

Psychosocial Correlates of Depression in Children and Adolescents with Epilepsy in a Nigeria Neuro-Psychiatric Hospital

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Abstract

Background: Depression is mostly reported psychiatric disorders in children with epilepsy.

Aim: To investigate prevalence of depression among Nigeria children and adolescents with epilepsy and explore associated variables.

Methods: Study involved 57 participants between 7-18years, diagnosed of epilepsy in a Nigeria mental-health-institution. Depression and illnesses-perception were assessed using Child-Attitude-towards-Illness-Scale and Center-for-Epidemiology-Study-Depression-Scale respectively. Data was analysed using Spearman's Correlation Coefficients and multiple regression ($p < 0.05$).

Results: Participants were aged 13.8 ± 3.3 years with onset of seizure between 1-17 years (mode = 9 years) and presentation in the clinic between 2-17 years (mode = 11 years). About 40% were diagnosed of depression. About 44% had varied educational problems. There was significant correlation between depression and each of educational-level and seizure frequency at presentation. Seizure frequency predicted depression and felt-stigma. Parent's socio-economic status predicted seizure frequency.

Conclusion: There is high prevalence of depression in Nigeria children and adolescents with epilepsy. Epilepsy has negative impact on the psycho-social status of its sufferers.

Keywords: Depression; Children and adolescents; Epilepsy; Nigeria; Neuro-psychiatric hospital

Introduction

Psychiatric disorders in children with epilepsy are relatively gaining researcher's attention in Nigeria. Depression in children and adolescents with epilepsy is a common but often unrecognized disorder [1-4]. Most frequent psychiatric disorders in epileptics are depression, anxiety and attention deficit hyperactivity disorder [4-7]. Both epilepsy and depression are characterized by a chronic course and poor long-term psychosocial outcome [2]. Authors have identified psychiatric syndromes such as anxiety, depression, and behavioural affective and conversion disorders in people with epilepsy [8-18]. The risk for psychiatric disorders in people with epilepsy have been reported to be three to six times higher than observed in age matched apparently healthy population [1,15,18]. It has also been documented that children and adolescents with epilepsy experience more emotional and behavioural problems than healthy controls and others with chronic conditions [9-26].

There are reported higher incidences of psychiatric disorders in children and adolescents with epilepsy in Nigeria than the western world. In Nigeria, the prevalence of psychiatry disorders in children and adolescents with epilepsy ranged between 30% and 90% [27-29]. While studies from the western world reported prevalence ranging between 23% - 70.5% [4,30-33]. Several studies have reported the negative impact of epilepsy in a child's education, perceived stigma and quality of life [4,21-28]. The secondary impacts of caring for an epileptic child have also been reported with much social and financial burden on both the parent and the immediate society [4,20-22]. Some factors such as uncontrolled seizures, polytherapy and stigma have been indicted as major predictors of psychiatric disorders in epileptics [27].

In past decades, physicians caring for children and adolescents with epilepsy are getting aware of high prevalence of psychiatric disorders in them. However, controversy still exists over factors having important

role in the type of psychiatric disorders associated with epilepsy [4]. There is also dearth of literature on psycho-social factors associated with depression in children and adolescents with epilepsy. It is still unclear whether certain patient characteristics or epilepsy features are associated with specific psychiatric disorders. Recognition of these factors could lead to earlier diagnosis and intervention. Therefore, this study investigated the prevalence of depression among Nigeria children and adolescents with epilepsy and explored the variables that are associated with depression in patient with epilepsy in children and adolescents with epilepsy at the child and adolescent unit of Federal Neuro-Psychiatry Hospital, Yaba, Lagos, Nigeria.

Materials and Methods

The participants were 57 (30 males and 27 females) children and adolescents between 7 and 18 years, diagnosed of epilepsy by consultant Psychiatrist and depression using the fourth edition of the Diagnosis and Statistical Manual (DSM-IV) and tenth edition of the International Classification of Diseases (ICD-10) criteria at the Children and Adolescents Centre of a tertiary mental health institution in Nigeria. They were recruited consecutively for a period of 1 year excluding the severe mental retarded and psychotic ones. Their assent and the consent of their parents were obtained before participating in this

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study. The study was approved by the Research and Ethical Committee of the Federal Neuro-Psychiatric Hospital, Yaba, Lagos, Nigeria.

The participants or their primary caregiver gave information on socio-demographic and clinical variables and quality of life through a validated questionnaire. The Child Attitude towards Illness Scale which was completed by the patients through the guidance of their parents

Variables	Frequency	Percentages
Mother's Educational Level		
No-formal	2	3.5
Primary	8	14.0
Secondary	14	24.6
Post-secondary	25	43.9
Missing	8	14.0
Father's Educational Level		
No-formal	1	1.8
Primary	2	3.5
Secondary	15	26.3
Post-secondary	30	52.6
Missing	9	15.8
Personal Possessions		
most people	4	7.0
About average	34	59.6
<every other person	9	15.8
Missing values	10	17.5
House Hold Annual Income		
< N131, 988	20	35.1
N132, 000-N99, 988	11	19.3
N600, 000-N, 199,988	7	12.3
N1, 900,000	5	8.8
Missing	11	19.3
Seizure Frequency at Presentation		
Several times a day	11	19.3
Once/few times daily	4	7.0
Once/few times per week	5	8.8
Once/few times per month	16	28.1
Missing values	21	36.8
Seizure Frequency at Present		
None	13	22.8
Once/few times per week	3	5.3
Few Times per Month	11	19.3
Occasionally	16	28.1
Missing values	14	24.6
Residence		
A whole house	11	19.3
A flat/apartment	20	35.1
A room and a parlour	12	21.1
A room	5	8.8
Missing	9	15.8

Table 1: Socio-Demographic Variables and Clinical History of the Participants.

Variables	Frequency	Percentages
Bad Feeling about the Illness		
Very good	1	1.8
A little good	4	7.0
Not sure	2	3.5
A little bad	4	7.0
Very bad	46	80.7
Fairness of having the illness		
Very good	4	7.0
A little good	7	12.3
Not sure	2	3.5
A little bad	6	10.5
Very bad	38	66.7
Illness Interfering with ADL		
Very often	12	21.1
Often	4	7.0
Sometimes	15	26.3
Not often	5	8.8
Never	21	36.8
Illness Interfering with Adventure		
Very often	9	15.8
Often	3	5.3
Sometimes	10	17.5
Not often	12	21.1
Very often	23	40.4
Illness Interfering with Comparative Feelings		
Never	21	36.8
Often	9	15.8
Sometimes	16	28.1
Often	1	1.8
Very often	10	17.5
Good about the illness		
Very often	24	42.1
Often	2	3.5
Sometimes	15	26.3
Not often	7	12.3
Never	9	15.8
Sad about being Sick		
Never	10	17.5
Not often	7	12.3
Sometimes	12	21.1
Often	4	7.0
Very often	24	42.1
Feel Happy Despite Being Ill		
Never	12	21.1
Not often	13	22.8
Sometimes	12	21.1
Often	5	8.8
Very often	15	26.3
Feel Good As Other Kids		
Very often	19	33.3
Often	4	7.0
Sometimes	16	28.1
Not often	6	10.5
Never	12	21.1

Table 2: Functional Performance and Stigma Ratings of Participants.

Variables	Frequency	Percentages
Bothered By Things That Usually Don't Bother Me		
Not at all	40	70.2
A little	6	10.5
Some	7	12.3
A lot	4	7.1
I Did Not Feel Like Eating		
Not at all	36	63.2
A little	11	19.3
Some	4	7.0
A lot	6	10.6
Happy Despite My Family Wants To Make Me		
Not at all	37	64.9
A little	3	5.3
Some	8	14.0
A lot	9	15.8
Feeling Good Like Other Kids		
Not at all	11	19.3
A little	6	10.5
Some	4	7.0
A lot	36	63.2
Feeling I Couldn't Pay Attention		
Not at all	24	42.1
A little	10	17.5
Some	8	14.0
A lot	15	26.4
I Felt Down and Unhappy		
Not at all	32	56.1
A little	6	10.5
Some	9	15.8
A lot	10	17.5
I Felt Like I Was Too Tired To Do Things		
Not at all	28	49.1
A little	12	21.1
Some	6	10.5
A lot	11	19.3
I Felt Like Something Good Was Happening		
Not at all	11	19.3
A little	8	14.0
Some	6	10.5
A lot	32	56.1
I Felt Like I Did B4 Didn't Work Outright		
Not at all	37	64.9
A little	2	10.5
Some	8	8.8
A lot	15.8	15.8
I Felt Scared		
Not at all	41	71.9
A little	2	3.5
Some	8	14.0
A lot	6	10.6
I didn't sleep as well as i used to		
Not at all	39	68.4
A little	6	10.5
Some	5	8.8
A lot	7	12.3
I was happy		
Not at all	3	5.3
A little	9	15.8
Some	6	10.5
A lot	39	68.4

I Was More Quiet Than Usual		
Not at all	24	42.1
A little	10	17.5
Some	8	14.0
A lot	14	24.6
I felt lonely and have no Friend		
Not at all	45	78.9
A little	3	5.3
Some	5	8.8
A lot	4	7.0
I Felt Like Kids I Know Were Not Friendly		
Not at all	43	75.4
A little	2	3.5
Some	5	8.8
A lot	7	12.3
I had a Good Time		
Not at all	2	3.5
A little	5	8.8
Some	4	7.0
A lot	46	80.7
I Felt Like Crying		
Not at all	43	75.4
A little	8	14.0
Some	3	5.3
A lot	3	5.3
I Felt Sad		
Not at all	39	68.4
A little	10	17.5
Some	4	7.0
A lot	4	7.0
I Felt People Didn't Like Me		
Not at all	43	75.4
A little	6	10.5
Some	3	5.3
A lot	5	8.8
It was Hard to get Started Doing Things		
Not at all	36	63.2
A little	6	10.5
Some	10	17.5
A lot	5	8.8

Table 3: Depression Ratings of Participants.

or caregiver was used to assess perception of the patients' towards their illness. The Center for Epidemiology Study Depression Scale for children was used to screen for depression. Data were summarised using Mean, Standard deviation, Frequency and percentiles. Relationship between variables and depression and felt stigma was explored using Pearson's and Spearman's Correlation Coefficients. Regression analysis was conducted to find the predictors of depression and felt stigma.

Results

The participants were 30 males and 27 females with mean age of 13.8 ± 3.3 . Their age of onset of seizure ranged between 1 year and 17 years with mean of 8.74 ± 4.7 . Their age of presenting in the clinic ranged between 2 years and 17 years with mean of 11.43 ± 3.8 . Thirty-eight (66.7%) were Christians, 8 (14.0%) were Muslim and 11 (19.3) did not specify their religions. Ten (17.5%) were in primary school, 36 (63.2%) were in secondary school and 11 (19.3) had either drop out of school or did not go to school as a result of their illness. Twenty-five (43.9%) admitted that the condition was disturbing their education making 2 (3.5) dropping out of school, 7(12.3%) repeated class and

14 (24.6%) had reduced academic performances. Fourteen (24.6%) of mothers and 15 (26.3%) of fathers had secondary education while 25 (43.9%) of mothers and 30 (52.6%) of fathers had post-secondary education respectively (Table 1). 18 (31.6%) of the parents own their house of residence and 39 (69.4) lived in a rented apartment. Twenty-three (40.4%) of the participants had depressive symptoms. The frequency of the ratings of the participants on CES-DC and CATIS are presented in table 2 and 3 respectively.

There was positive significant correlation between depressive symptoms and each of educational level of the patients and seizure frequency at presentation at the clinic, and educational level of patient and felt stigma (Table 4). Regression analysis revealed that seizure frequency of epilepsy at presentation at the clinic is a predictor of manifestation of depressive symptoms, felt stigma, educational level of the patient and socio-economic status of the parents. Perception of stigma was a predictor to depression.

Discussions

This study revealed depression to be present in 40.4% of children and adolescents with epilepsy. This is far more than 28.4% of that of Adewuya and Ola [27] and 23% by Dunn et al. [5] but closely related to 33% reported by Alwash et al. [6]. The difference in our result and that of most of the previous studies [5,6] could have been attributed to environmental and cultural differences. These studies were conducted in the western nations while this study was conducted in Nigeria, an African Country. However, the difference in the result between our study and the findings of Adewuya and Ola [27] which was conducted in the same environment (South-western Nigeria and Clinical setting) may have been due to methodological and instrumental variations. In their study, they used K-SADS while in this study we used CESDC which is children and adolescents specific for screening for depression. Our focus was basically on depression while they explored various psychiatric disorders. Nevertheless, our finding corroborated their

report of higher prevalence of depression in Nigeria children and adolescent population than the western world. The higher prevalence of depression in this study can also be attributed to the inclusion and exclusion criteria set for this study. These however may not be strong enough not to generalise our finding.

In this study, 43.9% of the participants' educations have been affected by their epileptic condition ranging from dropping-out through repeating classes to reduced academic performances. This shows the effect of epilepsy on the upbringing and attainment of the sufferers. To the best of our knowledge, none of the previous studies have focused on this aspect of the quality of life of population of people with epilepsy. The finding that the frequency of seizure at presentation at the clinic is a predictor to depression and felt stigma agreed with previous studies [6,11,27,28] who have reported previous frequency of seizure as a predictor to depression and anxiety. The fact that perception of stigma predicts depression in this study shows that perception of stigma is a major factor in developing depression among children and adolescents with epilepsy. This result corroborates those of previous authors who had reported direct association between perceive stigma and depression in the underage with epilepsy [27-33].

The relationship between seizure frequency and socio-economic status of the parent is a phenomenon we may not be able to explain. However, it reflected the socio-economic impact of epilepsy on both the patient and the family. This corroborated other report on the socio-economic impact of caring for children with chronic illnesses such as cerebral palsy, and sickle cell anaemia. Parental level of education also had significant effect on the seizure frequencies. This may have been due to the fact that less educated parents are likely to have less knowledge about the condition and the appropriate care required. Our personal experience in the clinic has shown that a child from less educated background has less drug compliance. Hence, relapse and frequent seizure are inevitable.

AGE	AOO	AAP	SEX	CLE	MLE	FLE POR	OOR	DS	SFAP	SFP	HHI	PP	FS		
AGE	1	0.4**	0.6**	-0.3**	0.2	-0.4**	-0.2	-0.3**	-0.2	-0.3**	0.1	-0.1	-0.2	0.1	0.1
AOO	0.4**	1	0.6**	0.1	-0.1	-0.1	0.1	-0.1	-0.1	-0.1	-0.1	0.1	-0.1	-0.2	0.1
AAP	0.6**	0.61	0.1	0.2	-0.1	0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
SEX	-0.3**	0.1	0.1	1	0.2	0.2	0.3**	0.1	0.1	-0.2	0.2	0.2	0.2	0.1	0.1
CLE	-0.19	-0.1	0.2	0.2	1	0.7**	0.7**	0.8**	0.7**	0.4**	0.4**	0.5**	0.8**	0.7	0.3**
MLE	-0.4**	-0.1	-0.0	0.2	0.7**	1	0.9**	0.8**	0.9**	0.1	0.6**	0.6**	0.8**	0.8**	-0.2
FLE	-0.2	0.0	0.0	0.3**	0.7**	0.9**	1	0.8**	0.8**	-0.0	0.6**	0.6**	0.7**	0.8**	-0.0
POR	-0.2	-0.1	-0.1	0.0	0.7**	0.8**	0.8**	1	0.9**	0.1	0.5**	0.7**	0.6**	0.8	-0.1
OOR	-0.3**	-0.1	-0.2	0.1	0.8**	0.9**	0.8**	0.9**	1	0.1	0.5**	0.7**	0.8**	0.8	-0.1
DS	-0.2	-0.1	-0.1	-0.2	0.4**	0.1	-0.0	0.1	0.1	1	0.6**	-0.0	0.1	0.1	-0.2
SFAP	-0.3**	-0.1	-0.1	0.2	0.4**	0.6**	0.6**	0.5**	0.5**	0.6**	1	0.6**	0.4**	0.6**	-0.1
SFP	0.1	0.1	-0.0	0.2	0.5**	0.6**	0.6**	0.7**	0.7**	-0.0	0.6**	1	0.4**	0.6**	-0.0
HHI	-0.1	-0.1	-0.0	0.2	0.7**	0.8**	0.7**	0.8**	-0.2	0.1	0.5**	0.6**	1	0.7**	-0.1
PP	-0.2	-0.2	-0.1	0.1	0.8**	0.8**	0.8**	0.6**	-0.1	0.1	0.4**	0.4**	0.7**	1	0.1
FS	0.1	0.1	-0.1	0.1	0.3**	-0.2	-0.0	-0.1	-0.1	-0.2	-0.1	-0.0	-0.1	0.1	1

KEY: **significant at p = 0.00; AGE = Child's age; AOO = Age of Onset; AAP = Age at presentation; SEX = Child's sex
 CLE = child's educational level; MLE = Mother's educational level; FLE = Father's educational level; POR = Place of residence
 OOR = Ownership of residence; DS = Depression symptoms; SFAP = Seizure frequency at presentation; SFP = Seizure frequency at present
 HHI = House-hold income; PP = Personal possessions; FS=Felt stigma

Table 4: Correlation among Psychosocial factors of the participants.

This study has been able to provide more information on the prevalence of depression in children and adolescents with epilepsy in the tropics and in comparison with the temperate. It has also provided more evidence on the predictors of depression in children and adolescents with epilepsy. We have employed population specific instrument which has helped us with specific variables coupled with our thorough assessment and team work (multi-disciplinary approach) in extracting our facts. We acknowledge the fact that this study is clinic-based and this may have limited the sample size. This shows the need for a broader study that will be community-based. The issue of mixed diagnosis which are common in epilepsy was a major limitation to this study. This affected the final sample size. However, effort was made to ensure that all patients diagnosed of epilepsy in the Centre were included in the study.

Conclusion

This study has been able to provide more information on the higher prevalence of depression in Nigeria children and adolescents with epilepsy relative to their western-world counterparts in a hospital-based setting. We have also showed that epilepsy has negative impact on the psychosocial status of children and adolescents in Nigeria. Therefore, there is need to pay more attention to children with epilepsy to reduce the frequency of seizure so as to improve their psychosocial wellbeing.

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