

## Knowledge about Epilepsy and its Associated Factors among Epileptic Patients at Health Facilities of Bench Maji Zone, South West Ethiopia, 2017

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### Abstract

**Background:** Knowledge is basic point for epileptics to adapt good qualities of life. In epileptics misconceptions or misperceptions is common and this can put them to different psycho-social difficulties. Study showed epileptics have no basic information about illness even they are on follow-up. Detecting misinformation and provision of appropriate corrections is crucial to bring the optimal care. Few studies were conducted in Ethiopia to evaluate the knowledge of epileptics. The current study evaluated the status of knowledge of epileptics about their illness in Bench Maji zone, south west Ethiopia.

**Materials and Methods:** An institutional based cross-sectional study was conducted on 247 samples selected by systematic random sampling from March 10 to April 10, 2017. Data were collected by interview through pretested questionnaires. Bivariate and multivariate logistics regressions were used to identify factors. The adjusted odds ratio with 95% CI was used to identify the independent factors at  $P < 0.05$ .

**Results:** The response rate was 98.8%. 53.3% of respondents were found have poor knowledge about epilepsy. Patients' monthly income, age at onset of epilepsy and duration of epilepsy were found to be factors associated with knowledge about epilepsy.

**Conclusion:** Proportion of knowledge in patients was poor. Patients' monthly income, age at onset of epilepsy and duration of epilepsy were found to be factors. Health care managers should design educational plan for patients and care providers should intervene for epileptics through provision basic information about epilepsy.

**Keywords:** Knowledge, Epilepsy, South West Ethiopia

### Introduction

Epilepsy is a chronic neurological disorder characterized by unprovoked recurring seizures. It is devastating illness which affects the life of the patients and family [1,2]. It is common disorder affecting 50 million people worldwide. The prevalence of the condition in developing countries ranges from 5 to 10 per 100 persons [3].

There is overwhelming evidence that people with epilepsy may have different psychosocial problems. Among these difficulties, depression being the common disorder displayed in 40 to 60 % of epileptic patients. Other common psychosocial difficulties are anxiety and psychosis [4,5]. There are many misconceptions and myths regarding people living with epilepsy. These misconceptions and myths can lead them to different psychosocial difficulties including depression [6].

Awareness about their illness in chronically ill patient is one important point in accepting the illness and coping with it. Having poor awareness about the illness is associated with negative consequences. In study conducted on the knowledge of illness and its outcome in chronic heart failure patients, participants with poor awareness had bad emotional reaction [7]. Another study conducted in south west Ethiopia pointed that; the rate of depressive symptoms is more encountered in individuals who have poor knowledge about their illness. In this study the odds of depression among epileptic patients who didn't know the fact about their illness was almost three times more compared with epileptics who know the fact about their illness, AOR = 2.77 CI (1.5,5.12) [8].

Knowledge is basic point for epileptics to adapt good qualities of life. Blaming self due to misconceptions or misperceptions is common and this can put them to different psycho-social difficulties. Some misconceptions are epilepsy is untreatable, contagious to family, sine from supreme power, hereditary and the disorder is a form of

mental retardation [8,9-13].

Several factors influence the life of the epileptics including poor knowledge, stigma, poor social support, seizure frequency, adherence to anti-epileptics drugs, social disadvantages, awareness about the side effects of anti-epileptic medications, age onset of epilepsy and family status [8,14].

Finding depicted that people living with epilepsy do not have basic information about their illness including the nature of the illness, seizures type, precipitating factors of seizure. Detecting this misunderstanding and provision of appropriate corrections should be addressed to bring the optimal care for people living with epilepsy [9,15]. Few studies were conducted in Ethiopia to evaluate the knowledge of epileptics about their illness. Therefore the current study evaluated the status of knowledge of epileptics about their illness in health facilities of Bench Maji zone, south west Ethiopia, 2017.

## Materials and Methods

### Study Setting and Period

Facility based cross-sectional study design was employed from March 10 to April 10, 2017 at public health facilities of BMZ, southern Ethiopia. It is situated at about 561km away from Addis Ababa, the capital city of Ethiopia, in the Southwest direction. There are a total of 219 health facilities in the zone consisting of one teaching hospital, one district hospital, 35 Health centers and 182 health posts. Based on the 2007 census conducted by central statistical authority, this zone has the total population of 652,531, of whom 323,348 are men and 319,183 are women. The zone has population density of 33.89 while 75,241 or 11.53% are urban inhabitants, a further 398 are pastoralists.

Health facilities giving chronic follow up treatment for epileptics are included in the study. There are 541 adult epileptic patients attending at public health facilities of Bench Maji zone and they are attending at health facilities of Mizan Tepi university teaching hospital (200); Bachuma hospital (110); Shewa Bench health center (89); Sheko health center (72) and Mizan health center (70).

### Sample Size Determination and Sampling Procedures

The sample size was determined by using single population proportion formula. The following assumptions were made, marginal error (d) that was tolerated in either sides of the true proportion to be 5%, and using 95% confidence level,  $\alpha=0.05$  and adding 10% to compensate for non-responses and the proportion of knowledge in epileptic patients about their illness 50%.

$$n = \frac{(z \alpha/2)^2 (p (1-p))}{d^2} = \frac{(1.96)^2 (0.5) (0.5)}{(0.05)^2} = 384$$

Finally finite population correction formula was considered and the final sample size was 247. Systematic sampling method was employed to get proportionally allocated sample from each health facility. For all health facilities sampling interval was 2 and between 1 and 2, 1 was randomly selected by using lottery method. The first comer patient for follow-up in the beginning day of the study at each health facility was taken as a first sample and then taking every 2 interval until the required sample is desired.

## Measurements

Data were collected using semi-structured, pretested and face to face interview questionnaire prepared by adapting from different studies, which was developed in local language Amharic to be understood by every respondents. The questionnaire had four components consisted providers socio-demographic characteristics, knowledge part questions adapted from similar research which assessed epilepsy knowledge, drug adherence questions adapted from modified eight item Morisky Medication Adherence Scale (MMAS-8) and questions related to clinical related variables [16,17]. One day orientation was given for five selected diploma nurses who collected data.

Before commencement of actual data collection pretest was done on 12 patients at Tepi general hospital which is found in Sheka zone and appropriate corrections were made before applying the tools for actual study.

## Data Analysis

Data consistency was checked and entered into Epidata version 3.1 and then was exported to SPSS version 21 for analysis and was summarized by using descriptive statistics. Tables and figures were used to present the data. Bivariate logistics regression was used to identify factors associated with the knowledge of epileptics about the illness based on adjusted odds ratio (AOR), 95% CI and P-value <0.25.

We used the enter approach in multivariate model, while Hosmer-Lemeshow statistic was used for model diagnostics. Multivariate logistic regression model was used to control the possible effect of confounders, and finally the variables that had independent association with the dependent variable were identified on the basis of AOR, with 95% CI and P-value <0.05. The variables were entered to the multivariate model using the backward logistic regression.

## Ethical Considerations

Ethical clearance was obtained from ethical review board of the institute of health sciences, Jimma University, to conduct the study. Permission letter was provided to the administrators of each respective health facility of study site before data collection. Written informed consent was obtained from respondents after giving them information about the study. The right to refuse or to withdraw from the study was also informed and confidentiality and privacy was ensured.

## Results

### Socio-Demographics Characteristics of Participants

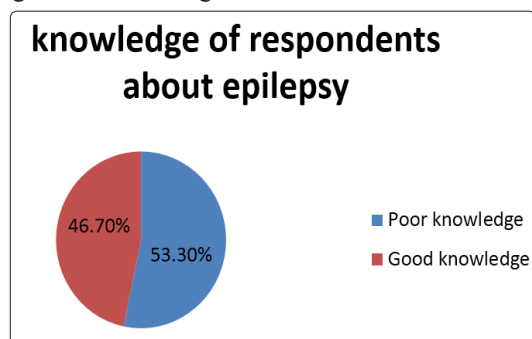
Out of the 247 aimed samples, 3 withdrawn from the study and 244 involved in the study making a response rate of 98.8%. Table 1 shows the socio-demographic characteristics of the participants. About 160(65.6%) were males; 82 participants (33.6%) were in age group of 25-34. Out of the total respondents, 132(54.9%) were rural dwellers and 55(22.5%) of them cannot read and write.

**Table 1: Socio-Demographic Characteristics of Participants in Public Facilities in Bench Maji Zone, Southern Ethiopia, March - April 2017 (n=244)**

Characteristics		Frequency	%
Sex	Male	160	65.5
	Female	84	34.4
Age group	18-24	83	34
	25-34	82	33.6
	35-44	47	19.3
	>=45	32	13.1
Marital status	Single	99	40.6
	Married	126	51.6
	Divorced	7	2.9
	Widowed	12	4.9
Educational status	Can't read & write	55	22.5
	Only read & write	27	11.1
	1-4	47	19.3
	5-8	42	17.2
	9 -12	46	16.8
	College & university	32	13.1
	Urban	112	45.9
Residence	Rural	132	54.9
	Farmer	102	41.8
Occupation	Gov't employee	43	17.6
	Student	43	17.6
	Daily laborer	28	11.5
	House wife	13	5.3
	Jobless	15	6.1
	<600 ETB	108	44.3
Monthly income	601-1400 ETB	93	38.1
	1401-2500 ETB	9	3.7
	2501-3500ETB	19	7.8
	3501-5000ETB	15	6.1

**Knowledge of Respondents about Epilepsy**

The finding shows that a total of 130(53.3 %) respondents had poor knowledge as shown in Figure 1.



**Figure 1: Percentage Distribution of Knowledge of Participants about Epilepsy in Public Health Facilities in Bench Maji Zone Southern Ethiopia, March - April 2017(n=244)**

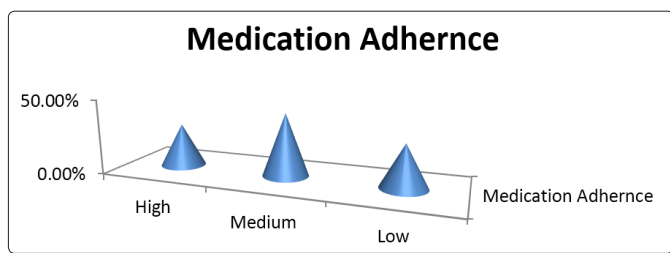
The present study shows the mean knowledge score was 5 with minimum score of 0 and maximum score of 10. Ninety five (38.9%) respondents considered epilepsy is contagious, while 48(19.7%) didn't know whether it is contagious or not. Nearly half 127(52%) of participants reflected epileptic can be capable as others, 142(58.2) considered epileptic can be employed in government institution and 136(55.7%) knew the illness can be controlled by medications (Table 2).

**Table 2: Knowledge of Respondents about Epilepsy in Bench Maji Zone, Southern Ethiopia, March –April 2017(N=244)**

Variables	Possible response	Frequency	%
Is epilepsy due to sine from parents?	Yes	95	38.9
	No	101	41.4
	I don't know	48	19.7
Is epilepsy due to sine from parents?	Yes	96	39.3
	No	105	43.0
	I don't know	43	17.6
Can epileptic clench hand with others?	Yes	101	41.4
	No	95	38.9
	I don't know	48	19.7
Is epilepsy due to supreme natural?	Yes	110	45.1
	No	101	41.4
	I don't know	33	13.5
Are People with epilepsy can capable as other people?	Yes	127	52.0
	No	89	36.5
	I don't know	28	11.5
Can a person with epilepsy marry?	Yes	115	47.1
	No	36	14.8
	I don't know	93	38.1
Can people with epilepsy live with their parents?	Yes	118	48.4
	No	89	36.5
	I don't know	37	15.2
Can epileptic employed in any institution?	Yes	142	58.2
	No	48	19.7
	I don't know	54	22.1
Epileptic should isolate themselves from social.	Yes	52	21.3
	No	145	59.4
	I don't know	47	19.3
Can epilepsy controlled with medications?	Yes	136	55.7
	No	58	23.8
	I don't know	50	20.5

**Anti-Epileptic Drug Adherence**

About 103 (42.2%) of participants were have low adherence to their anti-epileptic drugs, while 71(29.1%) were have high adherence and 70(28.7%) had medium adherence to their drugs (Figure 2).



**Figure 2:** Level of Medication Adherence among Epileptics in Bench Maji Zone, Southern Ethiopia, March to April, 2017(n=244)

Regarding medication adherence items, 200(82%) of the study participants did not forget for sometimes in taking medications, while more than half percent, 167(68.8%), of the respondents has no any history in forgetting for any days in the past two weeks in taking their medications. One hundred ninety six (80.3%) answered yes for the question "have you taken your medications yesterday" (Table 3).

**Table 3: Anti-Epileptic Medications Adherence among Epileptics in Bench Maji Zone, Southern Ethiopia, March-April, 2017, (n=244)**

Variables	Possible response	Frequency	%
Do you sometimes forget to take your medications?	No	200	82.0
	Yes	44	18
Over the past 2 weeks were there any days when you did not take your medicine?	No	167	68.4
	Yes	77	31.6
Have you stopped taking your medications without informing to health care provider because you felt worse when took it?	No	208	85.2
	Yes	36	14.8
When you travel outside from home do, you sometimes forget taking your medications?	No	209	85.7
	Yes	35	14.3
Did you take your medications yesterday?	No	48	19.7
	Yes	196	80.3
When you feel like your epilepsy is under control do you Sometimes stop taking medications?	No	210	86.1
	Yes	34	13.9
Do you ever feel hassled about sticking to your treatment plan?	No	210	86.1
	Yes	34	13.9
How often do you have difficulty remembering in taking your medications?	Once in while	1	.4
	All the time	31	12.7
	Never	212	86.9

### Clinical Related Variables

More than half of the respondents, 134(54.9%) were have no seizure attack during the last month at the time of the study, while half of the participants had an age onset of epilepsy between 12 and 24 years old and nearly half (48.8%) of them had stayed with epilepsy for more than eleven years (Table 4).

**Table 4: Clinical Related Characteristics among Epileptic Patients in Bench Maji Zone, Southern Ethiopia, March –April, 2017 (n=244)**

Clinical related variables	Responses	Frequency	%
Seizure frequency in month	None	134	54.9
	1-2	57	23.4
	>=3	53	21.7
Age at onset of disease in years	<=11	55	22.5
	12-24	122	50
	>=25	67	27.5
Duration of illness in years	<1	22	9
	2-5	22	9
	6-10	81	33.2
	>=11	119	48.8
Comorbidity	Yes	23	9.4
	No	221	90.6
Comorbid illness type	Hypertension	4	17.4
	Depression	10	43.5
	Diabetic Mellitus	9	39.1
Therapy	Mono-therapy	217	88.9
	Poly -therapy	27	11.1

### Factors Associated With Knowledge about Illness among Participants

In the bivariate logistic regression analysis, knowledge was significantly associated with, living status, educational status, monthly income, seizure frequency, and age at onset of epilepsy, duration of epilepsy and medication adherence. Table 5 showed the multivariate logistic regression analysis; knowledge was significantly associated with monthly income, seizure frequency, age at onset and duration of epilepsy.



**Table 5: Factors Associated with Knowledge Patients about Epilepsy in Health Facilities of Bench Maji Zone South West Ethiopia, 2017**

Variables		Knowledgeable				COR(95%CI)	AOR(95% CI)
		Yes	%	No	%		
living status	With family	99	49.3	102	50.7	1	1
	Alone	9	39.1	14	60.9	0.6(0.27,1.6)*	.82(.304,2.21)
	With relatives	6	31.6	14	68.4	0.4(1.74,1.3)	.50(.165 1.539)
educational status	Formal education	77	47.5	77	52.5	1	1
	No formal education	29	35.4	53	64.6	2.01(1.16,3.489)*	1.683(.84, 3.2)
Monthly income	<600 ETB	50	58.7	71	41.3	.201(.06, .647)	1.683(.84, 3.2)
	601-1400 ETB	31	46.3	36	53.7	.246(.073, .826)	.248(.073,1.044)
	1401-2500 ETB	10	66.7	5	33.3	.571(.122, 2.679)	.367(.104,1.687)
	2501-3500 ETB	9	39.1	14	60.9	.184(.046, .738)*	.746(.151,4.169)
	3501-5000 ETB	14	77.8	4	22.2	1	.2 (.048,.897)**
duration of epilepsy in years	<1	27	60	18	40	.45(.210, .961)*	.39 (.159,.953)**
	2-5	29	40.3	43	59.7	.545(.249, 1.194)	.627(.244,1.681)
	6-10	27	45	33	55	.574(.267, 1.2)5	.549(.200,1.524)
	>=11	31	46.3	35	53.7	1	1
Age at onset of epilepsy in years	<6	8	57.1	6	42.9	1	1
	6-11	12	42.9	16	57.1	.563(.154, 2.057)	.526(.135,2.051)
	12-17	30	55.9	24	44.1	.938(.286, 3.072)	.770(.209,2.839)
	18-24	40	51.9	37	48.1	.811(.257, 2.5)	.669(.186,2.409)
	25-34	14	18.2	33	81.8	.318(.093, 1.088)*	.220 (.053, .912)**
	>=35	10	41.7	14	58.3	.536(.141, 2.03)	.423(.088,2.023)
Seizure frequency per month	None	71	53	63	47	1	1
	1-3	26	45.6	31	54.4	.744(.400, 1.386)	.836(.419,1.668)
	>=3	17	32.1	36	67.9	.419(.215, .818)*	.416 (.194,.893)
Medication adherence	Low	45	43.7	58	56.3	1.01(.544, 1.84)*	1.07(.534,2.160)
	Medium	38	54.3	32	45.7	1.52(.789, 2.97)	1.31(.603,2.854)
	High	31	43.7	40	56.3	1	1

\* Significantly associated at P<0.25 \*\* significantly associated at P<0.05, COR; crude odds ratio, AOR; adjusted odds ratio.

The result of multivariable logistic regression analysis showed that those who have monthly income between 2501-3500 ETB were 80 % times less likely to know about epilepsy compared to those with monthly income more than 3501 ETB(AOR:0.2 ,95 %CI: 0.048,.897). The finding also depicted that patients' duration of illness is significantly associated with knowledge and patients who have duration of epilepsy less than one year were 61% times less likely to know about epilepsy when compared with patients with duration more than eleven years(AOR:0.39, 95%CI: 0.159,0.953). Another significantly associated variable was age at onset of epilepsy. Patients whose onset of epilepsy between 25-34 years old were 78% times less likely to know about epilepsy compared to age onset less than 6 years old(AOR: 0.22, 95% CI:0.053, 0.912).

### Discussion

This study revealed that 130(53.3 %) of patients did not know the fact about their illness. Truly; some knew epilepsy as contagious while others considered epilepsy as sin from family; 58(23.8%) perceived

epilepsy cannot be controlled by medications and 110(45.1%) considered epilepsy as from supreme natural power. Even; some of the respondents considered them as they cannot marry, 89(36.5%) aware that, they cannot function as others and 89(36.5%) perceived epileptic cannot live with parents.

Some of the responses for example; 110(45.1%) reflected epilepsy is due to supreme natural power. This finding was much higher than study done in Jimma University specialized teaching and referral hospital where, only 10% stated epilepsy is due to supreme natural power [18]. The reasons for these variation maybe socio-economic and cultural variations as the present study are conducted in many rural parts of the zone and the variation in set up May also plays its role.

This finding was however inconsistent with another studies where the level of knowledge ranges from 80-100 % [19]. The finding also showed too wide gap from developed countries like United States of America, United Kingdom, New Zealand, and France

[20-23]. The possible explanation for this discrepancy is due to the fact that there is an enhanced and better education program in these developed countries. More over the socio-demographic and economic factors may brought this discrepancy as study participants in developed countries have good status which expose them to media and significant others in sharing the fact about epilepsy. This poor knowledge may abstain subjects from acquiring treatments and may be accompanied by different psycho-social difficulties.

In present study 23(9.4%) of study participants were have comorbidity. Among comorbid illness, depression was the most common (43.5%). The coexistence of this comorbidity with epilepsy in epileptics can affect the quality of life of epileptics. This study also showed that, 200(82%) of study participants did not forgot in taking their medications although having poor knowledge about epilepsy. This may be due to compliance to treatment after counseling from medical specialists.

According to the analytical part of this study, monthly income, duration of the diagnosis of the epilepsy and age at onset of the epilepsy were statistically associated with the knowledge. Moreover, patients who have monthly income between 2501-3500 ETB were 80 % times less likely to know about epilepsy compared to those with monthly income more than 3501 ETB(AOR:0.2 ,95 %CI: 0.048,.897). This finding is supported by studies from developed countries where monthly income can be considered good and as result they had better knowledge about epilepsy [23,24].

Patients duration of illness is significantly and negatively associated with knowledge, where patients who have duration of epilepsy less than one year were 61% times less likely to know about epilepsy when compared with patients with duration more than eleven years(AOR:0.39, 95%CI: 0.159,0.953). This finding is supported by study from Jimma University specialized teaching and referral hospital [18]. This may be due to the fact that epileptics who stayed for long time and followed for long time may more aware about their illness. The study also depicted that; patients whose onset of epilepsy between 25-34 years old were 78% times less likely to know about epilepsy compared to age onset less than 6 years old(AOR: 0.22, 95% CI:0.053, 0.912). Similarly as the duration of illness is long it can be realized and recognized gradually through sharing of information from health care providers and significant others.

## Conclusion

The study identified that the proportion of participants were have poor knowledge about epilepsy. Economic factor, duration of illness and age at onset of epilepsy were founded as the predictors. Those who have good economic status demonstrate good knowledge. The duration of epilepsy and age at onset of epilepsy remained as the factors for poor knowledge and particular attention should be given during initial diagnosis.

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