

CLINICAL STUDIES / ETUDES CLINIQUES

PERCEPTIONS OF PSYCHOSOCIAL IMPACTS OF EPILEPSY BY AFFECTED PERSONS IN NORTHERN NIGERIA

IMPACT PSYCHOSOCIAL DE L'ÉPILEPSIE PAR LES PERSONNES AFFECTÉES PAR L'ÉPILEPSIE AU NORD DU NIGÉRIA

OBIAKO Reginald Onyeadumarakwe ¹
 IWUOZO Emmanuel Uzoma ¹
 KEHINDE Abiodun Johnson ¹
 SHEIKH Taiwo Lateef ²
 EKELE Noah ²
 UDEH Henry ²
 OTALU Solomon ²
 USMAN Jude ²
 GOMINA Michael ²
 SANNI Abdul ²

1. Neurology Unit, Departments of Medicine, Ahmadu Bello University Teaching Hospital (ABUTH), Shika Zaria, Nigeria
2. Epilepsy Unit, Federal Neuropsychiatry Hospital (FNPH), Barnawa Kaduna, Nigeria

E-Mail Contact - OBIAKO Reginald Onyeadumarakwe : [orobiako87 \(at\) gmail \(dot\) com](mailto:orobiako87@gmail.com)

Key words: *Epilepsy, Nigeria, Perceptions, Psychosocial impacts*

ABSTRACT**Background**

Globally persons afflicted with epilepsy suffer social and psychological problems due to factors such as stigmatization and discrimination, overprotection and seclusion by parents and social isolation. This descriptive cross sectional study set out to investigate psychosocial impacts of epilepsy on affected individuals in Kaduna State, Northern Nigeria.

Method

Two hundred and forty two adults attending epilepsy clinic at two tertiary hospitals were questioned on impacts of epilepsy on personal developments and social interactions.

Results

The subjects comprised 168 (69.4%) males and 74 (30.6%) females with mean ages of 29.5±12.4 years and 30.7 ±16.0 years respectively. Their respective mean ages of onset of epilepsy were 18.6 ±14.0 years and 20.9 ±17.4 years. 8% had no formal education, 50% stopped school at various stages, while 28%, 12% and 2% completed primary, secondary and tertiary education at respective ages of 12.8 ±2.1 years, 18.2 ± 1.9 years and 24.4 ± 0.9 years. 73% were unemployed and 79% were unmarried due to rejection by spouses. More than 90% were unhappy about epilepsy, 4% were depressed and 0.8% had suicidal ideations. 28% would not socialise because of stigmatization and discrimination at home or workplace, while 5% experienced hostility from employers and colleagues at workplace.

Conclusions

The study highlighted some psychosocial impacts of epilepsy in more than 90% of persons with epilepsy in Kaduna State, Nigeria.

INTRODUCTION

Epilepsy is a common neurological illness in Nigeria with a prevalence of 5-37 per 1000 in a rural population (1). Globally persons afflicted with epilepsy (PWE) suffer psychosocial problems due to a combination of factors created by the chronic nature of the illness and the problem of social adjustment for the affected

individual (2, 3). Epileptic seizures may render affected individuals vulnerable to behaviours that violate social norms during episodes, while chronic epilepsy may lead to brain damage and consequent cognitive dysfunction, specific learning disabilities, and behavioural abnormalities (2-4).

Affected individuals may also suffer from medication side effects (4), and functional factors such as overprotection by parents, decreased self-esteem, poor motivation, anxiety and depression, social isolation and withdrawal, and subsequent inability to interact appropriately with other people (2-5). Although PWE ultimately end up with health-related stigma in societies all over the world, the underlying reasons for this have remained unclear (4, 5). However, what is certain is that stigmatization of the epileptic is associated with social discrimination which is largely due to misconceptions and myths about epilepsy and the fear and fright of the public on confronting a convulsive or psychogenic seizure (5, 6). Since society is a system in which each individual is expected to conform to certain aggregated norms accepted by members of that society, societal prejudice and negative attitudes toward those with epilepsy has been described as a response to frequent violations of these norms due to their vulnerability to involuntary violent convulsions and abnormal behaviours during or between seizure episodes (5). PWE have been derided and treated for decades as 'sub-human', 'mentally retarded' and 'outcast' by members of the society, including, sometimes, parents and family members (2, 5, 7, 8). The term 'psychosocial problem' has been used to refer to a broad range of psychopathological states such as psychoses, mood abnormality, personality disorders, unsocialised aggression, as well as interactional difficulties, psychological, behavioural and emotional problems suffered by PWE (3). Since the PWE is the only one who knows how he or she feels about epilepsy, how the disorder affects him or her, particularly with regard to his/her ability to socialise and function on a daily basis, in this study our aim was to investigate how PWE perceive the impacts of epilepsy on their personal developments and social interactions.

MATERIAL AND METHODS

Research sites and settings.

The ABU Teaching Hospital Zaria and Federal Neuropsychiatry Hospital Barnawa Kaduna are located in Kaduna State, northwestern Nigeria, about 125 kilometres apart from each other. Both tertiary hospitals collectively receive about 15-35 PWE per each outpatient clinic session. Epilepsy was defined as "history of at least 2 stereotyped seizures not provoked by a febrile illness or an acute neurologic insult, each episode usually confirmed by an eye witness (9, 10). Epilepsy subtypes were classified according to the clinical criteria of the 1993 Commission on Classification and Terminology of the International League Against Epilepsy [ILAE] (10), supported by presence of abnormal waves on electroencephalography[EEG] occurring in the form of spikes, polyspikes, sharp waves, spikes and wave complexes (11). After diagnosis, each PWE was put on antiepileptic drug (AED) monotherapy and those with psycho-social problems were sent to the psychologists and social counselors for psychotherapy and counseling.

Research design.

The research was a descriptive cross-sectional study which was undertaken with the aid of a semi-structured questionnaire modified from the health-related quality of life questionnaire (12). Ethical clearance was obtained from the Research Ethics Committee of each hospital. Consent was obtained from participants after explaining the purpose of the study, the voluntary nature of participation and assuring them that their responses would be kept confidential. The protocol was translated to Hausa (the indigenous language) by a bilingual expert, and back translated to English by another bilingual expert who was blind to the first translation. To ensure uniformity of interpretation and understanding of questions or items in the questionnaire, each version (Hausa and English) was administered independently on 20 AED-experienced PWE by two of the investigators (ORO, UH) who assigned the appropriateness of each question or item to one of 4 groups. When a question or item was assigned to a group, that group received a score of 1 while the other groups received a score of zero each. These groups were defined by the following criteria:

- a) True-positive- when the question or item was unambiguous and understood by both investigator and subject.
- b) False-positive-when the question or item was unambiguous but misunderstood or misinterpreted by either investigator or subject.
- c) False-negative- when the question or item was unambiguous but misunderstood or misinterpreted by both investigator and subject.
- d) True- negative- when the question or item was ambiguous and misunderstood or misinterpreted by both investigator and subject.

The pilot data when subjected to Wilcoxon Rank Sum test yielded mean scores of 1.01, 1.1, 0.0, and 0.0 for the respective groups, thus giving the tool a sensitivity of 100% [formula: true-positives (1.01)/ true-positives (1.01) + false-negatives (0.0) X 100]; and specificity of 90% [formula: true-negative (0.0)/ true negative (0.0) + false positive (1.1) X 100]. However this data were excluded from final analysis of this study.

Data collection.

Two hundred and forty two consecutive subjects (≥ 15 years of age) with at least one year history of epileptic seizures were interviewed in English or Hausa languages depending on choice of the subjects' and/or the accompanying caregiver. PWE with comorbid psychosis, intellectual impairments or less than one year history of epilepsy were excluded. The PWE were interviewed between October 2008 and April 2013. The questionnaire comprised:

- a) Demographic characteristics - sex, age, residential addresses and mobile phones of subjects' and caregivers.
- b) Impacts of epilepsy on subjects' personal development - marriage, educational attainment, age of starting and completing school and employment status. Age matched healthy controls were selected from among hospital workers and care givers, and interviewed regarding age of starting and completing schools, and the result was compared.
- c) Characteristics of seizures- age of onset and duration of epilepsy, presence or absence of aura/ convulsions/ altered consciousness/post ictal sleep/amnesia, and seizure frequency and severity.
- d) Subjects' knowledge and belief about epilepsy - aetiology and precipitants of seizures, age of commencement of antiepileptic drug (AED) or any other mode of treatment.
- e) Subjects' perception of attitudes of peers and other people towards PWE and impacts of epilepsy on social interactions.

Statistical analysis.

Analysis was done using the electronic database of the Statistical Package for Social Sciences (SPSS) version 17 Chicago IL, USA. Descriptive statistics- frequency distributions, means, standard deviations, range, percentages and proportions were determined. Quantitative variables were compared using the one sample t test. Levels of significances were set at 5% probability ($p < 0.05$, two-sided).

RESULTS**i. Demographic characteristics and impacts of epilepsy on subjects' personal development.**

The males to females ratio was 3: 1, the males being significantly younger with respective mean ages of 29.5 ± 12.4 years and 30.7 ± 16.0 years. 41% of the subjects were in the age group 19-24 years, followed by 25-30 years (22%) and 15-18 years (12%) (Table 1). Only 43% were able to complete their education: 29%, 12% and 2% at primary, secondary and tertiary levels respectively (Table 2). 8% did not have formal education, while 49% could not complete school for reasons such as poor performance (60%); frequent change of schools (30%) and poor class attendance (10%). The subjects also completed primary and secondary education at ages significantly older than healthy children of comparable age (Table 3). The marital status of subjects in Table 4 showed that 37% remained unmarried because: marriage proposals were frustrated by families of respective spouses (28%), separation from respective spouses (6%), and divorce by husbands (3%). Frequent seizure attacks and absence from work was responsible for: unemployment in 166 subjects, significant loss of revenue by 13 self employed subjects and threats of job loss in 2 subjects employed by private firms (Table 4).

ii. Characteristics of seizures-

The respective mean ages of onset of epilepsy were 18.6 ± 14.0 years and 20.9 ± 17.4 years for males and females ($p < 0.05$) (Table 1). At onset of epilepsy, only 25% were treated with AED while 75% received traditional and spiritual therapies. However, all subjects in this study were on AEDs. The median duration of epilepsy before AED monotherapy was 6 years: 1-5 years for 24.8%, 6-10 years for 74.4% and >10 years for 0.8% subjects respectively. 85% of subjects presented with partial seizures and 15% with primarily generalized seizures, and more than 60% reported seizure frequency of ≥ 3 in a month (Table 5).

iii. Subjects' knowledge and belief about epilepsy.

About 70% of subjects believed that epilepsy was a curse from external forces such as gods, evil spirits, enemies, bad people, and sorcerers. 20% knew that epilepsy could result from head injury, 9% claimed that it was divined by God almighty, while one subject believed it could be inherited. No subject thought it was contagious. 68% of subjects believed that epilepsy could be treated best with AEDs, 21% believed that a combination of traditional, spiritual and AEDs therapies were the best option, while 7% believed in a combination of traditional and spiritual methods without AEDs. 2% each believed that epilepsy can best be treated by either traditional or spiritual methods only. 92% believed that epilepsy cannot be cured but can be controlled, and 78% got this information from doctors and other health workers (Table 6).

iv. Subjects' feelings about epilepsy, perceptions of discriminations by other people and impacts of epilepsy on social interactions.

Although about 90% of subjects were unhappy that they had epilepsy, only few felt depressed (9 subjects) or had suicidal ideations (2 subjects). Also, 67 (28%) subjects reported that they were discriminated by school mates, peers, neighbours and family members. These subjects, in addition to 13 other subjects who suffered indifference and hostility from peers, reported that these negative attitudes affected their social interactions with others negatively (Table 6)

DISCUSSION

1. Demographic characteristics of subjects

In this study the male population was about 3 times that of the females, a tendency previously acknowledged by the World Health Organisation (W.H.O) report on epilepsy in 2001(13) and other studies on epilepsy in Nigeria (1, 14), Tanzania (15) and South India (16). Many factors may be responsible for this tendency. Apart from reflecting a global predominance of epilepsy in male patients (13), males have the propensity to engage in risky lifestyle behaviours (17). In certain Nigerian societies where men control decision making processes, many men would refuse to take their sick wives or daughters to hospitals for cultural and religious reasons (6). In predominantly Muslim northern Nigeria where this study was undertaken, tradition demands that only the head of the family, usually a male, could decide when a sick female could be taken to a hospital (6). In addition, females are kept in seclusion called 'kule' or 'pudah' away from the community at large (18), and when they suffer from epilepsy and other neuropsychiatric disorders; they are preferentially taken to 'prayer houses', spiritual and traditional medicine healers in the belief that they are possessed by evil spirits and witchcraft (19, 20). More than 70% of the subjects were within the age group 19-30 years, agreeing with the report of the W.H.O (21) and other studies that epilepsy has the highest prevalence in persons below 30 years of age in Nigeria (14, 15) and Africa (17).

2. Impact of epilepsy on educational attainment.

Epilepsy had negative impacts on many aspects of the subjects' lives. Many of the subjects in this study believed that epilepsy had a negative impact on their educational attainment. Less than half of them completed their education at different levels. Others stopped schooling at various levels, while about one-fifth did not have formal education. These subjects blamed frequent seizures and attendant stigma for their inability to attend or complete their education. Those who were able to complete the primary and post primary education did so at comparatively older ages than age- matched healthy controls. These results support the observation of the W.H.O, more than 30 years ago, that epilepsy produced significant body system impairments, disabilities and handicaps, particularly cognitive disabilities in affected individuals leading to difficulties with vocational skills and learning and ultimately to problems of coping with academic and job requirements (22). The results were also similar to those reported by Danesi et al (7), Ojinnaka (8) and Nuhu et al (14) on the academic performances of school children suffering from epilepsy in Nigeria. In their study of 58 epileptic children attending school, Danesi et al (7) reported that one third performed poorly in comparison with their school mates, 45 withdrew prematurely from school because of frequent seizures, and 8 were expelled because of frequent seizures. Ojinnaka revealed that parents were forced to withdraw their wards from school because the children were maltreated by teachers who believed that they might transmit the disorder to other children (8). Nuhu et al observed that about 20% of children were withdrawn from school either voluntarily by their parents or through expulsion by school authorities because of epilepsy (14).

3. Impact of epilepsy on marriage and employment.

Six eight subjects claimed that their marriage proposals by rejected by spouses and families, 14 were separated from spouses and 8 (all females) were divorced by husbands. This result is in keeping with previous reports of difficulties in contracting marriages and retaining same by PWE in Africa, which have been traced to discrimination, stigmatization and intolerance by the general public, on the belief that PWE are possessed by evil spirits and witchcraft (6, 14, 20). People also believed that epilepsy is transmitted through physical contact, saliva and droplet infection, and so they try to avoid contact with the epileptic as much as possible (14). In Nigeria it is customary for parents of partners in intimate relationships or proposing to marry to investigate each other's families for history of epilepsy and other neuropsychiatric disorders (20). Confirmation of history of epilepsy had often led to cancellations of relationships and marriage proposals for fear of introducing epilepsy into the family tree (20). This obnoxious belief is said to be responsible for the overall response and attitude of the general public, family members, neighbours, peers and colleagues towards PWE in almost all spheres of life in many countries (2, 3, 6, 14, 25, 26).

The inability of majority of subjects in this study to obtain or retain jobs was blamed on epilepsy and frequent absence from work. This is because frequent seizures increase the visibility of epilepsy, including the associated fatigue and difficulties with interpersonal interactions and information control (5). Although these observations were also made by Parma et al in Kerala south India (23), the unemployment rate among their patients which was 58.4%, was lower than among our subjects (68.9%).

4. Impact of subjects' knowledge and belief about epilepsy on attitudes and medication seeking behaviour.

Results of some studies have shown that some epileptics manifest abnormal personalities, particularly if they

have head injury, low self esteem or are under the influence antiepileptic drugs (4, 15). Some of these problems may be related to the compulsory need to take medications on a regular basis for a long time (4). Psychosocial abnormalities were uncommon among our subjects. Majority (81%) of them felt just unhappy about their illness, few others felt very unhappy (10%), indifferent (5%) or depressed (4%). Only 2 (0.8%) had suicidal ideation. The attitude of subjects towards the illness may have been influenced by the information many of them received from health care providers about epilepsy and its treatment, although that knowledge did not change the belief of about 78% of them that epilepsy was a curse from external forces such as gods, evil spirits, enemies, bad people, and sorcerers. Consequently about 20% preferred a combination of traditional, spiritual and AEDs therapies as the best option of treatment for epilepsy, a practice already described by previous studies in Nigeria (6, 19, 24).

5. Perceptions of discriminations and impacts of these on social interactions.

About 67 subjects reported that they were discriminated by school mates, peers, neighbours and family members. 13 other subjects suffered indifference and hostility from peers. These subjects reported that these hostile attitudes affected their social interactions with others negatively. Some subjects were secluded and isolated from peers by parents. Studies have shown that parents who have negative views about epilepsy tend to overprotect the epileptic child, restricting them from peers and teaching them to conceal their condition from others (25). Parents and siblings will conceal the presence of epilepsy in a member of the family because of shame and stigmatization the condition will bring to the family name (25, 26). This attitude was confirmed by results of separate studies among parents in Nigeria (6) and China (27) in which more than 30% of respondents perceived that disclosure of epilepsy in family might lead to negative social consequences for their families.

CONCLUSIONS

This study has shown that more than 90% of persons afflicted with epilepsy in Kaduna State Nigeria have perceptions of psychosocial impacts of epilepsy on personal developments and social interactions. Many of these subjects reported that they benefited greatly from social counselling and education about epilepsy and its treatment. Therefore accurate and up to date information about any disease process is recommended for people with chronic illnesses such as epilepsy, in order to enhance their ability to make truly informed choices about their treatment and care. Public understanding of epilepsy and its treatment can be improved through epilepsy specific education with the view to reducing stigmatisation and discrimination associated with epilepsy, thus improving the quality of life for people with epilepsy.

Conflit d'intérêt : Aucun

Table 1: Age and sex distribution of persons with epilepsy.

Age of subjects (years)	Sex distribution (*)		Total 242 (100.0%)
	Male 168 (69.4%)	Female 74 (30.6%)	
15-18	16 (6.6)	12 (4.9)	28 (11.5)
19-24	64 (26.4)	36 (14.9)	100 (41.3)
25-30	46 (19.0)	8 (3.3)	54 (22.3)
31-36	20 (8.3)	4 (1.7)	24 (10.0)
37-42	10 (4.1)	2 (0.8)	12 (4.9)
43-48	8 (3.3)	2 (0.8)	10 (4.1)
≥ 49	4 (1.7)	10 (4.1)	14 (5.8)
Mean	29.5±12.4 (**)	30.7 ±16.0b (**)	29.8±13.6
Range	16-75	15-70	15-75
Age of onset of epilepsy (years)			
Range	4- 75	3-70	3-75
Mean	18.6 ±14.0 (***)	20.9 ±17.4 (***)	19.3±15.0
Median	14	16	16

(*) Percentages in parenthesis.

(**) One sample test (t) = 22.096, df 100, p=0.001; 95% CI 29.84 (27.16-32.52).

(***) One sample test (t) = 28.103, df 100, p=0.000; 95% CI 12.56 (10.17-15.65).

Table 2: Impact of epilepsy on educational attainment of patients

<i>Educational attainment</i>	<i>Males N%</i>	<i>Females N%</i>	<i>Total N%</i>
#None	16 (6.6)	4 (1.7)	20 (8.2)
#Primary school drop-out	28 (11.6)	18 (7.4)	46 (19.0)
Secondary school drop-out	66 (27.3)	3 (1.2)	69 (28.5)
Koranic school drop-out	2 (0.8)	0 (0.0)	2 (0.8)
#Apprenticeship drop-out	4 (1.7)	0 (0.0)	4 (1.7)
Completed primary school	30 (12.4)	39 (16.1)	69 (28.5)
Completed secondary school	20 (8.3)	10 (4.1)	30 (12.4)
Completed tertiary education	6 (2.4)	0 (0.0)	6 (2.4)
#Total	172 (71.1)	74 (30.6)	246 (101.7)

Multiple responses: Of the 4 apprenticeship drop-out, 2 had no formal education, and 2 dropped out of primary school.

* Reasons for school drop-out: poor performance (60%); frequent change of schools (30%) and poor class attendance (10%).

Table 3: Comparison of ages at which subjects and healthy controls completed education

<i>Type of education completed</i>	<i>Number of subjects & healthy controls</i>	<i>Age at completion (years) - Minimum</i>	<i>Age at completion (years) - Maximum</i>	<i>Mean years</i>	<i>± SD</i>	<i>P value</i>
Primary school (PWE)	69 (65.7)	9	17	12.8	2.1	0.03
Primary school (healthy control)	49 (46.7)	10	14	11.0	0.0	
Post-primary school (PWE)	30 (28.6)	15	22	18.2	1.9	0.04
Post-primary school (healthy control)	30 (28.6)	15	17	16.6	2.2	
Tertiary education (PWE)	6 (5.7)	24	26	24.4	0.9	0.05
Tertiary education (healthy control)	26 (24.8)	23	30	25.1	0.1	

Table 4: Impact of epilepsy on marital and employment status of patients

<i>Marital status</i>	<i>Males (168, 69.4%)</i>	<i>Females (74, 30.6%)</i>	<i>Total (242, 100.0%)</i>
Single	86 (35.5)	14 (5.8)	100 (41.3)
Single*	42 (17.4)	26 (10.7)	68 (28.1)
Separated	4 (1.7)	10 (4.1)	14 (5.8)
Divorced	0 (0.0)	8 (3.3)	8 (3.3)
Married	34 (14.0)	16 (6.6)	50 (20.6)
Widower	2 (0.8)	0 (0.0)	2 (0.8)
<i>Employment status</i>			
None	0 (0.0)	10 (4.1)	10 (4.1)
None a	129 (53.3)	37 (15.3)	166 (68.6)
Student	15 (6.2)	10 (4.1)	25 (10.3)
Self-employed b	11 (4.5)	2 (0.8)	13 (5.3)
Government employed	4 (1.7)	1 (0.4)	5 (2.1)
Private Company employed c	9 (3.7)	0 (0.0)	9 (3.7)
Others- household etc	0 (0.0)	14 (5.8)	14 (5.8)

* Remained single because spouses' families frustrated marriage proposals.

Frequent seizures and absence from work was blamed for:

a inability to get a job by 156 subjects and job loss by 10 subjects

b reduced sources of income.

c threats of sack from job by 2 subjects

Table 5. The duration of epilepsy before AED monotherapy, frequency of seizures before presentation and epilepsy subtypes.

<i>Duration of epilepsy before AED monotherapy</i>	<i>Number of subjects 242 (100.0%)</i>	<i>Epilepsy subtypes</i>	<i>"</i>	<i>"</i>	<i>"</i>
		CPS	SPS	PGTC	TA
1-5 years	60 (24.8)	49 (20.3)	9 (3.7)	-	2 (0.8)
6-10 years	180 (74.4)	136 (56.2)	10 (4.1)	30 (12.4)	4 (1.7)
> 10 years	2 (0.8)	2 (0.8)	-	-	-
Median = 6 years					
<i>Frequency of seizures before presentation</i>					
≥ 3 times in one month	160 (66.1)	150 (62.0)	-	10 (4.1)	-
1-2 times in one month	50 (20.7)	37 (15.3)	1 (0.4)	12 (5.0)	-
1-2 times in 2 months	23 (9.5)	-	15 (6.2)	8 (3.3)	-
1-2 times in 3 months	5 (2.1)	-	3 (1.2)	-	2 (0.8)
1-2 times in 6 months	3 (1.2)	-	-	-	3 (1.2)
1-2 times in one year	1 (0.4)	-	-	-	1 (0.4)
Total	242 (100.0)	187 (77.3)	19 (7.8)	30 (12.4)	6 (2.5)

- CPS (complex partial seizures), SPS (simple partial seizures), PGTC (primarily generalised tonic-clonic seizures), TA (typical absences)

Table 6: Subjects' feelings about epilepsy and perceptions of discriminations

S. No	Characteristics	Frequency 242 (100.0%)
1.	What do you believe is the cause or precipitant of epilepsy?	
	Curse from evil forces (gods, sorcerers, spirits etc)	170 (70.2)
	Can result from any injury to head	49 (20.2)
	Was destined by God Almighty	22 (9.1)
	Can be inherited from family lineage	1 (0.4)
	It is transmitted from person to person	0 (0.0)
2.	What is/are the best treatment(s) for epilepsy?	
	Best with hospital drugs	165(68.2)
	Best by a combination of traditional, spiritual methods and hospital drugs	51(21.0)
	Best by traditional and spiritual methods	16 (6.6)
	Best by traditional method only	5 (2.1)
	Best by spiritual/ religious means only	5 (2.1)
3.	Is there a cure for epilepsy?	
	Yes	19 (7.9)
	No, but epilepsy can be controlled	223 (92.1)
4.	Source of information for your answer	
	From doctors and other health workers	189 (78.1)
	From internet and other electronic media	34 (14.0)
	From friends and peers	15 (6.2)
	From traditional and spiritual healers	4 (1.7)
5.	Feelings about epilepsy	
	I am just unhappy about my condition	195 (80.5)
	I am very unhappy about my condition	24 (9.9)
	I feel indifferent about my condition	12 (5.1)
	I am depressed about my condition	9 (3.7)
	I feel like killing myself	2 (0.8)
6.	Perceptions of discrimination	
	I don't feel discriminated against by anybody	175 (72.3)
	I have been discriminated at school by mates	24 (9.9) *
	I have been discriminated at workplace by colleagues	22 (9.1) *
	I have been discriminated at home by neighbours	12 (5.0) *
	I have been discriminated at home by siblings and parents	9 (3.7) *
7.	Perceptions of attitudes of peers	
	Cordial	214 (88.4)
	Emphatic	15 (6.2)
	Indifferent	11 (4.5) *
	Hostile	2 (0.8) *

* Social interaction was affected negatively because of discrimination and hostility

REFERENCES

1. ONWUEKWE IO, ONODUGO OD, EZEALA-ADIKAIBE B, AGUWA EN, EJIM EC, NDUKUBA K, ABADOM TR, ILLO CK, ONYEJIZU C. Pattern and presentation of epilepsy in Nigerian Africans: a study of trends in the southeast. *Transactions of the Royal Society of Tropical Medicine and Hygiene.* 2009; 103, 785-789
1. JACOBY A, SNAPE D, BAKER GA. Epilepsy and social identity: the stigma of a chronic neurological disorder. *Lancet Neurol* 2005; 4:171-178.
2. DODRIL CB, BREYER DN, DIAMOND MB, DUBINSKY BL, GEARRY BB. Psycho-social problems among adults with epilepsy. *Epilepsia* 1984; 25:168-175.
3. TRIAMBLE MR. Antiepileptic drug, cognitive function and behaviour in children: evidence from recent studies. *Epilepsia* 1990; 31 (Suppl. 4): S30-S34.
4. MASHARIP ATADZHANOV , ALAN HAWORTH , ELWYN N. CHOMBA , EDWARD K. MBEWE , GRETCHEN LANO BIRBECK. Epilepsy-associated stigma in Zambia: What factors predict greater felt stigma in a highly stigmatized population? *Epilepsy Behav* (2010), doi:10.1016/j.yebeh.2010.08.017
5. KABIR M, ILIYASU Z, ABUBAKAR IS, KABIR ZS, FARINYARO AU. Knowledge, attitude and beliefs about epilepsy among adults in a northern Nigerian urban community. *Ann. Afr. Med.* 2005; 4 (3): 107-112.
6. DANESI MA, ODUSOTE KA, ROBERTS OO, ADU EO. Social problems of adolescent and adult epileptics in a developing country as seen in Lagos, Nigeria. *Epilepsia* 1981; 689-696.
7. OJINAKA NC. Teachers' perception of epilepsy in Nigeria: a community based study. *Seizure* 2002; 11:386-391
8. FISHER RS, VAN EMDE BOAS W, BLUME W, ELGER C, GENTON P, LEE P, ENGEL J. Epileptic seizures and epilepsy: Definitions proposed by the International League Against Epilepsy (ILEA) and the International Bureau for Epilepsy (IBE). *Epilepsia* 2005; 46: 470-472.
9. INTERNATIONAL LEAGUE AGAINST EPILEPSY (ILAE) COMMISSION ON EPIDEMIOLOGY AND PROGNOSIS. Guidelines for epidemiologic studies on epilepsy. *Epilepsia* 1993; 34:592-596.
10. SMITH SJM. Electroencephalography in the diagnosis, classification, and management of patients with epilepsy. *J Neurol Neurosurg Psychiatry* 2005;76 (II): ii2-ii7.
11. CRAMER JA. Principles of health-related quality of life: assessment in clinical trials. *Epilepsia* 2002;43:1084-1095.
12. WORLD HEALTH ORGANISATION. Epilepsy: aetiology, epidemiology and prognosis. Geneva: World Health Organisation; 2001. Fact sheet No. 165.
13. NUHU FT, FAWOLE JO, BABALOLA OJ, AYILARA OO, SULAIMAN ZT. Social consequences of epilepsy: A study of 231 Nigerian patients. *Ann. Afr. Med.* 2010; 9 (3): 170-175.
15. JILEK-AALL L, RWIZA HT. 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 (4): 645-650.
14. GOPINATH B, RADHAKRISHNAN K, SANKARA SARMA P, JAYACHANDRAN D, ALEXANDER A. A questionnaire survey about doctor-patient communication, compliance and locus of control among South Indian people with epilepsy. *Epilepsy Research* 2000; 39: 73-82.
15. OGUNNIYI A, OSUNTOKUN BO, BADEMOSI O, ADEUJA AOG, SCHOENBERG BS. Risk factors for epilepsy: case-control study in Nigerians. *Epilepsia* 1987; 28 (3): 280-285.
16. AHMED H, OBEMBE A. Predictors of seizure remission in Nigerian children and adolescents on antiepileptic therapy. *Niger. Postgrad. Med. J* 1997; 4 (3): 65-72.
17. DANESI MA, ADETUNJI JB. Use of alternative medicine by patients with epilepsy: A survey of 265 epileptic patients in a developing country. *Epilepsia* 1994; 35 (2): 344-351.
18. AWARITIFE A, LONGE AC, AWARIFE M. Epilepsy and psychosis: a comparison of societal attitudes. *Epilepsia* 1985; 26: 1-9.
21. SENANAYAKE N, ROMAN GC. Epidemiology of epilepsy in developing countries. *Bull. World Health Organization* 1993; 71 (2): 247-258.
19. WORLD HEALTH ORGANIZATION. International classification of impairments, disabilities and handicaps. WHO. Geneva 1980.
20. VARMA NP, SYLAJA PN, GEORGE L, SARMA LS, RADHAKRISHNAN K. Employment concerns of people with epilepsy in Kerala, south India. *Epilepsy Behav* 2007; 10: 250-254.
21. NWANI PO, NWOSU MC, ENWEREJI KO, ASOMUGHA LA, ARINZE EO, OGUNNIYI A. Epilepsy treatment gap: prevalence and associated factors in southeast Nigeria. *Acta Neurol Scand.*, 2013; 128 (2):83-90.
22. WEST P. Investigation into the social construction and consequences of the label "epilepsy". Bristol: University of Bristol; 1979.
23. JILEK-AALL L, JILEK M, KAAYA J, MKOMBACHEPAL L, HILLARY K. Psychosocial study of epilepsy in Africa. *Soc. Sci. Med.* 1997; 45: 783-795.
24. ARTHUR K, WEN-ZHI W, SHI-CHUO L, XUE-MING C, XIU-YING D et al. The social course of epilepsy: chronic illness as a social experience in interior China. *Soc. Sci. Med.* 1995; 40:10: 1319-1330.