Original Article

Determining Treatment Levels of Comorbid Psychiatric Conditions in People with Epilepsy Attending Selected Local Clinics in Lusaka, Zambia

LB Venevivi[1], EK Mbewe[2], R Paul[1]

[1]University of Zambia, School of Medicine, Department of Psychiatry, Lusaka
[2]Chainama College of Health Sciences, Lusaka

ABSTRACT

Background: Psychiatric co-morbidities occur more frequently in patients with epilepsy but are usually under-treated. Treatment of these disorders is key to reducing mortality via suicide and other causes. This study determined the levels of treatment of psychiatric co-morbidities at clinics in Lusaka, Zambia.

Methodology*:* This was a cross-sectional study at 5 randomly selected clinics within Lusaka with 397 respondents. These were patients attending epilepsy clinic for over 6 months, aged 18years and older. The Brief psychiatric rating scale (BPRS) and a self-designed questionnaire for demographics and medical history were administered to determine how many needed treatment compared to those that were on actually treatment.

Results: Of the 397 participants enrolled, only 14(3.5%) had psychiatric disorders already diagnosed by the local staff and yet screening with BPRS showed that up to 158(39.8%) had comorbidity symptoms. 13(92.8%) of those pre-diagnosed with psychiatric comorbidity were on treatment. There was a significant association between male gender and psychiatry diagnosis (p=0.017).

Conclusion: The detection and treatment rate of psychiatric comorbidity in epilepsy stands at 3.5% of the epilepsy population and comorbidity prevalence at about 39%. Less than 10% of those eligible receive treatment. This low treatment rate may contribute to poor treatment outcomes.

Corresponding author:
Dr. L.B. Venevivi
University of Zambia School of Medicine
Department of Psychiatry
P. O. Box 50110
Lusaka

INTRODUCTION

Psychiatric co-morbidities, particularly mood and anxiety disorders, occur relatively frequently in patients with epilepsy compared to the general population.[1] They affect the quality of life and contribute significantly to premature mortality if not treated appropriately and hence their importance. [2-3] The impact of an untreated comorbid psychiatric disorder on a patient's quality of life is significant - and can be greater than that of the seizure disorder itself.[3-4] Despite their relatively high prevalence, psychiatric disorders often remain unrecognized and untreated.[5-6] Furthermore, even in centres where detection is high, treatment of psychiatric comorbidity remains low.[7] This is partly because, in caring for people with epilepsy, clinicians often target seizure freedom as their biggest priority. The psychiatric and cognitive disturbances are often ignored, unless they are severe enough to cause major disturbances or disability.[8]

Worldwide, it is estimated that 20-30% of patients with epilepsy have psychiatric disturbances and this is thought to be an underestimation due to low screening for psychiatric conditions[9]. In Zambia, it is estimated that as many as 49% of people with epilepsy have a comorbid anxiety or depressive disorder.[5]

Therefore, this study looked into the treatment of co-morbid psychiatric conditions in people with epilepsy at selected health centres within Lusaka; covering the following key areas:

Key Words: *Psychiatric comorbidity, detection, treatment*

1. Number of those identified, and
2. Number of those who received any form of treatment

Information from this study was aimed at helping to strengthen the existing screening and management systems of psychiatric co-morbidities in epilepsy.

METHODOLOGY

Study Design

This was a cross sectional study

Study Setting

This study was conducted at five randomly selected institutions within Lusaka namely; Chainama Hills Hospital and Levy Mwanawasa Hospital which are referral hospitals and then Chilenje Clinic, Matero Reference Centre and Chawama Clinic at primary level.

Study Population

The study included patients aged 18 years and older with a clinical diagnosis of epilepsy attending outpatient clinic for their reviews at local clinics for at least 6 months and excluded those below 18years of age, people with provoked seizures and those who had diagnosed less than 6 months prior to the study.

Data collection

Patients in each Health Centre register were assigned numbers on pieces of paper which were then picked by an independent person from an opaque plastic bag. The selected clients were then targeted for enrolment on the given review date when they visited the centre. The sample size in each health centre was proportionate to the epilepsy patient population that each of the clinics serves according to the centre statistics for the year 2013.

Participants were screened for psychiatric comorbidity using the Brief Psychiatric Rating Scale. Clinical records were reviewed for diagnosis of a psychiatric comorbidity and any treatment effected. Based on those tested positive, a treatment gap was then calculated.

Data Analysis

Data was analysed using SPSS version 18 in two stages namely: univariate analysis was to obtain, counts, percentages, and measures of central – tendency and, bivariate analysis using the chi-square to come up with associations between our variables of interest. (i.e. Gender, marital status, medication received and clinic attended) on one hand and the dependent variable (i.e. Treatment of comorbidity) on the other. No further multivariate analysis was engaged. The level of significance was set at $p \leq 0.05$ for all statistical analyses. All confidence intervals were at 95% level.

Ethical Consideration.

This study had ethical clearance from ERES converge. Participation was voluntary and no consequence arose where consent was denied.

RESULTS

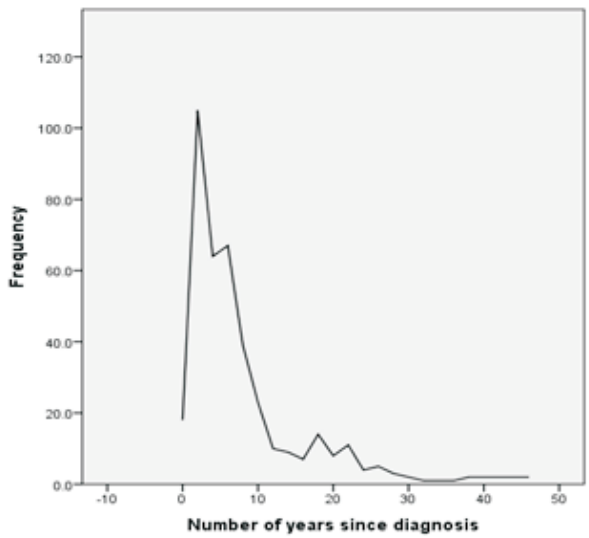
Three hundred and ninety- seven patients were enrolled in this study (Table 1). The youngest patient was 18 years while the oldest patient was 67 years. The mean age in years was 31.2[S.D ±9.7]. One and hundred and forty-two (35.8%) patients were attending Chainama Hospital, 71 (17.9%) attended Levy Mwanawasa Hospital, 63 (15.9%) attended Chilenje Clinic, 61 (15.4%) attended Chawama Clinic, and 60 (15.1%) attended Matero Clinic

Table 1: Demographic Characteristics of Patients

Variable	Values	Frequency (n=397)	Percent (%)
Sex	Male	225	56.7
	Female	172	43.3
Age	<21 years	42	10.6
	21-30 years	171	43.1
	31-40 years	120	30.2
	41-50 years	46	11.6
	>50 years	18	4.5
Marital status	Single	211	53.1
	Married	134	33.8
	Separated	17	4.3
	Divorced	21	5.3
	Widowed	14	3.5
Highest education attained	None	28	7.1
	Primary	144	36.3
	Secondary	180	45.3
	Tertiary	45	11.3
Employment status	Unemployed	183	46.1
	self-employed	87	21.9
	Formal employment	50	12.6
	Informal employment	65	16.4
	not assessed	12	3.0

The majority of the patients (80%) had been diagnosed in the past ten years. The median number of years lived with diagnosed epilepsy was 5 (IQR=2-9) as in Figure 1.

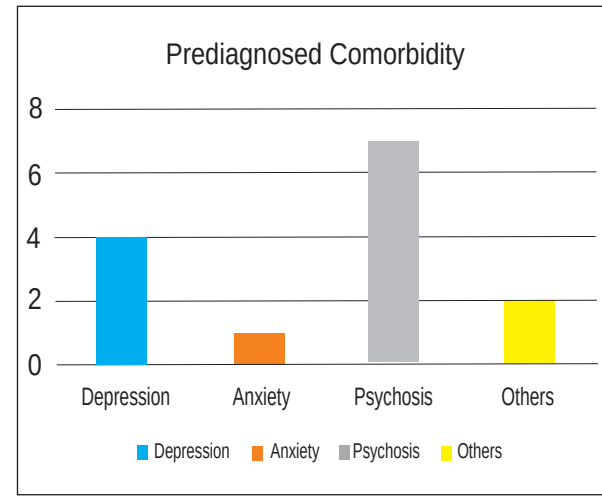
Figure 1: Number of years lived with Epilepsy



For epilepsy treatment, 210 (52.9%) patients were on Carbamazepine alone, 73 (18.4%) were on Carbamazepine combined with Phenobarbital, 38 (9.6%) were on Phenobarbital alone, 29 (7.3%) were on Sodium Valproate and 16 (4.0%) were on carbamazepine combined with sodium Valproate. Five (1.3%) respondents took Haloperidol, 2(.5%) took fluoxetine, 1(.3%) took amitriptyline and another 5(1.3%) took other drugs such as folic acid, benzodiazepines and vitamin B complex that were not unique to psychiatry.

Of all 397 participants, only 14(3.5%) were found to have psychiatric disorders already diagnosed by the local staff with psychosis being the most commonly diagnosed psychiatric condition found in 7(50%). In the rest, no diagnosis of psychiatric comorbidity had been made prior to the screening. Two respondents suffered from psychiatric conditions outside the scope of this study (classified as "Others") and both had alcohol abuse related disorders Figure 2.

Figure 2: Distribution of comorbid conditions already diagnosed



Thirteen of those pre-diagnosed to have psychiatric comorbidity were on some form of treatment while one had no recorded treatment. Pharmacotherapy was used in all patients and in 6 of these it was combined with psychotherapy or counselling. No patient received psychotherapy as a standalone treatment.

When screening was done, results for the BPRS were lumped to three categories as follows: Mild (BPRS score 2-3), Moderate (BPRS score 4-5) and severe (BPRS score 6-7).

When symptoms were grouped by the psychiatric condition they represent, anxiety was reported by 158(39.8%) of the respondents. Tension as a feature of anxiety that is observed by the examiner was found in 91(33.0%) of the respondents. The prevalence of anxiety symptoms in this population therefore ranged from 33.0-39.8%. (Table 2).

Table 2: Anxiety Symptoms among Patients

BPRS Rating	No symptoms		Mild		Moderate		Severe		Total	
	n	%	n	%	n	%	n	%	n	%
Somatic concern	306	77.3	82	20.7	8	2.0	0	0.0	396	**100.0**
Anxiety	239	60.2	123	31.0	27	6.8	8	2.0	397	**100.0**
Tension	305	77.0	66	16.7	23	5.8	2	0.5	396	**100.0**

n-Frequency, % - percentage

Table 3 shows the distribution of depressive symptoms from the screening tool. Depressed mood was reported in 156(39.4%). Guilt feelings which are an accompanying feature of depression were found in 124 respondents with 93(23.5%) and 31(7.1%) feeling mildly and moderately guilty respectively. Emotional withdrawal was present in 112(31.4%). Motor retardation was less common and found in 39(9.8%).

Table 3: Depressive Symptoms

BPRS Depressive Symptoms	No symptoms		Mild		Moderate		Severe		Total	
	n	%	n	%	n	%	n	%	n	%
Emotional withdrawal	285	71.8	90	22.7	21	5.3	1	0.3	397	**100.0**
Guilt feelings	271	68.6	93	23.5	31	7.8	0	0.0	395	**100.0**
Depressed mood	240	60.6	99	25.0	50	12.6	7	1.8	396	**100.0**
Motor retardation	358	90.2	31	7.8	5	1.3	3	0.8	397	**100.0**

n-Frequency, % - percentage

Table 4 shows the frequency of distribution of psychotic symptoms. Suspiciousness was the most prevalent symptom found 14.4% of the population. The least common psychotic symptom was hallucinatory behaviour which was found in 9.1% of the population

Table 4: Psychotic Symptoms

Psychotic Symptoms	No symptoms		Mild		Moderate		Severe		Total	
	n	%	n	%	n	%	n	%	n	%
Conceptual disorganisation	353	88.9	40	10.1	4	1.0	0	0.0	397	**100.0**
Hostility	351	88.4	37	9.3	9	2.3	0	0.0	397	**100.0**
Suspiciousness	340	85.6	52	13.1	4	1.0	1	0.3	397	**100.0**
Hallucinatory behaviour	361	90.9	22	5.5	13	3.3	1	0.3	397	**100.0**
Uncooperativeness	380	95.7	12	3.0	5	1.3	0	0.0	397	**100.0**
Unusual Thought content	374	94.2	15	3.8	8	2.0	0	0.0	397	**100.0**
Blunted affect	371	93.5	23	5.8	3	0.8	0	0.0	397	**100.0**

n-Frequency, % - percentage

Cochrane's alpha was conducted to test for reliability of the analysis. The results indicated a very high level of reliability (á=.861).

Tests of Association

Chi Square tests revealed that males were more likely to have a psychiatric diagnosis than female patients ($?^2$=5.711, p=0.017). There was also a significant association between gender and medicines received ($?^2$=12.293, p=0.031) with more male patients were put on Phenobarbital than female patients. More female patients were put on Sodium Valproate and Carbamazepine/Sodium Valproate combination than male patients.

Table 5: Chi-Square Tests for Medication history and sex

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	12.293[a]	5	.031	.030		
Likelihood Ratio	12.577	5	.028	.031		
Fisher's Exact Test	12.192			.031		
Linear-by-Linear Association	.073[b]	1		.813	.408	.026
N of Valid Cases	390					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.93.

b. The standardized statistic is -.270.

DISCUSSION

Sex Distribution of the sample

Our study found that health centre staff diagnosed males more with psychiatric diagnoses than the female participants ($?^2$=5.711, p=0.017). While other factors may be at play, such as substance abuse in which is more common in males, it is also possible that female participants were less likely to be develop comorbidity as more females were on Carbamazepine and Sodium Valproate compared to the males who were more likely treated with Phenobarbitone which has psychiatric side effects. Sodium Valproate and Carbamazepine are associated with positive psychotropic effects as compared to Phenobarbitone and result in better mood outcomes[10].

Age Distribution

The number of respondents beyond the age of 35 drops rapidly. This raises concern as epilepsy is a lifelong

diagnosis and incidence increases with age, we expect the larger population to be composed of the older patients[11]. This coupled with the time lived with the diagnosis of epilepsy may be pointing to a shortened life span in this group. These results are comparable to a Swedish study which found that life expectancy for those with comorbidities was drastically shortened compared to both the general population and those with epilepsy without the psychiatric comorbidity[12]. Mortality rates in such comorbid states was also demonstrated in a study done in Tanzania in which almost 70% of the participants had died by the end of a thirty year period with a further 11% being lost to follow up. Their study demonstrated that a normal mental state was associated with a better survival rate even with poor seizure control and the majority of deaths were associated with a poor mental state[13].

Years lived with epilepsy

The majority of the respondents had lived with epilepsy for less than 10 years. In fact, the number of years lived with epilepsy sharply dropped beyond 5 years. Other studies suggest mortality is highest in the early years of diagnosis and declining the longer one lives with epilepsy[14]. Our study shows the opposite and can imply that the acute needs such as seizure control are well dealt with by practitioners but the long term complications such as the comorbidities are not well dealt with and result in poor treatment outcomes including mortality[8].

Antiepileptic drug usage

Carbamazepine is the most commonly used drug (79.8%) both as a stand-alone therapy and in combination with another. The use of carbamazepine alone may have the benefits of being a mood stabilizer to the patient and this property is shared by sodium valproate and Lamotrigine[10]. The most common combination of antiepileptic drugs was carbamazepine with Phenobarbital which was found in 74(18.7%) of the patients. This combination is associated with poor epilepsy control as the two drugs interact with each other and thereby decreasing the therapeutic effect[15]. Further, polypharmacy is directly linked to increased psychiatric comorbidity and worsens the outcome of treatment[16].

Another finding of note was that there was a higher chance of a female being on sodium valproate compared to a male. While it is accepted that valproate is associated with a lower incidence of mood disorders and has positive psychotropic effects[10], it is strongly associated with birth defects when used in women of child bearing age and should be avoided[15].

Depression

Only 4 (1%) of the study population was being treated for depression. The screening tool revealed that depressive symptoms were present in 28-39% of the respondents. This means that a larger proportion of depressed people with epilepsy do not receive any treatment at all. This finding is similar to a Norwegian study which generally found lower treatment rates of psychiatric conditions in the epilepsy population as compared to the general population despite psychiatric conditions being more prevalent in the epilepsy group[7]. The fact that the majority of people with depressive symptoms are not being treated is a serious matter that needs urgent attention if we are to improve the survival rate in epilepsy.

Anxiety

Our prevalence for anxiety was lower than that of a study in Togo and Benin where the prevalence of anxiety among PLWE was found to be at 66.0% and 84.1% respectively[17]. African studies including ours may have higher prevalence rates compared to western ones due to the factors such as stigma, poverty, unemployment and drug side effects which result from a restricted variety of medicines available to treat epilepsy. The low treatment levels for anxiety also call for serious attention as anxiety limits the quality of life and is a serious cause of morbidity. It can limit one's ability to engage with the environment in order to earn a meaningful living.

Psychotic disorders

Psychotic symptoms were present in the range 9.1% to 14% of the participants. However, only 7(1.8%) of the population was detected and on treatment. Psychosis in epilepsy can be primary and independent of the epilepsy or be secondary to the seizure. Secondary ones are classified as preictal, postictal or interictal depending on

whether it happens just before the seizure, just after the seizure or in the interval between seizures where the patient is seizure free respectively. Interictal psychosis may mimic schizophrenia[18]. However it is also known that psychosis due to epilepsy has a more benign course and responds more favourably to even low doses of antipsychotics than schizophrenia or other primary psychotic disorders[19]. It therefore becomes important to treat this psychosis as it is much easier to treat with good outcome. Psychosis tends to cause people not to fit into the community well and this increases the stigma and reduces their productivity.

CONCLUSION

The treatment and detection levels of psychiatric comorbidity in epilepsy in Lusaka District stand at 3.5% of the epilepsy population. Therefore, less than 10% of those eligible actually get treatment. This low treatment is despite the knowledge that psychiatric conditions are commoner in epilepsy. Pharmacotherapy is the most widely used means of treatment with all those diagnosed with a comorbidity being on some medication. No isolated use of psychotherapy was found. There remains a big possibility that as a result of this poor treatment rate, there is a high mortality and a poor survival rate in the Lusaka epilepsy population as demonstrated by the results of this study.

ACKNOWLEDGEMENTS

A special appreciation goes to Tropical Health Education Trust (T.H.E.T), for sponsoring part of this study, Miss Carol Bulaya, Dr Kevin Zimba, Dr Gilbert Blackwood and all the doctors at Chainama Hills Hospital.

REFERENCES

1. Tellez-Zenteno, J. F, Patten, S. B, Jetté, N, Williams, J and Wiebe, S. Psychiatric Comorbidity in Epilepsy: A Population-Based Analysis. *Epilepsia* 2007, 48: 2336–2344.
2. Birbeck, G, Chomba, E, Atadzhanov, M, Mbewe E. and Haworth, A. The social and economic impact of epilepsy in Zambia: A cross-sectional study., *The Lancet Neurology* Jan 2007, Vol. 6, Issue 1, Pages 39-44
3. Perrine, K, Hermann, B.P, Meador, K.J and others. The relationship of neuropsychological functioning to quality of life in epilepsy. *Arch Neurology* 1995; 52:997-1003
4. Lehrner, J, Kalchmayr, R, Serles, W, Olbrich, A, Pataraia, E, Aull, S, Bacher, J, Leutmezer, F, Gröppel, G and Deecke, L. Baumgartner Health-related quality of life, activity of daily living (ADL) and depressive mood disorder in temporal lobe epilepsy patients. *Seizure* 1999.: *Volume 8, Issue 2*, *Pages 88-92*
5. Mbewe, K.E, Uys, R. L and Birbeck, L. G. The Impact of a Short Depression and Anxiety Screening Tool in Epilepsy Care in Primary Health Care Settings in Zambia. Seizure 2013 Jun;22(5):401-2
6. *Margrove, K, Mensa, S, Thapar, A and Michael K. Depression screening for patients with epilepsy in a primary care setting using the Patient Health Questionnaire-2 and the Neurological Disorders Depression Inventory for Epilepsy. Epilepsy and Behaviour 2011; 21(4): 387-390*
7. Karouni, M, Henning, O, Larsson, P.G, Johannessen, S.I and Johannessen, P. Pharmacological treatment of psychiatric comorbidity in patients with refractory epilepsy. *Epilepsy and Behaviour* 2013; 77-81. 1613–1622
8. Kanner, A.M, Barry, J.J and Gilliam, F. Psychiatric Comorbidities in epilepsy: Streamlining Recognition and Diagnosis to Improve Quality of Life. *Counselling Points* 2009; (1):1-15.)
9. Vuilleumier, P and Jallon, P. Epilepsy and psychiatric disorders: epidemiological data. *Rev Neurology (Paris)* 1998; 154(4):305-17).
10. Ketter T. A, Post R.M and Theodore W.H. Positive and negative psychiatric effects of antiepileptic drugs in patients with seizure disorders. *Neurology* 1999; 53(Suppl 2):S53-67.
11. Wallace, H, Shorvon, S and Tallis T. Age-specific incidence and prevalence rates of treated epilepsy in an unselected population of 2,052,922 and age-specific fertility rates of women with epilepsy. *The Lancet* 1998, Vol 352 (9145):1970-1973.
12. Fazel, S, Wolf, A, Långström, N, Newton, C.R and Lichtenstein P. Premature mortality in epilepsy and the role of psychiatric comorbidity: a total population study. *The Lancet* 2013; 382, Issue 9905, Pages1646-165

13. Jilek-Aall, L and Rhwiza, H. T. Prognosis of Epilepsy in a Rural African Community: A 30-Year Follow-Up of 164 Patients in an Outpatient Clinic in Rural Tanzania. *Epilepsia* 1992. 33: 645–650.
14. Cockerell, O.C, Sander, J, Hart, Y.M, Goodridge, D.M, Shorvon, S and Johnson, A.L, 1994. Mortality from epilepsy: Results from a prospective population-based study, *The Lancet*, Vol 344 pages 918 -921
15. David, S.A., Fleminger, S., Kopelman, M., Lovestone, S., Mellers, J.D. Lishman's Organic Psychiatry. London, United Kingdom. Wiley-Blackwell Publishers, 2009, Fourth Edition, ,pages 366-371
16. Harden, C.L. The comorbidity of depression and epilepsy- epidemiology, aetiology and treatment. *Neurology* 2002, S48-S55
17. Nubukpo, P, Preux P.M, Houinato, D, Radji, A, Grunitzky, E.K, Avode, G and Clement J.P. Psychosocial issues in people with epilepsy in Togo and Benin. *Epilepsy and Behaviour* 2004, Volume 5, issue 5, pages 722-727
18. Sachdev, P. Schizophrenia-like Psychosis and Epilepsy: The Status of the Association. *American Journal Psychiatry* 1998, volume 155 issue 3, Pages 325-336
19. Tadokoro, Y, Oshima, T and Kanemoto K. Interictal Psychoses in Comparison With Schizophrenia- A Prospective Study. *Epilepsia* 2007, Vol 48, Issue 12, Pages 2345- 2351