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Magnitude Of Medication Adherence And Associated Factors Among Epileptic Patients On Treatment In Bahir Dar City Administration Public Hospitals

Agegnehu c), Merawi (Bs

ANNEX 6 DECLARATION FORM

I the under signed declared that this is my original work that has been never presented in this or any other university and that all the resources and materials used for the research have been fully acknowledged.

Investigator name: Afeshelm meraui

Signature:

Date: 17/07/2023

Mock Defense Evaluators Name: Dr. Kholie Fentaw

Signature: for

Date: 17/07/2023

Advisors Name: for

Signature:

Date: 17/07/2023

Advisors Name: Tare Akuma

Signature:

Date: 17/07/2023

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Head,Department of Epidemiology
And Biostatistics

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BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCE

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS

MAGNITUDE OF MEDICATION ADHERENCE AND ASSOCIATED FACTORS AMONG EPILEPTIC PATIENTS ON TREATMENT IN BAHIR DAR CITY ADMINISTRATION PUBLIC HOSPITALS, BAHIR-DAR, NORTHWEST ETHIOPIA

AGEGNEHU MERAWI (BSC)

ADVISORS:

1. KASSAWMAR ANGAW (MPH IN EPIDEMIOLOGY, ASSISTANT PROFESSOR)
2. TAYE ABUHAY (MSC IN BIOSTATISTIC, ASSISTANT PROFESSOR)

A THESIS SUBMITTED TO THE DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS, SCHOOL OF PUBLIC HEALTH, COLLEGE OF MEDICINE AND HEALTH SCIENCES, BAHIR DAR UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH IN EPIDEMILOGY

JUNE, 2023

BAHIR DAR, ETHIOPIA

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INVESTIGATORS: AGEGNEHU MERAWI
Email: agegnehumerawi@gmail.com
ADVISORES:
1. KASSAWMAR ANGAW (MPH, Assistant Prof.)
Email: kassawmarangaw@gmail.com
2. TAYE ABUHAY (MSC, Assistant Prof)
Email: tabu0918@gmail.com

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ABSTRACT

Background: Despite adherence is the primary element of the effectiveness and performing lifestyle change follows agreed recommendations from a health-care provider; in developing countries, adherence of patients with chronic diseases is lower than fifty percent and without a renewed commitment to this important issue enough progress is not achieved. Thus the present study aims to assess the magnitude of medication adherence and associated factors among epileptic patients in Bahir Dar city public hospitals.

Objective: To assess medication adherence and associated factors among Epileptic patients on treatment in Bahir Dar city administration public hospitals, north west Ethiopia, 2023.

Methods: Institution based cross - sectional study was conducted from March 1 to 30/2023 among 396 epileptic patients. Systematic random sampling technique was carried out. Data was collected with standardized structured questionnaire and finally the data was entered using EPI-data software version 3.1 and exported to SPSS version 23 for analysis. The result was presented using tables, figures, and texts. Bivariable and Multivariable logistic regressions were conducted to obtain significant variables.

Results: Adherence level to epilepsy medication was 45.5 %(95%CI: 41%, 50%). Sex, residence, education, monthly income and occupation of participants were significantly associated with adherence to epilepsy medication in this study.

Conclusion: Level of adherence to antiepileptic medications among epileptic patients in Bahir Dar City Public Hospitals was below the standard of adherence level. Hence support from different stakeholders and health professionals should focus on strong health education provision for epileptic patients and their family members in order to stay adherent to the medication intake.

Key Words: Epilepsy, Medication Adherence, Bahir Dar

ABBREVIATIONS AND ACRONYMS

ACDS..... Adherence in Chronic Diseases Scale

AED ..... Anti-Epileptic Drugs

AOR ..... Adjusted Odds Ratio

BC .....Before Christ

CI .....Confidence Interval

SD ..... Standard Deviation

Dr's .....Doctor's

SSA …… Sub Saharan Africa

SUDEP ……. Sudden Unexpected Death in Epilepsy

DALY……. Disability-Adjusted Life-Year

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1. INTRODUCTION

1.1. Background

Epilepsy is a condition of the brain described by a lasting tendency to generate epileptic seizures and by the neurobiological, cognitive, psychological, and social consequences of this disorder and it can affect peoples of all ages (1-3).There are four types of epilepsy which includes: Focal, Generalized, Combined Generalized and Focal and Unknown(4-7). In early periods, epilepsy was connected with religious involvements and demonic or divine control. It was extensively described in the fifth century before Christ (BC) by Hippocrates. Epileptic seizures were understood to be a form of attack by demons or that the visualizations experienced by patients were messages from the spirits(8); It can be caused by genetic factors, systemic factors, environmental factors, autoimmune, infectious, metabolic and unknown causes (9-13) . Epilepsy is manifested by developmental delay, involuntary movements (14). Epilepsy is still an important cause of disability and mortality globally(15). Medications are essential to persons with epilepsy. It control seizures and becomes a routine part of their routine lives (16).Medication adherence is defined as the degree to which patients take medication as prescribed by their doctors and it occurs when a patient takes their medications according to the prescribed dosage, time, frequency, and direction(17) and adherence to epilepsy medication is defined as the degree to which patients follow the agreed instructions given by the prescribers and persistence in a regimen of treatment epilepsy such as the duration of initiation for discontinuation of therapy(18).

Non-adherence can be defined as inappropriate dosage, forgetfulness, or withdrawn medication (19) result in major worsening of disease, increasing treatment failure, morbidity, mortality, health care costs, time of hospitalization, load of inpatient and emergency department services and it also affects the family members socially, economically, and psychologically (20, 21). Thus the current study aims to determine the status of medication adherence to epilepsy and its associated factors in Bahir Dar city public hospitals.

1.2. Statement of the problem

Despite 60% to 70% of people living with epilepsy could live seizure free if properly diagnosed and treated with anti-seizure medication (ASM) and considered as the backbone treatment for epilepsy; 75% to 90% of epilepsy patients have insufficient treatment for their illness especially in low and middle-income countries. Even if more than 95% standard adherence is necessary to adequately suppress the epileptic seizures; (22, 23) and more than 30% of people with epilepsy do not achieve full seizure control even with the best accessible treatment regimen(24). Different studies showed that the level of medication adherence ranges from 16.38 to 81% (25, 26).Globally epilepsy enforces a major disease burden and accounts for more than 10 million disability-adjusted life-year (DALY (15, 27).Patients with epilepsy are three times higher risk for premature mortality than the general population(23). Studies show that each year about 1.16 cases of sudden unexpected death in epilepsy (SUDEP) for every 1,000 people with epilepsy were observed (28). Around 80% of epileptic patients live in poor countries, reaching from 5 to 12 million in Sub Saharan Africa (SSA)(15, 29, 30) and risk of premature death among people with epilepsy is 3 times or more higher than in the overall population and even higher in SSA(31) and also more than one- third of all epilepsy-related deaths occur in SSA(32). The possible factors that affect medication adherence to epilepsy could be socio demographic factors, health care system related factors, disease and patient related factors and treatment related factors (33-36). Therefore those factors that contribute for good medication adherence to epilepsy as well as those factors contribute for poor adherence to epilepsy medication service in Ethiopia, Amhara and particularly Bahir Dar city public hospitals should be identified and interpreted using research findings to plan to act on them for future best performance.

1.3. Significance of the study

In low income countries including Ethiopia, epilepsy is public health important disease .however our health system pay less attention. As result access to epilepsy medication and treatment is relatively low. In Ethiopia, a little research articles have been done regarding epilepsy and no research have been done in the present study setting.

To improve the health service related epilepsy, evidence-based decision making would be a crucial. Therefore the current study finding would play significant role to make evidence-based decision. Furthermore the finding of the current study would be the baseline for future researchers regarding this particular research question. In addition the findings of study would help as an input to hospital administrators to improve epilepsy health care services.

2. Literature review

2.1. Level of Adherence to Anti-epileptic medication

Study conducted in drug adherence to epilepsy at the Uttar Pradesh University of Medical Sciences in a rural and remote area of Etawah district India, Patients attending the Neuro Spinal Hospital in United Arab Emirates and Military General Hospital of Beijing People's liberation Army China shows that 43% , 70.8% and 51.9 % of patients on anti-epileptic medication have good adherence to treatment respectively(37-39).Level epilepsy medication adherence studies showed 17.2% in four tertiary healthcare facilities located in three of the geopolitical zones of Nigeria and 65% from three major tertiary centers (Omdurman Teaching Hospital, Altigani Almahi Psychiatry H ospital, and the national center for neurology and neurosurgery in Khartoum)Sudan (40, 41). A Meta-analysis studies conducted in Ethiopia shows that level of adherence has wide variation from study to study ranging from 21% to 74% (42). Another meta-analysis study conducted in Ethiopia, Yirgalem general hospital, Southern Ethiopia on epilepsy medication adherence shows 60.33%, 58.04% and 32% (42-44). Study conducted in pediatric neurology referral clinic of Hawassa University Comprehensive Specialized Hospital Southern Ethiopia shows that 65 % of patients were adherent to treatment (45). Another study conducted in ambulatory epileptic patients in southern Ethiopia shows that 59.73% of patients under treatment were adhere to medication(46). Study conducted in Ethiopia shows that medication adherence to epilepsy is in Amanuel mental specialized hospital, Ayder hospital in all epilepsy patients, pediatric neurologic chronic outpatient department (OPD) clinic of UoGCSH ,Northwest Ethiopia 16.38%, 34.6%,77.8% respectively (47-49). Another studies conducted in Hawassa, Adama medical college hospital and Jimma shows that adherence to epilepsy medication is 81 %, 67.3% and 78.6% respectively (25, 36, 50).

A study conducted in Amhara region particularly in Dessie town public hospitals, university of Gondar referral hospital, Debre markose referral hospital and finote selam hospital shows adherence to epilepsy drug adherence were 62.5%, 61.5%,62.2 % respectively (51-53).

2.2. Factors associated with adherence to anti-epilepsy treatment

2.2.1. Socio demographic factors

Studies conducted on community-based study of epilepsy in one UK health region in Liverpool, neurology clinic of a tertiary care setting in Malaysia and Indonesia showed that age is significantly associated with medication adherence to epilepsy patient (34, 54, 55). A study conducted in Brazil approved by the institutional review board showed men have low adherence to medication to epilepsy as compared to women(56). On the other hand studies conducted in India showed, sex is not significantly associated with level of adherence (57). Another study conducted in Neurology Referral Clinic in Adama Hospital Medical College, Ethiopia showed that women are adhere to medication than men(36). A study conducted in china, on factors associated with medication adherence in epilepsy patients' shows stable marital status is significantly associated with medication adherence to epilepsy(35) and another study conducted in china also shows unmarried groups are significantly associated with medication adherence compared with married once(58). Study conducted in Germany (59) and Switzerland on factors associated with medication adherence shows that place of residence is significantly associated with medication adherence and those urban residence have more adherence compared to rural (60). Studies conducted in Indonesia, India, Nigeria and Yirgalem General Hospital, Southern Ethiopia on factors associated with epilepsy medication adherence shows that level of education is significantly associated with level of adherence to epilepsy medication adherence (44, 55, 61, 62).

2.2.2 Health care system related factors

A study conducted in Indonesia shows that belief in health care provider is significantly associated with adherence to epileptic medication(55). Another study conducted in Malaysia shows that access to pharmacy services was significantly associated with adherence to epilepsy medication(63). A systemic review and meta-analysis study conducted in china shows that support from healthcare providers is significantly associated with adherence to medication in epileptic patients on treatment (35).

2.2.3. Type Epilepsy and other conditions

Studies conducted in India, China and Ethiopia showed that patients with focal epilepsy and those from the middle/lower-middle socioeconomic classes highly associated to good adherence whereas forgetfulness were associated with non-adherence to epilepsy medication (39, 44, 57). AED adherence was associated with socioeconomic status, forgetfulness and type of epilepsy; patients with focal epilepsy and those from the middle/lower-middle socioeconomic classes were less likely to be non-adherent(57). Studies conducted in India shows that severity of seizure; medication frequency and complexity of treatment were found to have significant association with the Anti-Epileptic Drugs (AED) adherence status(64).

Depressive symptoms, presence or absence of co-morbidity, anxiety symptoms, being single, presence of seizure per month and antiepileptic drug adverse effect were factors associated with anti-epileptic medication adherence(26, 44).

2.2.4. Treatment Related Factors

A study conducted Aksum university, Ayder comprehensive specialized hospital shows that a negative medication belief is significantly associated with epilepsy medication adherence(49, 65). A study conducted in epilepsy in Jos, Nigeria and Sudanese individuals with epilepsy shows that epilepsy medication adherence is associated with medication side effects(41, 66). Study conducted in Yirgalem general hospital shows that medication adherence in epileptic patients are associated with duration of treatment(44).

2.3. Conceptual frame work

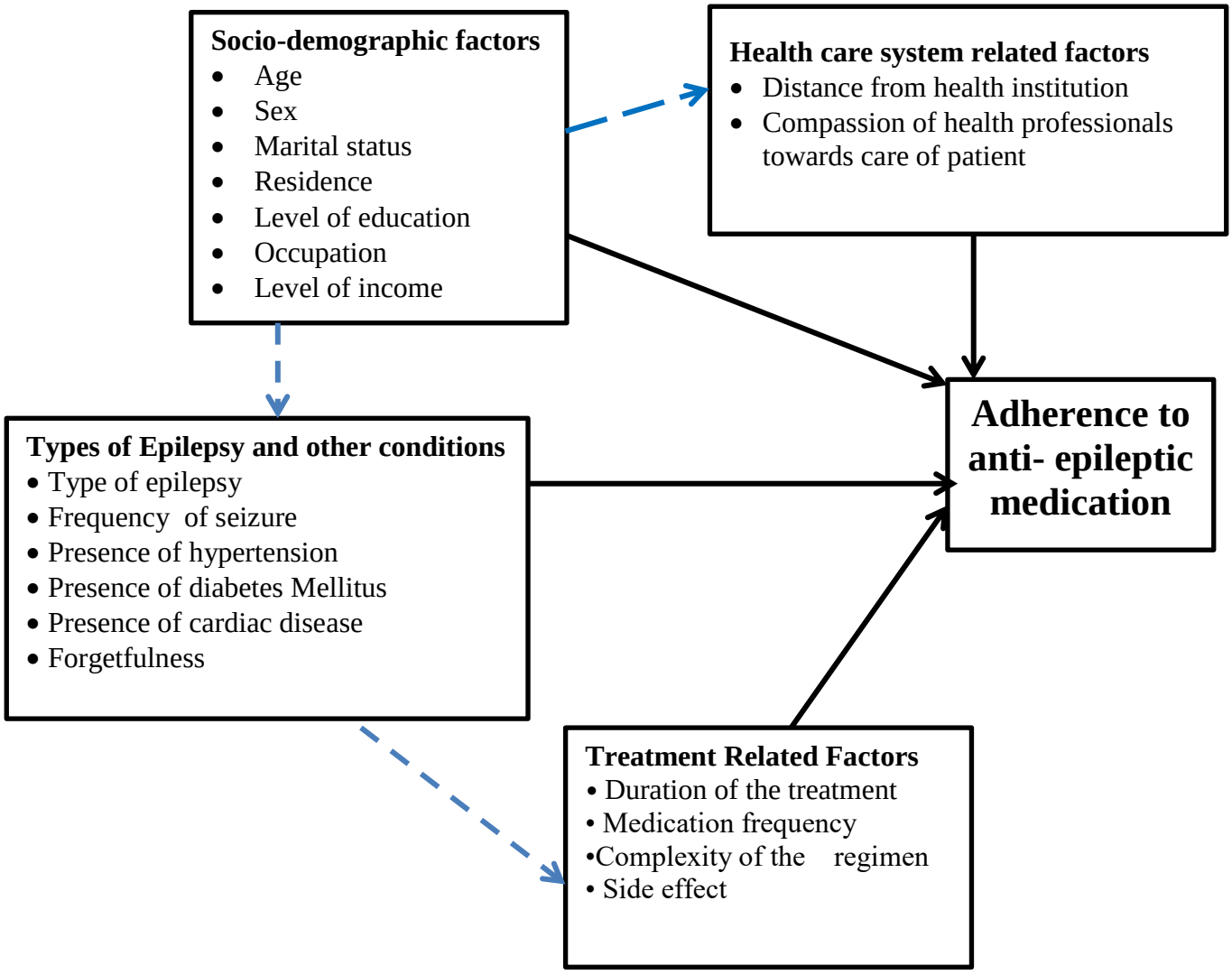

Figure 1: Conceptual frame work prepared from Literature review showing the proposed relationship between the independent variable and dependent variable (adherence to anti-epileptic medication)(20, 44, 51, 55, 57, 64, 67).

3. OBJECTIVE

3.1. General objective

Magnitude of medication adherence and its associated factors among Epileptic patients in Bahir Dar city public hospitals, North West Ethiopia, 2023.

3.2. Specific objective

- To determine level of medication adherence of epileptic patients
- To identify factors associated with epileptic patients medication adherence

4. METHODS AND MATERIALS

4.1. Study design and period

Institution based cross-sectional study was conducted from March 01 to 30/2023.

4.2. Study Area and population

The study was conducted in Bahir Dar city public hospitals. Bahir-Dar is the capital city of Amhara Regional State. The city is located at 497.2 km away from Addis Ababa. It has 17 kebeles with a total population of 249,255. There are three public hospitals and five public health centers in the city (68). The study was conducted at Felege Hiwot comprehensive specialized hospital, Tibebe Ghion specialized teaching hospital and Addisalem primary hospital. There were 340 physicians and 809 nurses within these hospitals. These hospitals are giving different health service for the community and it has 1059 admission beds. There are about estimated 800 epilepsy patients on follow up in Bahir Dar city public hospitals(69).

4.3. Population

4.3.1. Source population

All epilepsy patients on treatment in Bahir Dar city public hospitals were the source population of the study.

4.3.2. Study population

All epilepsy patients on treatment in Bahir Dar city public hospitals were the study population of the study.

4.3.3. Study unit

Epileptic patients from whom data were actually collected were the study unit.

4.4. Inclusion criteria

All selected epileptic patients who are currently on treatment during data collection were included in the study.

4.5. Variables of the study

4.5.1. Dependent variables

Adherence to anti-epileptic medication (Yes/No)

4.5.2. Independent variables

Socio demographic factors

- Age
- Sex
- Marital status
- Residence
- Level of education
- Occupation
- Level of income

Type Epilepsy and other conditions

- Type of epilepsy
- Frequency of seizure
- Presence of hypertension
- Presence of diabetes Mellitus
- Presence of cardiac disease
- Forgetfulness

Health care system related factors

- Distance from health institution
- Compassion of health professionals towards care of patient

Treatment Related Factors

- Duration of the treatment
- Medication frequency
- Complexity of the regimen
- Side effect

4.6. Operational definition

Good adherence is a condition in which epileptic patients on treatment achieves 27 and above score from 28 medication adherence total score derived from adherence in chronic disease scale(ACDS) (70).

Poor adherence is a condition in which epileptic patients on treatment achieves 26 and below score from 28 medication adherence total score derived from adherence in chronic disease scale(ACDS) (70).

Scoring system: - A means scored 4, B means scored 3, C means scored 2, D means scored 1, E means scored 0.

Depression and anxiety: those patients with score of ≥8 /14 are consider as having depression and anxiety symptoms(26).

4.7. Sample size estimation and methods

4.7.1. Sample size estimation

Sample size was calculated for both the first and the second objectives and the larger one was selected for the study. The study used study conducted in Dessie hospital for calculating sample size for both objectives(46).

4.7.1.1. Sample Size for the first objective

The sample size was determined by using a Sample size determination using single population proportion formula considering the following assumptions of proportion of medication adherence to epilepsy=62.5%(51), 95%CI, level of significance was 5%(51).

Where n= sample size, N= population size, Z = standard value for 95% CI, z=1.96

p = proportion of epileptic patients medication adherence =62.5% (taken from a study done in Dessie hospital). D = marginal error = 0.05 (5%),

$$n = \frac{(Z\frac{\alpha}{2})^2}{d^2} * P(1-p) \text{ , } n = \frac{(1.96)^2}{(0.05)^2} * 0.625(1-0.625)$$

There for n=360

For non-response rate 10% of sample size was added which is equals to 360*10/100= 36

Finally the total sample size of the study was n plus non-response rate

N=n+ non-response rate, N=360+36=396

Total sample size of the study was 396

4.7.1.2. Sample Size for the second objective

The study used epi info 7 statcalc for cohort and cross sectional study software to calculate sample size for all significant variables in the reference study conducted in Dessie hospital (51)and sample size was calculated for educational level, sex, adverse effect, medication source,

Table 1: Tables showing sample size for the second objectives using stat calc

S/N	Variables	CI	Power	Ratio (unexposed : exposed)	% outcome in unexposed	Odds ratio (OR)	Three alternative sample size from Statcalc and take the larger as best choice
1	Educational level	95%	80%	1	47	22.3	34
2	Sex	95%	80%	1	56	2.37	214
3	Adverse effect	95%	80%	1	12	13.68	32
4	Medication source	95%	80%	1	58	2.06	298

And from those variables using the literature the study used 95% CI, power (80%), ratio (1), % of outcome in unexposed group (58%), Odds ratio (2.06) finally Statcalc provides 298 sample sizes which was the largest sample size from all calculated values as shown in the above table

Thus sample size of second objective was 298

Finally when comparing sample size of the first and second objective the first was larger than the second who was selected as the sample size of the study and the sample of the study was 396.

4.7.2. Sampling procedure

There are 3 public hospitals in the city and samples was taken from all the three public hospitals and samples were allocated to the three hospital proportionally based on number of cases. The study patients were selected by systematic random sampling procedure. First K(sampling interval) was calculated by dividing all study population by the total sample size(800/396) and K was approximately 2 and then sample was selected every 2th interval, when the selected sample were not available in the study site during data collection period due to treatment appointment schedule the next patient on follow up was interviewed . The total number of participants in each hospital was allocated proportionally. ni =n*Ni/N.; where ni was number of epilepsy patients in each hospital, n was total sample size , Ni is total study population in each hospital and N was total study population.

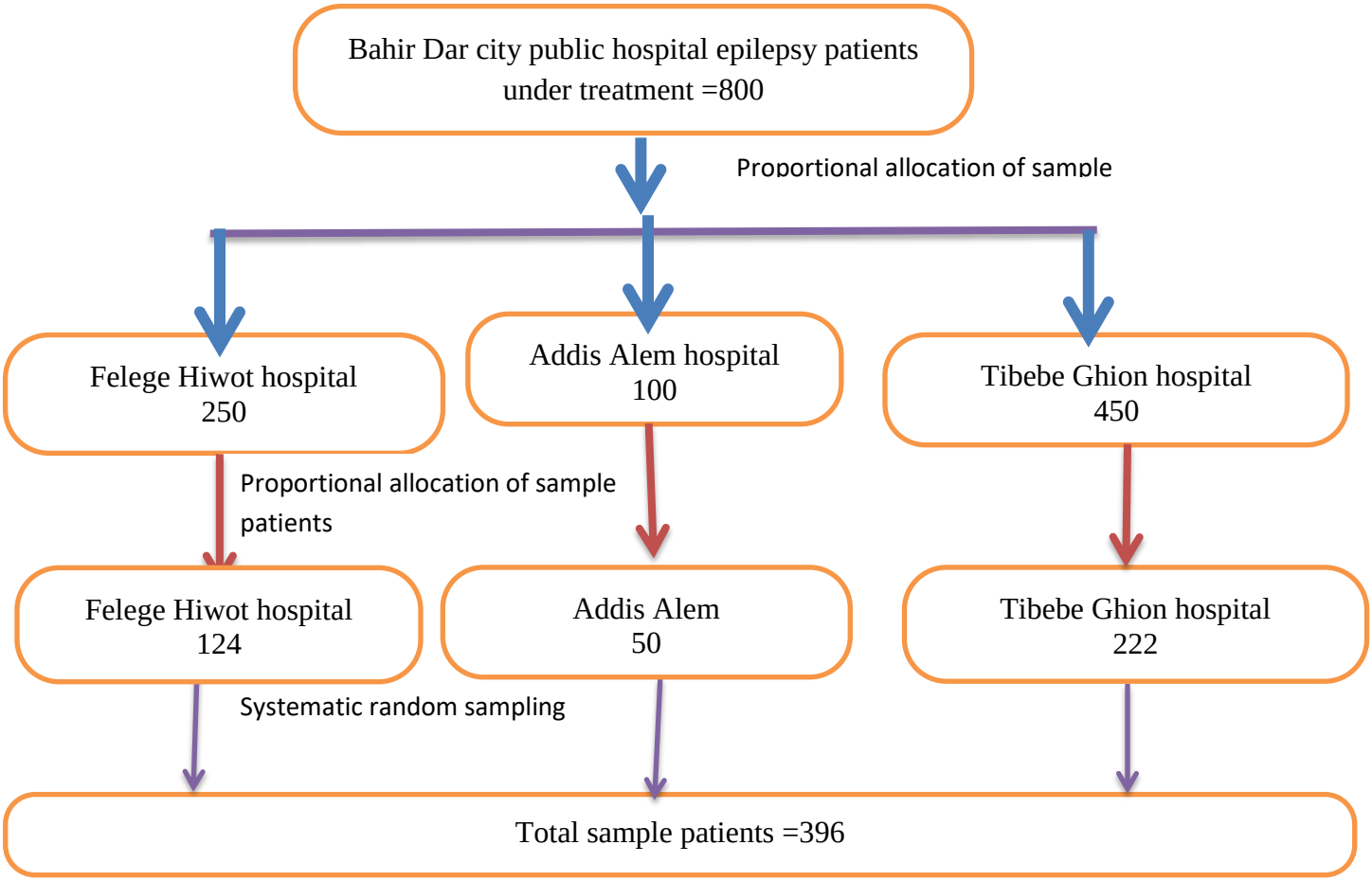

Figure 2: Schematic presentation of sampling procedure for selecting study units from the study population in Bahir Dar city public hospitals.

4.8. Data collection tools and procedures

Data was collected using structured questionnaire and checklist which was adapted from different literatures that was used to assess medication adherence to epilepsy and Adherence in Chronic Diseases Scale (ACDS) (70, 71). The questionnaire was prepared in English and then was translated to Amharic and then back to English language for analysis and 2 diploma nurses was selected for data collection and 1 BSc nurse professional was selected for supervisors and one day training was given to all data collectors and supervisors about data collection procedures and data collection tools.

4.9. Data processing and analysis

The data was checked for completeness, consistencies and it was cleaned, code and entered in to Epi data version 3.1 and was exported into SPSS for windows version 23 for analysis. Descriptive statistics like frequency, percentage, graphs, charts, mean and standard deviation of the variables. Bivariable analysis was done to identify candidate variables for multi-variable logistic regression. Multivariable logistic regression was done to predict the association between independent and dependent variable. In the final model, confidence interval (95%) and a p-value < 0.05 was considered as statistically significant. Model goodness of fit was checked by Hosmer-Lemeshow goodness of fit test

4.10. Data quality assurance

The data collection questioner was develop in English, then translated in to Amharic, and back translated in to English to check language consistency by a different person with an excellent Amharic and English-speaking skill. Training on the objective of the study, method of data collection and content of questionnaire was given to supervisor and the data collectors. During data collection days, the principal investigators and supervisors were check data for completeness and clarity.

4.11. Ethical consideration

Ethical clearance was obtained from Bahir Dar University College of Medicine and Health Sciences, Institutional Review Board with approval protocol number of 731/2023. Additional support letter was obtained from Amhara public health institute. Data collectors were provide code for each participant to make confidential and new study was developed. Throughout the study confidentiality was maintained. All documents were secured with locked cabinet and password protected computer, after taking oral consent form. In addition oral consent was obtained from epileptic patients before running the interview for their agreement and they have the right to discontinue and jump interview at any time of the interview.

4.12. Dissemination of result

After compilation of the study, the result will be presented to Bahir Dar University College of medicine school of public health and submitted to responsible governmental and non-governmental organizations. In addition, the finding of the study will disseminated to the study site to share the result of the study, to locally available NGO who work on mental health, and finally after correction of the comments the study send to the reputable journals for publication of the study.

5. Result

5.1. Socio –demographic characteristics

A total of 396 epileptic patients who fulfill the inclusion criteria were interviewed from Bahir Dar city public hospitals. Around half of the patients 58.8% were females and 26.3% were aged between 40 to49 years. 73% of patients were urban dweller, and 45.5% were married, 45.2 % had college and above education, and 23.7% were employed by occupation (see table 2).

Table 2: Socio demographic characteristics for anti-epileptic drug adherence among patients with epilepsy in Bahir Dar city public health hospital, Ethiopia, 2023

Variables	Category	Frequency	Percent (%)
Sex	Female	233	58.8
	Male	163	41.2
Age	18-20	60	15.2
	20-29	61	15.4
	30-39	72	18.2
	40-49	104	26.3
	50 and above	99	25
Ethnicity	Amhara	394	99.5
	Oromo	2	0.5
Residence	Rural	107	27
	Urban	289	73
Marital status	Single	112	28.3
	Married	180	45.5
	Divorced	46	11.6
	Separated	33	8.3
	Widowed	25	6.3
Educational status	No formal education	38	9.6
	Primary education	77	19.6
	Secondary education	102	25.8
	College and above	179	45.2
Monthly income	Less and 999	46	11.6
	1000-1999	76	19.2
	2000-2999	105	26.5
	3000 and above	169	42.7
Occupational status	Farmer	63	15.9
	Daily laborer	57	14.4
	Merchant	40	10.1
	Student	67	16.9
	Unemployed	75	18.9
	Employed	94	23.7

5.2. Type Epilepsy and other conditions

The age onset of the illness in the participants was 40.2 %between less and 29 years. More than 35.4% patients with epilepsy were ill between 1-5 years. From all types 48% of the study participants had partial types of epilepsy. The respondents 69.7% had a seizure > 3 times per year. 76% of participants had depressive and anxiety symptoms and 97.5% participants had no comorbidity. Regarding number of medication 63.9% were on mono therapy (see table 3).

Table 3: Types epilepsy and other condition related factors for anti-epileptic drug adherence among patients with epilepsy in Bahir Dar city public health hospital, Ethiopia, 2023

Variables	Category	Frequency	Percent
Age of onset the illness in years	Less and 29	159	40.2
	30-39	152	38.4
	40-49	48	12.1
	50 and above	37	9.3
Duration of illness	<1years	40	10.1
	1-5 years	140	35.4
	6-10 years	104	26.3
	>10 years	112	28.3
Types of epilepsy	Partial	190	48.0
	Generalized	171	43.2
	Combined partial with generalized	13	3.3
	Unknown	22	5.6
Frequency of seizure per year	<=2	120	30.3
	>=3	276	69.7
Forgetfulness	No	117	29.5
	Yes	279	70.5
Presence of depression and anxiety	Not depression and anxiety	95	24
	depression and anxiety	301	76
Comorbidity present	No	386	97.5
	Yes	10	2.5
Side effects of anti-epileptic medication	No	82	20.7
	Yes	314	79.3
Complexity of drug therapy	Mono therapy	253	63.9
	Poly therapy	143	36.1
Distance from nearest health institution in kms	<10kms	147	37.1
	>10kms	249	62.9

Presence of compassionate respectful and caring health care professionals	No	352	88.9
	Yes	44	11.1
Duration of treatment in year	Less than 5years	124	31.3
	6-10 years	192	48.5
	More than 10 years	80	20.2
Medication frequency	Once a day	26	6.6
	Twice a day	348	87.9
	Three or more time a day	22	5.6

5.3. Magnitude of Epilepsy medication adherence

Overall adherence was 45.5%of patients are adherent to anti epileptic medication(see figure 2)

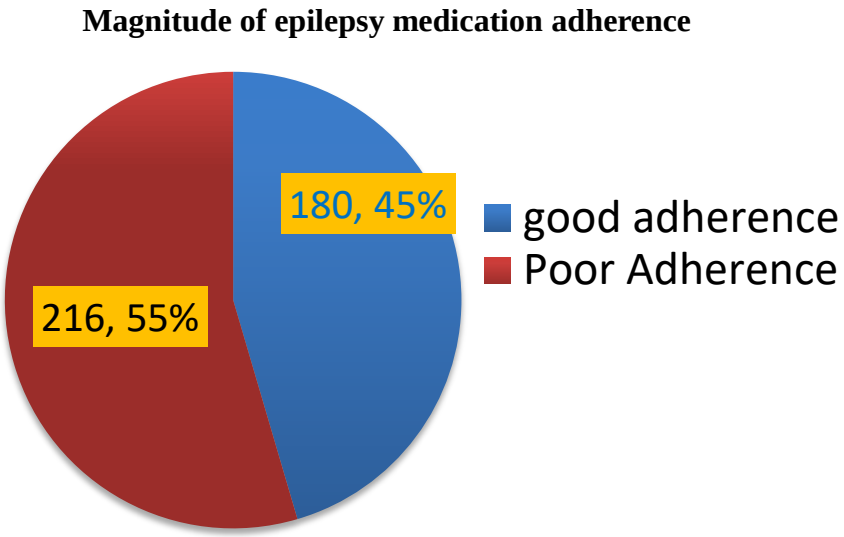

Figure 3: Level of medication adherence in Bahir Dar city public hospitals.

5.4. Factors associated with medication adherence among epileptic patients

Accordingly, variables such as sex, residence, education, monthly income, occupational status, Distance in Kms and medication frequency were considered to fit into the Bivariable logistic regression analysis model with p-values of ≤0.25.

Finally, to control for confounding, multivariable analysis was used after checking the Hosmer-Lemeshow goodness of fit test was 0.075 which was good model since a model with Hosmer Lemeshow goodness of fit test greater than 0.05 were considered as good model. Variables such as sex of the patient, residence, education, monthly income and occupation of the patient were significantly associated with Adherence to anti-epileptic medication with p-values of ≤0.05.

Therefore, by adjusting for other variables, the study showed that the odds of good Adherence to anti-epileptic medication were 1.8 times more likely in male compare to female. (AOR=1.8, 95% CI 1.2-2.9). The odds of good Adherence to anti-epileptic medication were 2.3 times more likely for respondents residing in urban areas than in those residing in rural areas.(AOR=2.3, 95% CI: 1.2 - 4.4). Besides, The odds of good Adherence to anti-epileptic medication were 4.0 times more likely for respondents those had College and above than in those had no formal education (AOR=4.0, 95% CI: 1.7 - 9.8). The odds of good Adherence to anti-epileptic medication were 3.1 times more likely for respondents month income 3000 and above than those Less and 999. (AOR=3.1, 95% CI: 1.2 - 7.9). The odds of good Adherence to anti-epileptic medication were 5.1 times more likely for respondents had Employed compare to those are farmer.(AOR=5.1, 95% CI: 2.0 - 12.6). (See table 4)

Table 4: Logistic regression output showing the effect of socio-demographic, clinical and other characteristics on adherence to antiepileptic treatment BDR city public hospitals.

Variables	Category	Adherence		COR	AOR	95%CI		P-Value
		Adhere (N(%))	Not adhere (N (%))			Lower	Higher	
Sex	Female	96(24.2)	137(34.6)	1				
	Male	84(21.2)	79(19.9)	1.517	1.837	1.152	2.930	0.01
Residence	Rural	36(9.1)	71(17.9)	1				
	Urban	144(36.4)	145(36.6)	1.959	2.260	1.168	4.372	0.02
Education	No formal education	6(15.8)	32(84.2)	1				0.01
	Primary education	24(31.2)	53(68.8)	2.415	1.284	0.496	3.323	0.61
	Secondary education	50(49.0)	52(51.0)	5.128	2.981	1.192	7.456	0.02
	College and above	100(55.9)	79(44.1)	6.751	4.087	1.712	9.759	0.01
Monthly income	Less and 999	9(30.0)	21(70)					0.01
	1000-1999	24(27.6)	63(72.4)	0.889	0.680	0.250	1.853	0.45
	2000-2999	50(49.5)	51(50.5)	2.288	2.781	1.039	7.443	0.04
	3000 and above	97(54.5)	81(45.5)	2.794	3.115	1.228	7.901	0.02
Occupational status	Farmer	13(27.1	35(72.9)					0.01
	Daily laborer	20(31.3)	44(68.8)	1.224	1.398	0.559	3.495	0.47
	Merchant	30(46.9)	34(53.1)	2.376	2.457	1.018	5.931	0.05
	Student	32(43.8)	41(56.2)	2.101	4.354	1.615	11.739	0.01
	Unemployed	38(52.1)	35(47.9)	2.923	3.885	1.605	9.407	0.01
	Employed	47(63.5)	27(36.5)	4.687	5.180	2.129	12.604	0.01
Distance in kms	<10kms	76(51.7)	71(48.3)					
	>10kms	104(41.8)	145(58.2)	1.492	0.710	0.424	1.189	0.19
Medication frequency	Once a day	11(2.8)	15(3.8)					0.62
	Twice a day	155(39.1)	193(48.7)	1.095	1.366	0.531	3.513	0.52
	Three or more time a day	14(3.5)	8(3.7)	2.386	1.930	0.521	7.148	0.33

6. Discussion

Despite 60% to 70% of people living with epilepsy could live seizure free if properly diagnosed and treated with anti-seizure and epilepsy is still an important cause of disability and mortality globally; non-adherence situation plays an important factor in the failure of seizure control; Such a condition may generate several impacts on clinical, social, and economic aspect(55) but 75% to 90% of epilepsy patients have insufficient treatment for their illness especially in low and middle-income countries(22, 23) and 95% standard adherence is necessary to adequately suppress the epileptic seizures; related studies on epilepsy medication adherence shows the level of epilepsy medication adherence varies from study to study.

The finding of the study shows that 180(45.5%) of study participants were adherent to antiepileptic medication with 95% confidence interval of (41%, 50%). The finding was in line with study conducted in India 43%(37); the finding was lower than study's findings conducted in Dessie Referral hospital 65.9%(72),systematic review in Ethiopia 60.23%(43) and study conducted in Adama hospital 67.2%(36) and was higher than the study findings conducted in Yirgalem hospital 32%(44), in Ayder specialized comprehensive hospital 34.6%(49) and in Amanuel mental hospital 16.38%(26) ; this may be due to socio demographic factors, health care and system related factors, disease and patient related factors and treatment related factors.

According to this study, being male have high adherence to epilepsy medication by 1.84 times compared to being female , which is in contrary with study done in brazil in which males have low adherence than females(56)and study conducted in Dessie town public hospital also shows being males have low adherence to epilepsy medication compared to females (51), study done in India in which sex have no significant association with adherence to epileptic medication(57), the difference in significance between study from study was probably due to difference in gender issues in different culture and population.

Residence of patients was significantly associated with adherence to epilepsy medication in the study in which being urban residence have 1.96 times higher adherence compared to rural residence. The finding is in line with study done in Dessie comprehensive hospital in which being urban residence have higher adherence compared to being rural residence (73), the finding is in contrary to study conducted in Egypt and study conducted in Adama hospital in which residence was not significantly associated with epilepsy medication adherence (36, 74) the difference may be probably due to population difference.

Education of patients was significantly associated with adherence to epilepsy medication in which those patients with above primary education were significantly associated with epilepsy medication adherence those with secondary education have 1.2 times higher adherence and those with college and above have 1.7 times higher adherence to medication compared to those with no formal education groups. The finding is in line with the study done in Nigeria and Yirgalem General hospital which being secondary and college & above have higher adherence compared to being no formal educations (44, 62), the study finding is in contrary to the study conducted in Kuala Lumpur hospital in which educational level was not significantly associated with epilepsy medication adherence(75) the difference may be probably due to population difference.

Monthly income of patients was significantly associated with adherence to epilepsy medication in which those patients had above 1000-1999 income in birr were significantly associated with epilepsy medication adherence those with 2000-2999 birr have 0.042 times higher adherence and those with 3000 birr and above have 0.017 times higher adherence to medication compared to those have less and 999birr groups. The finding is in line with the study done pediatric neurology clinic in southern Ethiopia in which those with >3000EBR and ambulatory clinic of Jimma medical center in which those with >1000EBR monthly income have higher adherence compared to those with monthly income <1000 EBR(45, 76) the difference may be probably due to population difference.

The study shows that occupation is significantly associated with epilepsy medication adherence in which being merchant, student and employed were significantly associated with epilepsy medication adherence which is in line with study conducted in Dessie hospital(73) in contrary to study conducted in India indicated that occupation was not significantly associated with adherence to epilepsy medication (77). These differences may be probably due to population and sample size difference.

7. LIMITATION OF THE STUDY

The study conducted only in limited area due to resource limitation.

Since the study is cross sectional study it did not show cause effect relationship.

8. CONCLUSION

This study focused on the magnitude of medication adherence of epileptic patients in the study area. According to this finding the adherence level of medication among epileptic patient was below 50%. From this study finding, the variables; sex, residence, educational level, monthly income and occupations of epileptic patients were an associated factor that affects adherence of the epileptic patients to epileptic medication.

9. RECOMMENDATION

For Health bureau

Health bureau should access epilepsy medication in all health institution there by epilepsy patients can access it near to their residence so as to improve magnitude of good adherence.

Drug adherence assessment should be a routine base to take immediate action for improving magnitude of drug adherence

For Bahir Dar city public hospitals

The adherence focal person should be assigned in hospital to control the adherence level of medication among epileptic patients.

Persistent awareness should be created for clients on drug adherence at each and every visit of hospital to improve adherence level.

For Researchers

Further researches are recommended in the topic covering larger population.

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APPENDEX

Appendex2: English version Questionnaire

Part I: Socio demographic characteristics for anti-epileptic drug adherence among patients with epilepsy in Bahir Dar city public health hospital, Ethiopia, 2023

S/No	Questions	Response	Remark
101	Sex of participant	1. Female 2. Male	
102	Age in years	_____	
103	Ethnicity	1. Amhara 2. Oromo 3. Tigre 4. Guragie 5. Others specify_____	
104	Place of residence	1. Rural 2. Urban	
105	Marital Status	1. Single 2. Married 3. Divorced 4. Separated 5. Widowed	
106	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Others specify _____	
107	Educational status	1. No formal education 2. Primary education 3. Secondary education 4. college and above	
108	Monthly income EtB	_____	
109	Occupational status	1. Farmer 2. Daily laborer 3. Marchant	

		4. Student 5. Unemployed 6. Employed	

Part II: Disease and patient related factors for anti-epileptic drug adherence among patients with epilepsy in Bahir Dar city public health hospital, Ethiopia, 2023

S/No	Questions	Response	Remark
201	Age of onset of the illness in years		
202	Duration of illness in year		
203	Types of epilepsy	1. Partial	
		2. Generalized	
		3. Combined partial with generalized	
		4. Unknown	
204	Frequency of seizure per year		
205	Forgetfulness	1. Yes	
		2. No	
206	Comorbidity of medical illness	1. Yes	If yes go to 207
		2. No	
207	Type of comorbidity	1. Diabetes mellitus	
		2. HIV/AIDS	
		3. Hypertension	
		4. Congestive heart failure	
		5. Other specify	

Part III: Anxiety and Depression assessment for anti-epileptic drug adherence among patients with epilepsy in Bahir Dar city public health hospital, Ethiopia, 2023

S. No	Questions	Participants answer to questions			
301	Do you feel tense or 'wound up'	Most of the time	A lot of the time	From time to time, occasionally	Not at all
302	Do you still enjoy the things you used to enjoy	. Definitely as much	2.Not quite so much	3.Only a little	Hardly at all
303	Do you get a sort of frightened feeling as if something awful is about to happen:	1.Very definitely and quite badly	2.Yes, but not too badly	3.A little, but it doesn't worry me	4.Not at all
304	Can you laugh and see the funny side of things:	As much as I always could	2.Not quite so much now	3.Definitely not so much now	4.Not at all
305	Worrying thoughts go through my mind:	A great deal of the time	2.A lot of the time	3.From time to time, but not too often	4.Only occasionally
306	Do you feel cheerful:	Not at all	Not often	Sometimes	4.Most of the time
307	Can you sit at ease and feel relaxed	Definitely	Usually	Not Often	4.Not at all
308	Do you feel as if you are slowed down:	Nearly all the time	Very often	Sometimes	4.Not at all
309	Do you get a sort of frightened feeling like' butterflies' in the stomach:	Not at all	Occasionally	Quite Often	4.Very Often
310	Do you have lost interest in your appearance:	Definitely	I don't take as much care as I should	I may not take quite as much care	4.I take just as much care as ever
311	Do you feel restless as you have to be on the move:	Very much indeed	Quite a lot	Not very much	4.Not at all
312	Do you look forward with enjoyment to things:	As much as I ever did	Rather less than I used to	Definitely less than I used to	4.Hardly at all
313	Do you get sudden feelings of panic:	Very often indeed	Quite often	Not very often	4.Not at all

314	Can you enjoy a good book or radio or TV program:	Often	Sometimes	Not often	4.Not at all

Part IV: Health care and treatment related factors for anti-epileptic drug adherence among patients with epilepsy in Bahir Dar city public health hospital, Ethiopia, 2023

S/No	Questions	Response	Remark
401	Side effects of anti-epileptic medications circle all the patient report	1. Nausea	
		2. Abdominal pain	
		3. Dizziness	
		4. Sleepiness	
		5. Irritability	
		6. Anxiety or mood changes	
		7. Unsteadiness	
		8. Poor concentration	
		9. Tremor	
		10. Double vision	
		11. Vomiting	
		12. Rash	
		13. Blood problems	
		14. Liver problems	
		15. Severe behavior disturbance	
		16. Worsening of seizure control	
402	Complexity of drug therapy	1. Mono therapy	
		2. Poly-therapy	
403	Distance from nearest health institution in km		
404	Presence of compassionate respectful and caring Health care professionals	1. Yes	
		2. No	
405	Duration of treatment in year		
406	Medication frequency	1. Once a day	
		2. Twice a day	
		3. Three or more time a day	

Part V: Adherence In chronic disease scale (ACDS) questionnaires

No	Questions	Response	Remark
501	Do you always remember to take all your medications according to your doctor's instructions?	A. Always	
		B. Almost always	
		C. Sometimes	
		D. Hardly ever	
		E. Never	
502	Do you happen to change the dosing of your medications without prior consultation with your doctor?	A. Never	
		B. Only occasionally	
		C. Sometimes	
		D. Frequently	
		E. I don't adhere to dr's recommendations at all	
503	Do you adjust the dosing of your medications according to how you feel?	A. No, I strictly follow the prescribed dosing , no matter how I feel	
		B. Yes, I reduce the dosage of some medication when I feel good	
		C. Yes, I skip doses of some medications when I feel good	
		D. Yes,I temporarily discontinue some medicat ion when I feel good	
		E. Yes, I discontinue all medications when I feel good	
504	On the appearance of medication-related side effects (e.g. stomach pain, liver pain, rash, lack of appetite, oedema):	A. I seek medical attention instantly	
		B. I reduce the dosage of the medication and attempt to expedite the elective appointment with my doctor	
		C. I discontinue the medication and attempt to expedite the elective appointment with my doctor	
		D. I discontinue the medication and wait for the next elective appointment with my doctor	
		E. I discontinue all my medications and wait for the next elective appointment with my doctor	

505	Do you find all your medications necessary for your health?	A. Yes, I do	
		B. I find most of my medications to be beneficial for my health	
		C. I find only some of my medications to be beneficial for my health	
		D. I find some of my medications to be beneficial for my health, while the others to be harmful for me	
		E. I find the majority of my long-term medications to be harmful for me	
506	Does your doctor inquire about medication-related problems that you might possibly experience?	A. Yes, on every appointment	
		B. Yes, he/she usually does	
		C. Yes, but only sometimes	
		D. Yes, but only occasionally	
		E. No, never	
507	Do you tell truth when asked by your doctor about medication-related problems?	A. Yes, always	
		B. Almost always	
		C. I try to be honest, but sometimes it is hard to admit to non-compliance with doctor's recommendations	
		D. Sometimes yes, another time no	
		E. No, I don't. I find it my own private business	

Scale: A =4 B=3 C=2 D=1 E=0

አባሪ አንድ: የስምምነት ቅፅ

ስላም ጤና ይስጥልኝ? ስሜ ……እባላለሁ፡፡ ከበባህር ዳር ዩኒቨርሲቲ ህብረተሰብ ጤና ኤፒዲሚዮሎጂ የድህረ ምረቃ ሚሚያ ምርምር የኤፒዲሚዮሎጂ እና ባዮስታስቲክስ ትምህርት ክፍል ተማሪዎች ጋር እየሰራሁ ነው። በባህር ዳር ከተማ አስተዳደር የህዝብ ሆስፒታሎች መድህኒት በመዉሰድ ላይ ያሉ የሚጥል በሽታ ህሙማን ላይ ያለዉን የመድሃኒት ቁርኝት እና ተያያዥ ምክንያቶችን ቃለ መጠይቅ እያደረግሁ ነው። ይህንን ጥናት እንዳደርግ በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ቤት ፍቃድ አግኝቻለሁ። ለተመራማሪው፣ ለህብረተሰቡ እና ለመድኃኒት ክትትል ባለድርሻ አካላት እና ተያያዥ ምክንያቶች የተሻሻለ የመድኃኒት ግንዛቤን ለማቀድ በጣም ጠቃሚ የሆኑ አንዳንድ መረጃዎችን ለመሰብሰብ የሚጥል በሽታ ያለባቸውን ሕመምተኞች ቃለ መጠይቅ ለማድረግ ፈቃድ እጠይቃለሁ።

የእርስዎ አስተዋፅዖ ለጥናቱ ትልቅ ግብአት አለው እና ተሳትፎዎን በጣም አደንቃለሁ። በዚህ ጥናት ውስጥ ከመሳተፍዎ ጋር የተያያዘ ምንም አይነት አደጋ/ስጋት ሊኖርዎ አይገባም። ስምዎም በመጠይቁ ውስጥ አይጻፍም እና የሚሰጡት መረጃ ሁሉም በጥብቅ ሚስጥር እንደምንጠብቅ ልነግረዎት እወዳለሁ።መረጃውን የሚሰበስቡት ዋና ተመራማሪ እና የምርምር ረዳቶች ብቻ ናቸው መረጃውን ማግኘት የሚችሉት። የእርስዎ ተሳትፎ በፈቃደኝነት ላይ የተመሰረተ ነው። አንድን ጥያቄ ላለመመለስ ከፈለጉ መብትዎ ነው። እንዲሁም ምንም አይነት ምቾት በማይሰማዎት ጊዜ ከጥናቱ ለማቆም ይፈቀድልዎታል፡፡

ዋና ተመራማሪ፡

ስም፡- አገኘሁ መራዊ (ቢኤስሲ የጤና መኮንን) ፤ ሞባይል-ስልክ፡ 251-918656911

አማካሪዎች፡

1፡ ካሳውማር አንጋዉ (ኤምፕኤች በኢፒዲሚዮሎጂ ረዳት ፕሮፌሰር) ስልክ 2510923755107

2፡ ታዬ አቡአሂይ(ኤምኤስሲ ባዮስታቲክስ, ረዳት ፕሮፌሰር) ሞባይል -ስልክ: 251-918806940

በዚህ ጥናት ውስጥ ለመሳተፍ ይስማማሉ? ሀ. አዎ ለ. አይደለሁም

መረጃ የተሰበሰበበት ቀን ……. የጥናት ቦታ ……

የቃለ-መጠይቁ ኮድ …….

የቃለ መጠይቅ አድራጊው ስም ……ፊርማ ……

የተቆጣጣሪው ስም ……ፊርማ……

አባሪ 1: የአማርኛ መጠይቅ ቅፅ

ክፍል አንድ፡ በባሕር ዳር ከተማ አስተዳደር ስር በሚገኙ የመንግስት ሆስፒታልሎች ውስጥ የሚጥል በሽታ ላለባቸው ታካሚዎች የፀረ-የሚጥል መድኃኒቶችን ክትትል ለመለካት የሚያግዙ ግላዊና ማህበራዊ ጥያቄዎች

ተ.ቁ	ጥያቄዎች	መልስ	ምርመራ
101	ጸታ	1. ወንድ 2. ሴት	
102	እድሜዎ ስንት ነዉ?	_____ዓመት	
103	ብሔርዎ ምን ነዉ?	1. አማራ 2. ኦሮሞ 3. ትግሬ 4. ጉራጌ 5. ሌላ ካለ ይገለፅ_____	
104	የመኖሪያ ቦታ	1. ገጠር 2. ከተማ	
105	የጋብቻ ሁኔታ	1. ያላገባ/ች 2. ያገባ/ች 3. የተፋታ/ች 4. የተለያየ ቦታ የሚኖሩ 5. የሞተችበት/ባት	
106	ኃይማኖትዎ ምንድን ነዉ?	1. ኦርቶዶክስ ተዋህዶ 2. እስልምና 3. ፕሮቴስታንት 4. ሌላ ካለ ይገለፅ _____	
107	የትምህርት ደረጃ ምን ይመስላል?	1. መደበኛ ትምህርት ያልተማሩ 2. አንደኛ ደረጃ 3. ሁለተኛ ደረጃ 4. ኮሌጅና በላይ	
108	አማካይ ወርሀዊ ገቢዎ በኢትዮጵያ ብር ምን ያክል ነዉ?	_____	
109	የስራ ሁኔታ	1. ገበሬ 2. ጉልበት ሰራተኛ 3. ነጋዴ 4. ተማሪ	

5. ስራ ፈላጊ
6. ተቀጣሪ

ክፍል ሁለት ፡ ለሚጥል በሽታ የሚሰጠዉን መድሃኒት የክትትል ሁኔታ፤ ከበሽታዉና እና ከታካሚዎች ጋር የተዛመዱ ምክንያቶችን የሚዳስሱ መጠይቆች

ተ/ቁ	ጥያቄዎች	መልስ	ምርመራ
201	በሽታዉ በስንት አመትዎ ነዉ የጀመረዉ?		
202	በሽታዉ ከያዝዎት ስንት አመትዎ ነዉ?		
203	የትኛዉ አይነት የሚጥል በሽታ ነዉ ያለብዎት?	1. ከፊል 2. አጠቃላይ 3. ከፊል አጠቃላይ 4. የማይታዎቅ	
204	በዓመት ከቁጥጥር ውጭ የሆነ የእጆች እና የእግሮች መንቀጥቀጥ፤ራስን የመሳት ወይም የንቃተ ህሊና ማጣት ድግግሞሽ ስንቱ ይከሰታል ?		
205	የመርሳት ችግር አለብዎት?	1. አወ 2. የለብኝም	
206	ተጉአዳኝ ህመሞች አሉብዎት?	1. አዎ 2. የለብኝም	አዎ ካሉ ወደ ጥያቄ 207ይሂዱ
207	የተጉአዳኝ ህመም አይነት	1. የስኩዋር በሽታ 2. ኤች አይ ቪ 3. ግፊት 4. የልብ ህመም 5. ሌላ……	

ክፍል ሶስት፡ የሚጥል በሽታ ላለባቸው ህሙማን ፀረ-የሚጥል መድሀኒት ክትትል ጋር ተያይዞ ያለውን የጭንቀት እና ድባቴ ሁኔታ መጠይቅ በባህር ዳር፣ 2023

ተ.ቁ	ጥያቄዎች	የተሳታፊዎች መልስ			
301	የውጥረት ወይም 'የቁስለት ስሜት' ይሰማዎታል	1. አብዛኛውንጊዜ ይሰማኛል	2.ብዙ ጊዜ ይሰማኛል	3. ከጊዜ ወደ ጊዜ, አልፎ አልፎ	4.አይሰማኝም
302	ትደሰትባቸው በነበሩት ነገሮች አሁንም ትደሰታለህ?	1. በእርግጠኝነት	2. በጣም ብዙ አይደለም	3. ትንሽ ብቻ	4. በጭራሽ
303	አንድ አስከፊ ነገር ሊፈጠር እንደሆነ አይነት የፍርሃት ስሜት ይሰማዎታል፡-	1. በጣም በእርግጠኝነትእና በጣም መጥፎ	2. አዎ, ግን በጣም መጥፎ አይደለም	3. ትንሽግን አያስጨንቀኝም።	4. አይሰማኝም
304	መሳቅ እና የነገሮችን አስቂኝ ገጽታ ማየት ይችላሉ-	1. ሁልጊዜ የምችለውን ያህል	2. አሁን በጣም ብዙ አይደለም	3. በእርግጠኝነት አሁን በጣም ብዙ አይደለም	4. አልችልም
305	የሚያስጨንቁ ሐሳቦች በአእምሮዎ ውስጥ ይሄዳሉ፡-	1. በጣም ብዙ ጊዜ	2. ብዙ ጊዜ	3. ብዙ ጊዜ አይደለም	4. አልፎ አልፎ ብቻ
306	የደስታ ስሜት ይሰማዎታል:	1. አይሰማኝም	2. ብዙ ጊዜ አይሰማኝም	3. አንዳንዴ ይሰማኛል	4. አብዛኛውንጊዜ ይሰማኛል
307	በተረጋጋ ሁኔታ መቀመጥ እና ዘና ማለት ይችላሉ	1. በእርግጠኝነት እችላለሁ	2. አብዛኛውን ጊዜ እችላለሁ	3. ብዙ ጊዜ አይደለም	4. አልችልም
308	የዘገየህ/ሽ ያህል ይሰማሃል	1. ሁልጊዜ ማለት ይቻላል	2. በተደጋጋሚ	3. አንዳንዴ	4. አይሰማኝም
309	በሆድ ውስጥ እንደ 'ቢራቢሮዎች' አይነት የፍርሃት ስሜት ይሰማዎታል:	1. አይሰማኝም	2. አልፎ አልፎ ይሰማኛል	3. በጣም ብዙ ጊዜ ይሰማኛል	4. በተደጋጋሚ ይሰማኛል
310	ስለ መልክህ ፍላጎት አጥተሃል?	1. በእርግጠኝነት አጥቻለሁ	2. የሚገባኝን ያህል እንክብካቤ	3. ያን ያህል ጥንቃቄ ላደርግ እችላለሁ	4. ልክ እንደበፊቱ እንክብካቤ

			አላደርግም		አደርጋለሁ
311	በእንቅስቃሴላይ መሆን ሲኖርብዎ እረፍት ማጣት ይሰማዎታል:	1. በጣም በእርግጥ	2. በጣም ብዙ	3. በጣም ብዙ አይደለም	4. አይሰማኝም
312	ነገሮችንበመደሰት በጉጉት ትጠብቃለህ	1. የመቼውንም ጊዜያህል እጠብቃለሁ	2. ከበፊቱ ያነሰ እጠብቃለሁ	3. በእርግጠኝነት ከበፊቱ ያነሰ	4. በጭራሽ ነገሮችን በመደሰት በጉጉት አልጠብቅም
313	ድንገተኛ የፍርሃት ስሜት ይሰማዎታል	1. በጣም ብዙ ጊዜ በእርግጥ	2. በጣም ብዙ ጊዜ	3. ብዙ ጊዜ አይደለም	4. አይሰማኝም
314	ጥሩ የመጽሐፍ ወይም የሬዲዮ ወይም የቲቪ ፕሮግራም መደሰት ትችላለህ፡-	1. ብዙ ጊዜ	2. አንዳንዴ	3. ብዙ ጊዜ አይደለም	4 .አልችልም

ክፍል አራት: ከጤና አገልግሎትና ከመድሀኒት ጋር ተያያዥነት ያላቸው የፀረ-የሚጥል በሽታ መድሃኒት ክትትል የተዛመዱ ምክንያቶችን የሚዳስሱ መጠይቆች

ተ/ቁ	ጥያቄዎች	መልስ	ምርመራ
401	የፀረ-የሚጥል መድሃኒቶች የጎንዮሽ ጉዳቶች የታካሚውን ሪፖርት ሁሉንም ከበብ	1. ማቅለሽለሽ 2. ሆድ ህመም 3. ማዞር 4. አንቅልፍ እንቅልፍ ማለት 5. ብስጭት 6. ጭንቀት ወይም የስሜት ለውጦች 7. አለመረጋጋት 8. ትኩረት ማጣት 9. መንቀጥቀጥ 10. ድርብ እይታ 11. ማስታወክ 12. ሽፍታ 13. የደም ችግሮች 14. የጉበት ችግሮች 15. ከባድ የባህሪ መዛባት 16. የመጣል በሽታ መባባስ 17.	
402	ታካሚዉ የሚወስደዉ የፀረ-የሚጥል መድሃኒቶች ብዛት	1. አንድ መድሀኒት 2. ብዙ መድሀኒት	
403	መድሃኒት የሚከታተሉበት የጤና ተቋም ርቀት በኪ.ሜ		
404	የጤና ባለሙያዎች ሩህሩህ፣ ሰዉ አክባሪ እና ተንከባካቢ ናቸዉ ወይ?	1. አዎ 2. አይደሉም	
405	መድሀኒት ከጀመሩ ስንት ዓመት ሆነዎት?		

406	በቀን ስንት ግዜ መድሀኒት ይወስዳሉ ?	1. በቀን አንድ ግዜ 2. በቀን ሁለት ግዜ 3. በቀን ሱስት ግዜና ከዚያ በላይ

ክፍል አምስት: ሥር በሰደደ በሽታ የመድሀኒት ክትትል መለኪያ (ACDS) መጠይቆች

ተ/ቁ	ጥያቄዎች	መልስ	ምርመራ
501	በዶክተርዎ መመሪያ መሰረት ሁሉንም መድሃኒቶችዎን ሁልጊዜ እንደሚወስዱ ያስታውሳሉ?	ሀ. ሁሌም አስታዉሳለሁ ለ. ሁልጊዜ ማለት ይቻላል ሐ. አንዳንዴ ብቻ አስታዉሳለሁ መ. መቼም ሠ. በጭራሽ አላስታዉስም	
502	ሐኪምዎን ሳያማክሩ የመድሃኒቶቹን መጠን ይለውጣሉ?	ሀ. በጭራሽ አልለዉጥም ለ. አልፎ አልፎ ብቻ እለዉጣለሁ ሐ. አንዳንዴ እለዉጣለሁ መ. በተደጋጋሚ እለዉጣለሁ ሠ. የዶክተር ምክሮችን ሙሉ በሙሉ አልከተልም።	
503	የመድሃኒቶቹን ልክ እንደ ስሜትዎ መጠን ያስተካክላሉ?	ሀ. አይ፣ ምንም ቢሰማኝ የታዘዘውን የመድኃኒት መጠን በጥብቅ እከተላለሁ። ለ. አዎ፣ ጥሩ ስሜት ሲሰማኝ የአንዳንድ መድሃኒቶችን መጠን እቀንሳለሁ። ሐ. አዎ፣ ጥሩ ስሜት ሲሰማኝ አንዳንድ መድሃኒቶችን እዘላለሁ መ. አዎ፣ ጥሩ ስሜት ሲሰማኝ የተወሰነ መድሃኒትን ለጊዜው አቋርጣለሁ። ሠ. አዎ፣ ጥሩ ስሜት ሲሰማኝ ሁሉንም መድሃኒቶች አቋርጣለሁ።	
504	ከመድኃኒት ጋር የተዛመዱ የጎንዮሽ ጉዳቶች (ለምሳሌ የሆድ ህመም ፣ የጉበት ህመም ፣ ሽፍታ ፣ የምግብ ፍላጎት ማጣት ፣ እብጠት)	ሀ. ወዲያውኑ የሕክምና ክትትል እፈልጋለሁ ለ. የመድኃኒቱን መጠን እቀንሳለሁ እና ከሐኪሜ ጋር ያለኝን ቀጠሮ ለማፋጠን እሞክራለሁ። ሐ. መድሃኒቱን አቋርጣለሁ እና ከዶክተሬ ጋር ያለውን ቀጠሮ ለማፋጠን እሞክራለሁ መ. መድሃኒቱን አቋርጣለሁ እና ከዶክተሬ ጋር ያለኝን የሚቀጥለዉን	

		ቀጠሮ እጠብቃለሁ ሠ. ሁሉንም መድሃኒቶቼን አቋርጣለሁ እና ከዶክተሬ ጋር ለሚቀጥለው ምርጫ ቀጠሮ እጠብቃለሁ
505	ለጤንነትዎ አስፈላጊ የሆኑትን መድሃኒቶችዎን ሁሉ ያገኛሉ?	ሀ. አዎ እፈፅማለሁ ለ. አብዛኛዎቹ መድሃኒቶቼ ለጤንነቴ ጠቃሚ ሆነው አግኝቻቸዋለሁ ሐ. አንዳንድ መድሃኒቶቼ ብቻ ለጤንነቴ ጠቃሚ ሆነው አግኝቻቸዋለሁ መ. አንዳንድ መድሃኒቶቼ ለጤንነቴ ጠቃሚ ሲሆኑ ሌሎቹ ደግሞ ለእኔ ጎጂ ሆነው አግኝቻቸዋለሁ ሠ. አብዛኛዎቹ የረጅም ጊዜ መድሃኒቶቼ ለእኔ ጎጂ ሆነው አግኝቻቸዋለሁ
506	ሐኪምዎ ሊያጋጥሙዎት ስለሚችሉት ከመድኃኒት ጋር የተያያዙ ችግሮችን ይጠይቁዎታል?	ሀ. አዎ፣ በእያንዳንዱ ቀጠሮ ለ. አዎ ፣ እሱ / እሷ ብዙውን ጊዜ ያደርጋሉ ሐ. አዎ, ግን አንዳንድ ጊዜ ብቻ መ. አዎ ፣ ግን አልፎ አልፎ ብቻ ሠ. ምንም ፈጽሞ
507	ከመድሀኒት ጋር በተያያዙ ችግሮች በሀኪምዎ ሲጠየቁ እውነትን ይናገራሉ?	ሀ. አዎን ሁል ጊዜ ለ. ሁልጊዜ ማለት ይቻላል ሐ. እውነቱን ለመናገር እሞክራለሁ, ነገር ግን አንዳንድ ጊዜ የዶክተሮች ምክሮችን አለማክበርን መቀበል ከባድ ነው መ. አንዳንድ ጊዜ አዎ፣ ሌላ ጊዜ አይሆንም ሠ. አይደለም. የራሴ የግል ጉዳይ ሆኖ አግኝቼዋለሁ

Scale: ሀ =4 ለ=3 ሐ=2 መ=1 ሠ=0

ANNEX 6 DECLARATION FORM

I the under signed declared that this is my original work that has been never presented in this or any other university and that all the resources and materials used for the research have been fully acknowledged.

Investigator name:…….

Signature:…….

Date:……..

Mock Defense Evaluators Name:……

Signature:…….

Date:……

Advisors Name:……

Signature:…….

Date:……

Advisors Name:……

Signature:…….

Date:……