 22.7
Sex	Male Female	185 115	61.7 38.3
Marital status	Single Married Divorced Others*[a]	182 80 22 16	60.7 26.7 7.3 5.3
Religion	Muslim Orthodox Protestant and others*[b]	129 121 50	43.0 40.3 16.7
Ethnicity	Oromo Amhara Dawuro Gurage Others*[c]	145 75 28 39 13	48.3 25.0 9.3 13.0 4.3
Living condition	With family Alone With relatives With wife and kids Others*[d]	194 17 13 58 18	64.7 5.7 4.3 19.3 6.0
Occupation	Jobless Employed Merchant Student Daily laborer House wife other*[e]	139 54 26 29 16 23 13	46.3 18.0 8.7 9.7 5.3 7.7 4.3
Educational status	Has no formal education Primary Secondary College and above	25 103 89 83	8.3 34.3 29.7 27.7
Monthly income	Below average Above average	228 72	76.0 24.0

Note: *[a] separated and widowed, *[b] Catholics and wakifeta, *[c] Kefa and Tigre,*[d] living on street and alone and with friends,*[e] retired and both daily laborer and student

Table 1: Socio-demographic and economic characteristics of psychiatric patients in Jimma town who have been treated at Jimma University teaching hospital psychiatric clinic, Jimma, South West Ethiopia, 2016 (n=300).

Variables	Category	Non-adherence No (%)	Adherence No (%)	COR(95 %C.I)	p-value
Age	18-20 21-30 31-40 >40	10(43.5) 44(43.6) 37(34.3) 27(39.7)	13(56.5) 57(56.4) 71(65.7) 41(60.3)	1.168(0.449, 3.041) 1.172(0.627, 2.190) 0.791(0.422, 1.482) 1.00	0.750 0.618 0.465
Sex	Male Female	79(42.7) 39(33.9)	106(57.3) 76(66.1)	1.00 0.689(0.425, 1.117)	0.130*
Marital status	Single Married Divorced Others	80(44.0) 24(30.0) 8(36.4) 6(37.5)	102(56.0) 56(70.0) 14(63.6) 10(62.5)	1.00 0.546(0.312, 0.957) 0.729(0.291, 1.822) 0.765(0.267, 2.194)	0.035* 0.498 0.618
Religion	Muslim Orthodox Protestant and others	42(32.6) 55(45.5) 21(42.0)	87(67.4) 66(54.5) 29(58.0)	1.00 1.736(1.033, 2.885) 1.500(0.766, 2.936)	0.037* 0.237
Ethnicity	Oromo Amhara Dawuro Gurage Others	60(41.4) 34(45.3) 12(42.9) 7(17.9) 5(1.7)	85(58.6) 41(54.7) 16(57.1) 32(82.1) 8(61.5)	1.00 1.175(0.670, 2.061) 1.063(0.469, 2.408) 0.310(0.128, 0.749) 0.885(0.276, 2.839)	0.574 0.885 0.309 0.838
Living condition	With father and mother Alone With relatives With family Others	78(40.2) 10(58.8) 6(46.2) 16(27.6) 8(44.4)	116(59.8) 7(41.2) 7(53.8) 42(72.4) 10(55.6)	1.00 2.125(0.776, 5.819) 1.275(0.413, 3.936) 0.567(0.298, 1.078) 1.190(0.450, 3.148)	0.143* 0.673 0.083* 0.726

Occupation	Jobless	52(37.4)	87(62.6)	1.00	
	Employed	25(46.3)	29(53.7)	1.442(0.764, 2.724)	0.259
	Merchant	5(19.2)	21(80.8)	0.398(0.142, 1.120)	0.081*
	Student	15(51.7)	14(48.3)	1.793(0.801, 4.011)	0.155*
	Daily laborer	8(50.0)	8(50.0)	1.673(0.592, 4.726)	0.331
	House wife	5(21.7)	18(78.3)	0.465(0.163, 1.326)	0.152*
	other	8(61.5)	5(38.5)	2.677(0.832, 8.616)	0.099*
Educational status	Has no formal education	11(44.0)	14(56.0)	1.00	
	Primary school	39(37.9)	64(62.1)	0.776(0.320, 1.878)	0.573
	Secondary school	30(33.7)	59(66.3)	0.645(0.262, 1.598)	0.345
	College and above	38(45.8)	45(54.2)	1.075(0.437, 2.644)	0.875
Monthly income	Below average	90(39.5)	138(60.5)	1.00	
	Above average	28(38.9)	44(61.1)	0.976(0.567, 1.680)	0.928
Types of illness	Schizophrenia	34(35.4)	62(64.6)	1.00	
	MDD	29(39.7)	44(60.3)	1.202(0.641, 2.253)	0.566
	Bipolar disorder	22(37.9)	36(62.1)	1.114(0.567, 2.190)	0.753
	Brief psychotic	10(50.0)	10(50.0)	1.824(0.690, 4.816)	0.225*
	Others	23(43.4)	30(56.6)	1.398(0.704, 2.775)	0.338
Relapse	Yes	97(47.8)	106(52.2)	1.00	
	No	21(21.6)	76(78.4)	0.302(0.173, 0.527)	0.000*
Treatment default	Yes	97(51.1)	93(49.9)	1.00	
	No	21(19.1)	89(80.9)	0.226(0.130, 0.394)	0.000*
Duration of illness	≤ 2 years	12(30.0)	28(70.0)	1.00	
	2-5 years	38(45.2)	46(54.8)	1.928(0.865, 4.295)	0.108*
	5-10 years	43(45.3)	52(54.7)	1.929(0.878, 4.242)	0.102*
	>10 years	25(30.9)	56(69.1)	1.042(0.457, 2.375)	0.923
Duration of treatment	≤ 2 years	44(41.1)	63(58.9)	1.00	
	2-5 years	36(49.3)	37(50.7)	1.397(0.765, 2.536)	0.278
	5-10 years	27(37.5)	45(62.5)	0.859(0.465, 1.586)	0.671
	>10 years	11(22.9)	37(77.1)	0.426(0.196, 0.924)	0.031*
Traditional treatments	Not user	25(24.5)	77(75.5)	1.00	
	Religious type	55(44.7)	68(55.3)	2.364(1.337, 4.180)	0.003*
	Herbal medicine	8(29.6)	19(70.4)	1.231(0.482, 3.164)	0.665
	Both religious and herbal	21(65.6)	11(34.4)	5.580(2.374, 13.117)	0.000*
	others	8(50.0)	8(50.0)	2.293(0.996, 8.577)	0.051*
Time to start	Not user	25(24.5)	77(75.5)	1.00	
	Before starting modern Rx	53(43.1)	70(56.9)	1.562(0.621,2.123	0.542
	After starting modern Rx	20(45.5)	24(54.5)	1.101(0.551, 2.200)	0.786
	Both at same time	19(61.3)	12(38.7)	1.091(0.534, 4.682)	0.473
Illness Progress	Not user	25(24.5)	77(75.5)	1.00	
	Better	30(39.5)	46(60.5)	1.341(0.671,2.56)	0.321
	Worsen	23(57.5)	17(42.5)	1.475(0.953, 3.514)	0.266
	No change	39(47.6)	43(52.4)	1.391(0.739, 2.616)	0.306
Social support	Poor	14(35.9)	25(64.1)	0.540(0.233, 1.252)	0.151*
	Moderate	76(36.9)	130(63.1)	0.564(0.309, 1.037)	0.061*
	Strong	28(50.9)	27(49.1)	1.00	

Note: Other types of illness-schizoaffective, scizophreniform, delusional disorders and anxiety disorders other traditional treatment- divine wizards and both herbal and divine wizard, *Variables p-value<0.25, 1.00- reference

Table 2: Bivariate logistic regression of variables with adherence status among adult psychiatric out patients in Jimma town who have been treated at Jimma University teaching hospital psychiatric clinic, Jimma, South West Ethiopia, 2016.

Result from multivariable logistic regression model showed that, medication non adherence associated negatively with duration of treatment >10 and absence of history of relapse and treatment default whereas using both religious and herbal medicine traditional treatment was associated positively with medication non adherence. Therefore, participants having duration of treatment >10 years were 62.5% times less likely to be non-adherent than with the duration of treatment < 2 years [AOR=0.375, 95% C.I (0.155, 0.908)]. The odds of non-adherence among participants who had no relapse history was reduced by 63.5% as compared with who had relapse history [AOR=0.365, 95% C.I (0.190, 0.702)]. Those who had no history of treatment default were 72.1% times less likely to be non-adherent comparing with counterparts, [AOR 0.279, 95% C.I (0.150, 0.517)]. Patients who were users of both religious and herbal types of traditional treatments were 3.763 times more likely to be non-adherent than who were not users at all [AOR=3.763, 95% C.I (1.459, 9.707)] (Table 3).

Discussion

In this study among 300 study participants 39.3% were non adherent to the prescribed medication and the prevalence of traditional treatment was 66%. Duration of treatment >10 year, absence of relapse history, absence of treatment default and being users of both religious and herbal medicine traditional treatment were factors which were significantly associated with medication non adherence. The prevalence of medication non adherence in this study was similar or in line with the study done in Ethiopia at Jimma university teaching hospital psychiatric clinic 41.2% [7], Pakistan 39% [8] and USA from different literature review 41% [14]. Magnitude of non-adherence in this study was similar with other most study findings. However, prevalence of non-adherence in this study was much lower than the study done in Ethiopia at university of Gondar hospital psychiatric clinic which was 50.2% [16]. Such differences might be related to differences in the

Variables	Category	Non adherent No (%)	Adherent No (%)	AOR (95% C.I)	p-value
Duration of treatments	≤ 2 year	44(41.1)	63(58.9)	1.00	1.00
	2-5 years	36(49.3)	37(50.7)	1.316(0.638, 2.712)	0.457
	5-10 years	27(37.5)	45(62.5)	0.517(0.247, 1.081)	0.079
	>10 years	11(22.9)	37(77.1)	0.375(0.155, 0.908)	0.030**
Relapse	Yes	97(47.8)	106(52.2)	1.00	1.00
	No	21(21.6)	76(78.4)	0.365(0.190, 0.702)	0.003**
Hx of Rx default	Yes	97(51.1)	93(49.9)	1.00	1.00
	No	21(19.1)	89(80.9)	0.279(0.150, 0.517)	0.000**
Traditional treatment	Not users	25(24.5)	77(75.5)	1.00	1.00
	Religious type	55(44.7)	68(55.3)	1.764(0.947, 3.287)	0.074
	Herbal	8(29.6)	19(70.4)	0.920(0.332, 2.549)	0.872
	Both R&H	21(65.6)	11(34.4)	3.763(1.459, 9.707)	0.006**
	Others*o	8(50.0)	8(50.0)	2.113(0.642, 6.953)	0.218

Note: **Statistically significant at P-value <0.05, 1.00= Reference, R-religious, H- herbal medicine, *o= divine wizard and both divine wizard herbal medicine

Table 3: Multivariable logistic regression showing predictors of medication non-adherence among adult Psychiatric patients in Jimma town who have been treated at Jimma University teaching hospital psychiatric clinic, Jimma, south west Ethiopia, 2016.

methodology and the tools used to assess medication non adherence which was self-reported medication adherence rating scale (MARS) non adherent prevalence in the present study was also lower than the study reported in Nigeria 48% [15]. This difference might be, in this study most of the participants had moderate or strong social support which could make them to be adherent to the prescribed medication based on Oslo social support scale whereas in Nigeria majority of the participants were with low social support which was significantly affects medication non adherence there. As well as, even if the current scale used to assess medication non adherence used at different place in Ethiopia, still it is not validated.

Over all, a great number of different methods and instruments have been proposed to assess medication non adherence, and this may be responsible for the difference in the rate of non-adherence among different studies. The prevalence of traditional treatment in this study was 66% and majority of them were users of religious type of traditional treatment. Accordingly, this study is in line with or supported by the study done in Sweden by which, in Ethiopia regarding mental disorders and also many somatic disorders the commonly shared belief is that they are caused by spirits or by other evil forces and accordingly, there is a clear interaction between mental illness and spiritual as well as cultural healing as compared with developed countries [19]. This study is also consistent with study done in Ethiopia at Addis Ababa Entoto St. Mary Church in which most people among holy water users (60%) were living with mental illness [17].

Among different psychiatric illnesses, patients with brief psychotic disorder were more likely non adherent. This could be the nature of the illness by itself is shorter in duration and supported by the study done in USA which explains, shorter duration of the illness was predictor for medication non adherence [14]. Patients suffering from major depressive disorders (39.7%) were non adherent similar with the study done in Pakistan [8], followed by those suffering from bipolar disorder (37.9%) and those suffering from schizophrenia disorders (11.3%). In this study participants who had no history of relapse and treatment default were less likely to be non-adherent with the medication. This is supported by standard book explanations psychotropic medication has well demonstrated and documented number of side effects which leads patients for treatment default and further for illness relapse results non adherent for prescribed medication [1,27]. It is consistent also with the study done in USA among different literature review previous non adherence or treatment default significantly affects medication non adherence in the future [14]. This might be also those patients who had no history of illness relapse and treatment default may have better knowledge about the illness and benefits of medication adherence given from their health professionals so that they can understand the nature of illness easily as well as those of patient who had treatment default and illness relapse might be non-adherent due to preferring traditional treatments rather than the prescribed medication according to the current study.

Participants having > 10 years duration of treatment were less likely to be non-adherent as compared with their counterparts (≤ 2 year duration of treatment). Study in USA from different literature review reveals, shorter duration of illness is determinant factor to be non-adherent for psychotropic medication [14]. Depending on this, longer duration of illness leads longer duration of treatment as a result patient become adherent to medication. This might also happen because patients might develop better knowledge about their illness nature and understand the benefit of prescribed medication through time in the course of their treatment.

Participants who were users of both religious and herbal medicine traditional treatment have been significantly associated or more likely to be medication non adherent. This is in agreement with the study done in Ethiopia at Agaro a significant number of people implicated supernatural powers (God well or sprit) as causing mental health problems leads to perceive them holy water is the treatment choice for mental illness [18]. This is also consistent with the study done in Sweden that is mostly mental health problems in Ethiopia is perceived as it caused by different sprits so that it is dealt by different religious and traditional healers and it is supported by study done in Nigeria perceived spiritual causation of mental illness was strongly associated with medication non-adherence [15,19], which might made patients to prefer using traditional treatment and became non adherent for their prescribed medication. On the other hand majority of participants had history of treatment default and illness relapse which were significantly affects medication non adherence in this study as a result; patients might perceive medication is not curable for their illness and preferring to take traditional treatments as an alternative so that it might face them to become non-adherent to Biological mode of treatment. There are limitations in this study. Firstly, the reported non-adherence could be an underestimate of the reality as there may be a recall bias associated with self-reporting of medication adherence. In addition there may be social desirability bias as the setting of data collection was in the community and data collectors were mental health professionals. Secondly, cause-effect relationships cannot be established because of cross-sectional nature of the study design. However, the finding gives important information for understanding the magnitude and potential factors

affecting non adherence to psychotropic medications particularly in relation to traditional treatments.

Conclusion

High prevalence of medication non adherence was found and significant proportions of the participants were users of traditional treatment and among the user most of the participants were users of religious types (holly water, Quran, praying...). Patients who had history of relapse and treatment default, duration of treatment (>10 year) and users of both religious and herbal medicine traditional treatment were significantly associated with medication non adherence. Given that traditional treatments are acceptable in both the government and people, it could be a barrier for biological mode of treatment patients with mental illness. Therefore, health professionals and traditional treatment givers need to work cooperatively to decrease non adherence for medication and counseling service should be encouraged more regarding the effect of non-adherence on clinical outcome and vice versa.

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Availability of Data and Materials

All the data included in the manuscript has been included in the form of tables. The de-identified raw data is not publicly available. But the de-identified raw data can be requested from the corresponding author after providing the necessary justification for request.

Authors' Contributions

The analysis is conceived and performed and drafted by BM and HK. MA and WT assisted the analysis and interpretation of the data. MT, DT, MS, EY, AM, HH, LA, BD, and EA participate during protocol development, designing of the study and monitoring of the data collection. All author critically reviewed the manuscript. MT and HK also reviewed the manuscript after reviewers' comments. All Authors have read and approved the final version of the manuscript. BM is responsible for manuscript submission.

Competing Interests

The authors declare that they have no competing interests.

Consent for Publication

Not applicable.

References

1. Demoz Z, Legesse B, Teklay G, Demeke B, Eyob T, et al. (2014) Medication adherence and its determinants among psychiatric patients in an Ethiopian referral hospital. Patient Prefer Adherence 8: 1329-1335.
2. Pareek B, Kalia R (2013) Factors affecting non-compliance to psychotropic drugs of patients with psychosis as perceived by their family members attending the psychiatric outpatient department at selected hospital, Mangalore. Nurs Midwifery Res J 9: 56-62.
3. Osterberg L, Blaschke T (2005) Adherence to medication. NEJM 353: 487-497.
4. Valenstein M, Blow FC, Copeland LA, McCarthy JF, Zeber JE, et al. (2004) Poor antipsychotic adherence among patients with schizophrenia: medication and patient factors. Schizophr Bull 30: 255-264.
5. Alene M, Wiese MD, Angamo MT, Bajorek BV, Yesuf EA, et al. (2012) Adherence to medication for the treatment of psychosis: rates and risk factors in an Ethiopian population. BMC Clin Pharmacol 12: 10.
6. Cramer JA, Rosenheck R (1998) Compliance with medication regimens for mental and physical disorders. Psychiatr Serv 49: 196-201.
7. Tesfay K, Girma E, Negash A, Tesfaye M, Dehning S (2013) Medication non-adherence among adult psychiatric out-patients in Jimma University Specialized Hospital, Southwest Ethiopia. Ethiop J Health Sci 23: 227-236.
8. Taj F, Tanwir M, Aly Z, Khowajah AA, Tariq A, et al. (2008) Factors associated with non-adherence among psychiatric patients at a tertiary care hospital, Karachi, Pakistan: A questionnaire based cross-sectional study. J Pak Med Assoc 58: 434-436.
9. Roy R, Jahan M, Kumari S, Chakraborty P (2005) Reasons for drug non-compliance of psychiatric patients: A center based study. J Indian Acad Appl Psychol 31: 24-28.
10. Sajatovic M, Valenstein M, Blow F, Ganoczy D, Ignacio R (2007) Treatment adherence with lithium and anticonvulsant medications among patients with bipolar disorder. Psychiatric Serv 58: 855-863.
11. Vermeire E, Hearnshaw H, Van Royen P, Denekens J (2001) Patient adherence to treatment: three decades of research: A comprehensive review. J Clin Pharm Ther 26: 331-342.
12. Young JL, Zonana HV, Shepler L (1986) Medication noncompliance in schizophrenia: codification and update. Bull Am Acad Psychiatry Law 14: 105-122.
13. Brown MT, Bussell JK (2011) Medication adherence: WHO cares? Mayo Clinic Proceedings Elsevier.
14. Lacro JP, Dunn LB, Dolder CR, Leckband SG, Jeste DV (2002) Prevalence of and risk factors for medication non-adherence in patients with schizophrenia: A comprehensive review of recent literature. J Clin Psychiatry 63: 892-909.
15. Adewuya AO, Owoeye OA, Erinfolami AR, Coker AO, Ogun OC, et al. (2009) Prevalence and correlates of poor medication adherence amongst psychiatric outpatients in southwestern Nigeria. Gen Hosp Psychiatry 31: 167-174.
16. Endale Gurmu A, Abdela E, Allele B, Cheru E, Amogne B (2014) Rate of non-adherence to antipsychotic medications and factors leading to non-adherence among psychiatric patients in Gondar University Hospital, Northwest Ethiopia. Adv Psychiatry 2014: 475812.
17. Fekadu W, Mulat H, Haile K, Mehretie Y, Mekonen T (2015) Magnitude of Mental illness and associated factors among holy water users at Entoto St. Mary Church, Addis Ababa, Ethiopia, 2014. J Psychiatry 18: 1-5.
18. Deribew A, Tamirat YS (2005) How are mental health problems perceived by a community in Agaro town? Ethiop J Health Dev 19: 153-159.
19. Jacobsson L (2002) Traditional treatment of mental and psychosomatic disorders in Ethiopia. International Congress Series Elsevier.
20. Ababa A (2008) Summary and statistical report of the 2007 population and housing census. Federal democratic republic of Ethiopia population census commission, Ethiopia. pp: 1-10.
21. Tan X, Patel I, Chang J (2014) Review of the four item Morisky medication Adherence Scale (MMAS-4) and eight item Morisky medication Adherence Scale (MMAS-8). University of Minnesota, College of Pharmacy, Minnesota.
22. Bates JA, Whitehead R, Bolge SC, Kim E (2010) Correlates of medication adherence among patients with bipolar disorder: results of the bipolar evaluation of satisfaction and tolerability (BEST) study: A nationwide cross-sectional survey. Prim Care Companion J Clinical Psychiatry 12.
23. Morisky DE, Green LW, Levine DM (1986) Concurrent and predictive validity of a self-reported measure of medication adherence. Med Care 24: 67-74.
24. Kassaye KD, Amberbir A, Getachew B, Mussema Y (2006) A historical overview of traditional medicine practices and policy in Ethiopia. Ethiop J Health Dev 20: 127-134.
25. Abiola T, Udofia O, Zakari M (2013) Psychometric properties of the 3-item oslo social support scale among clinical students of Bayero University Kano, Nigeria. Malaysian Journal of Psychiatry 22: 32-41.
26. Bøen H, Dalgard OS, Bjertness E (2012) The importance of social support in the associations between psychological distress and somatic health problems and socio-economic factors among older adults living at home: a cross sectional study. BMC Geriatrics 12: 27.
27. Koocher GP, Norcross JC, Greene BA (2013) Psychologists' desk reference. Oxford University Press, UK.