

# Assessment of the Socio-Demographic Characteristics of Pre-Covid Epileptic Patients Managed at Clinic of the Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH), Bauchi

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## Abstract

*Epilepsy is a neuronal disorder affecting more than 50 million people in the world (about 1% of the world's population) with 5-10 cases in 1000 persons. It is characterized by an abnormal firing of neurones and neuronal networks, leading to dramatic symptoms of seizures. There has been an increase in the number of cases of epilepsy in the localities from year to year. With the increase in mortality due to lack of attention, and care coupled with misconceptions and stigma attached to the disease, patients are being left to care for themselves with no or less support from the government and society. Unfortunately, many lives have been lost due to this neglect. The need to establish a database on the sociodemographic characteristics of epileptics is necessary. Epileptic patient folders were obtained from the Medical Records and Statistic Unit of ATBUTH after obtaining ethical clearance from the Health Research and Ethics Committee of the hospital. The socio-demographic data from the folders were obtained, processed and analysed using Microsoft Excel 2010. The total patients were 217, 124 males and 93 females, with 161 dwelling in rural communities and 56 in the cities, while 155 were unemployed, and 62 were gainfully employed. Most of those affected were at the secondary level of education (104) while those at the primary level were the least (27) and those at the tertiary level were 50. Among the 217, 193 were Muslims and 24 were Christians. The data showed that most epileptics came from rural communities, with low income, poor conditions of living and more of the male gender. Therefore, there is a need for more awareness, support and care from individuals, organizations and the government to combat the increase and effects of epilepsy on the population.*

**Keywords:** Epilepsy, Seizures, Bauchi, socio-demographic, medical records

## INTRODUCTION

Epilepsy is a common chronic neurological condition affecting up to 50 million people worldwide, characterised by recurrent unprovoked seizures. These seizures are transient signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain (Fisher *et al.*, 2005, 2014). Epileptic seizures are episodes that can vary from brief and nearly undetectable to long periods of vigorous shaking (WHO, 2012). In epilepsy, seizures tend to recur and have no immediate underlying cause (Cheng and Lowenstein, 2003), whereas seizures that occur due to a specific cause are not deemed to represent epilepsy (Fisher *et al.*, 2005). Eighty per cent (80%) of epilepsy patients live in developing countries, where three-fourths of the patients do not receive adequate treatment (Mahendran *et al.*, 2014). The estimated proportion of the general population with active epilepsy at a given time is between 4 to 10 per 1,000 people (0.4 - 1 %). Although in many epileptic cases a precise cause cannot be identified, several factors such as brain trauma, strokes, brain cancer, and drug and alcohol misuse have been suggested (Gebre and Haylay, 2018). In the last decade, new AEDs have been developed with the aim of balancing, as far as possible, significant efficacy with good tolerability (Giorgi *et al.*, 2013). Epilepsy is often accompanied by physical and cognitive disability leading to limitation in employment, independence, and social activities. Patients with epilepsy have greater difficulties dealing with schooling and are widely stigmatized. These encounters may therefore affect the lifestyle and quality of life of the patients. In addition, shortness of medical services, unavailability of antiepileptic medications, and lack of awareness of medical treatment and cultural-related factors are more common phenomena in developing countries including Nigeria. These factors may also contribute to low quality of life among patients with epilepsy in Nigeria (Almu *et al.*, 2006)

Epilepsy is associated with a higher risk of psychiatric complications either before or after the diagnosis of epilepsy. The nature of the illness, which in some cases may be associated with altered consciousness, the discrimination experienced by sufferers, the cultural belief system as it relates to the cause and treatment, the high rate of physical complications and side effects of antiepileptic medications may impact on the psychological well-being of people living with epilepsy (William *et al.*, 1997, Holland *et al.*, 2009; Gebre and Haylay, 2018). The main feature of epilepsy is a seizure, which are classified into different types (Fisher *et al.*, 2017; Dawkins, 2018).

Seizure classification begins with the determination of whether the initial manifestations of the seizure are focal or generalised. Where the onset is missed or obscured, the seizure is said to be of unknown onset. This classification is represented in Figure 2.1. For focal seizures, the level of awareness may be included in the seizure type. Awareness is an important feature of a seizure. A person is said to have retained awareness when there is awareness of self and environment during the seizure, even if immobile. Impaired awareness during any part of the seizure renders it a focal impaired awareness seizure (Fisher *et al.*, 2017; Dawkins, 2018).

Focal seizures are also sub-grouped as those with motor and non-motor signs and symptoms at the onset. If both motor and non-motor signs are present at the seizure start, the motor signs will usually dominate, unless non-motor (e.g., sensory) symptoms and signs are prominent. Focal or impaired awareness seizures optionally may be further characterised by one of the listed motor onset or non-motor onset symptoms, reflecting the first prominent sign or symptom in the seizure, for example, focal impaired awareness automatism seizure. Seizures of unknown onset may be referred to by the single word "unclassified" or with additional features, including motor, non-motor, tonic-clonic, epileptic spasms, and behaviour arrest (Fisher *et al.*, 2017; Dawkins, 2018, Wolf *et al.*, 2015, Striano *et al.*, 2009).

Sociodemographic characteristics refer to a combination of social and demographic factors, including socioeconomic status, which is often measured by an individual's educational attainment, occupation, and income. Individuals with low socioeconomic status have been reported to have poorer health status and to be less likely to participate in health surveys compared with individuals with high socioeconomic status (Vo *et al.*, 2023).

The prevalence of epilepsy appears to be associated with socioeconomic status in the lower socioeconomic groups, and occupation status and has also been found to be linked with poor academic level (Morgan *et al.*, 2000; Mohammadi *et al.*, 2006; Kaheni *et al.*, 2010).

Preservation and conservation of hospital documents and records have been problematic. The traditional way of keeping records in folders and files is no longer the best practice in this technological era (Yaya *et al.*, 2015). Also, there is no available data online with regards to the social-demographic characteristics of epileptics in North East Nigeria especially with Bauchi State. This study aimed at establishing a baseline record of the socio-demographic characteristics of epileptics in Bauchi state and with the objective to determine the socio-demographic characteristics of epileptics attending a clinic at the ATBUTH from 2017 to 2020.

## **RESEARCH METHODOLOGY**

### **Ethical clearance**

Study was carried out in line with the guideline of the ethical committee on research of the ATBUTH, Bauchi

### **Study Area**

The study area is Abubakar Tafawa Balewa University Teaching Hospital, Bauchi State, Nigeria focusing on patient attended to at the psychiatric clinic

### **Sampling Techniques**

Survey type of sampling was adopted and all patients' folder were obtained and used for the study

### **Sample Population and Size**

The sample population and size were all the epileptic patients who attended clinic at the ATBUTH during the years under review

### **Data Collection**

Secondary data collection using patient folders at the record unit of the ATBUTH

### **Data Analysis**

The data obtained were analyzed using MS Excel version 16 for descriptive statistics

## **RESULTS AND DISCUSSION**

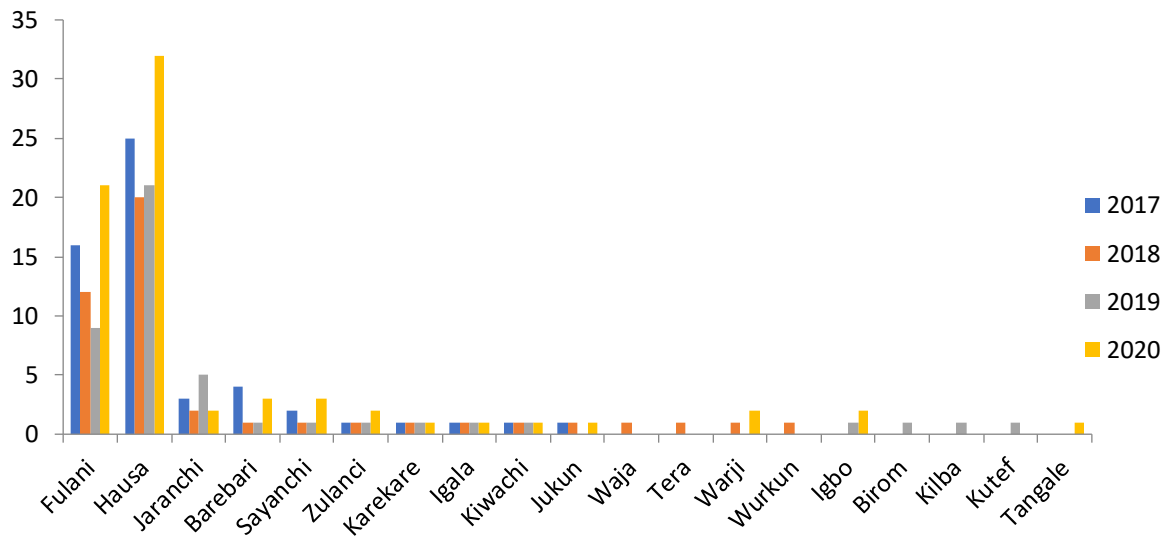
To adequately illustrate the data collected, we plot the graphs of descriptive statistics about individuals according to their socio-demographic characteristics which include, age, educational status, location, gender, marital status, employment status, tribe and religion.

**Data Coding and Cleaning (Normality)**

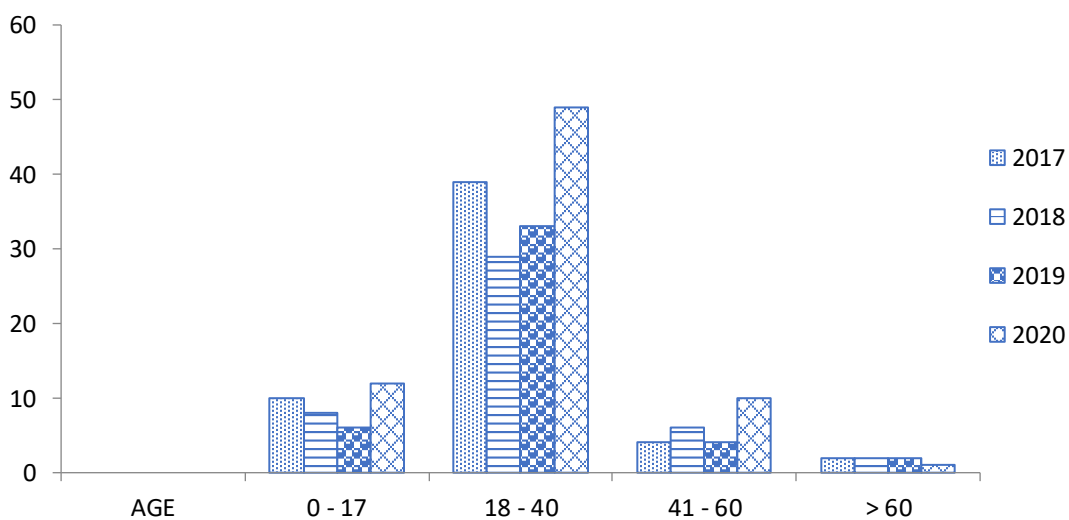
**Table 1: Socio-demographic Parameters of Epileptic Patients attending Clinic at ATBUTH (2017 – 2020)**

Years	No of Cases	Age (yrs)	F	Education	F	Location	F	Gender	F	Marital Status	F	Employment Status	F	Religion	F
2017	55	0 - 17	36	Tertiary	50	Urban	56	Male	124	Married	102	Employed	62	Islam	193
2018	45	18 - 40	150	Secondary	104	Rural	161	Female	93	Single	107	Unemployed	155	Christian	24
2019	45	41 - 60	24	Primary	27					Widow/Widower	5			Tradition	0
2020	72	> 60	7	None	36					Divorced	3				
<b>Total</b>	<b>217</b>		<b>217</b>		<b>217</b>		<b>217</b>		<b>217</b>		<b>217</b>		<b>217</b>		<b>217</b>

**Key: yrs = years; F = frequency**



**Figure 1: Ethnic groups of Epileptic Patients that attended the Clinic at ATBUTH Bauchi from 2017 – 2020**



**Figure 2 Age group of Epileptic Patients that attended the Clinic at ATBUTH Bauchi from 2017 – 2020**

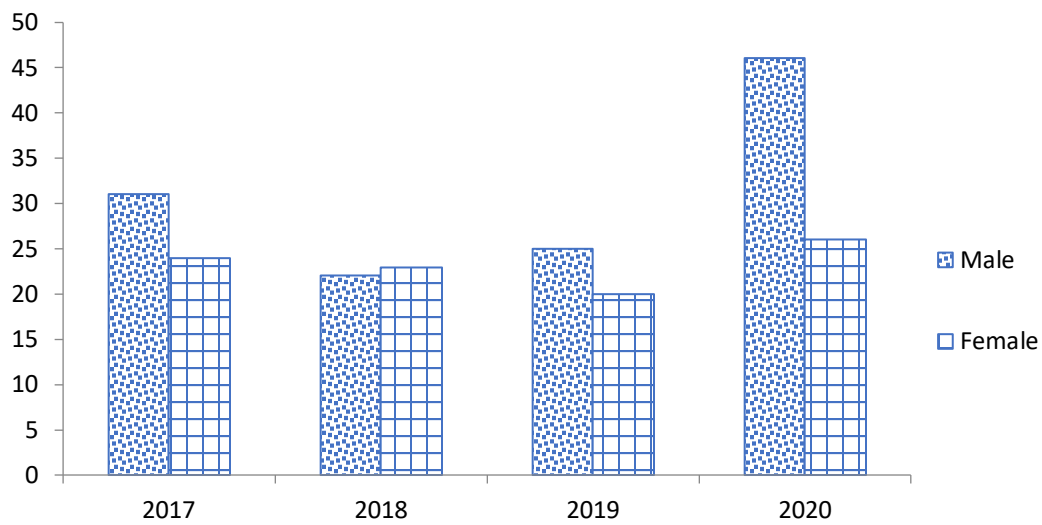


Figure 3: Sex Variation of Epileptic Patients that attended Clinic at ATBUTH Bauchi from 2017 – 2020

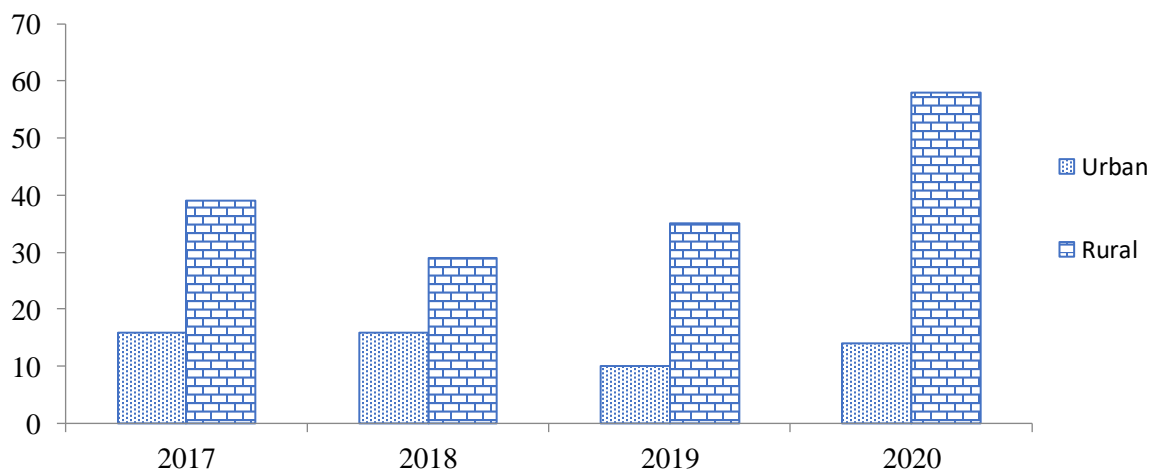


Figure 4: Locations of Epileptic Patients that attended the Clinic at ATBUTH Bauchi from 2017 – 2020

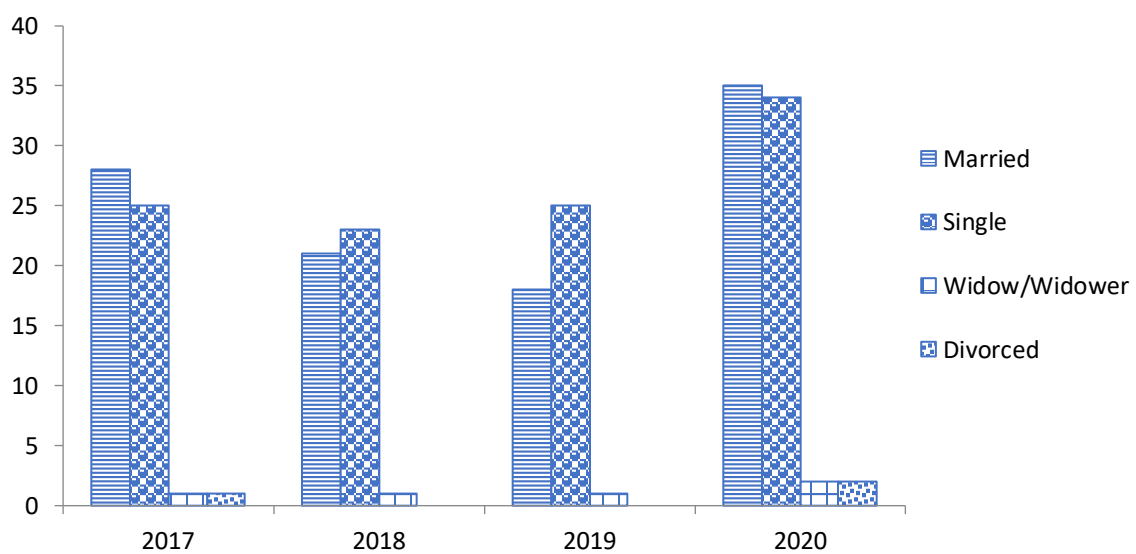


Figure 5: Marital Status of Epileptic Patients that attended Clinic at ATBUTH Bauchi from 2017 – 2020

### Marital Status

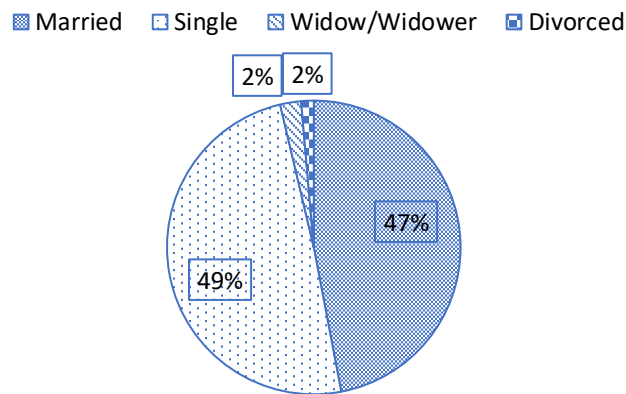


Figure 6: Marital Status by Percentage of Epileptic Patients that attended Clinic at ATBUTH Bauchi from 2017 – 2020

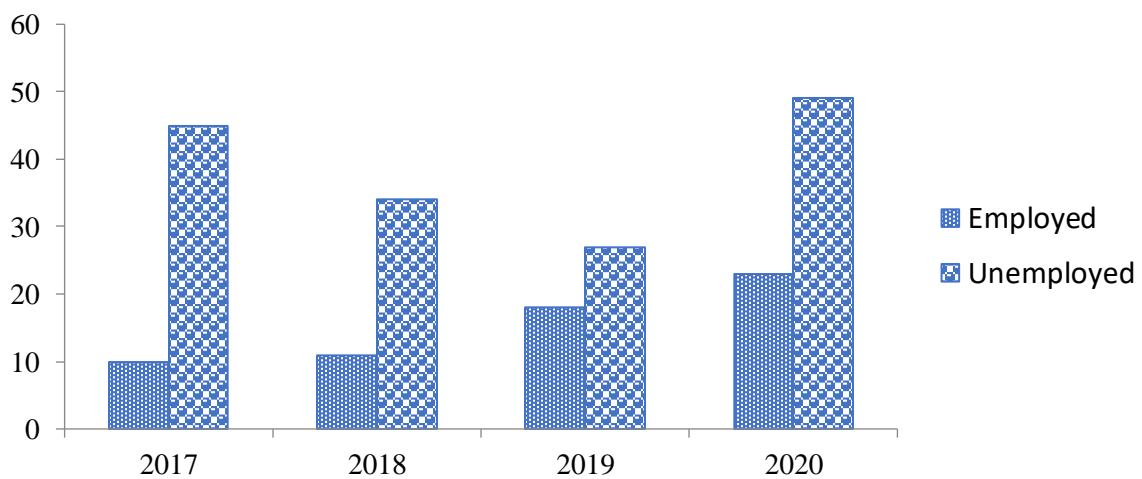


Figure 7: Employment Status of Epileptic Patients that attended Clinic at ATBUTH Bauchi from 2017 – 2020

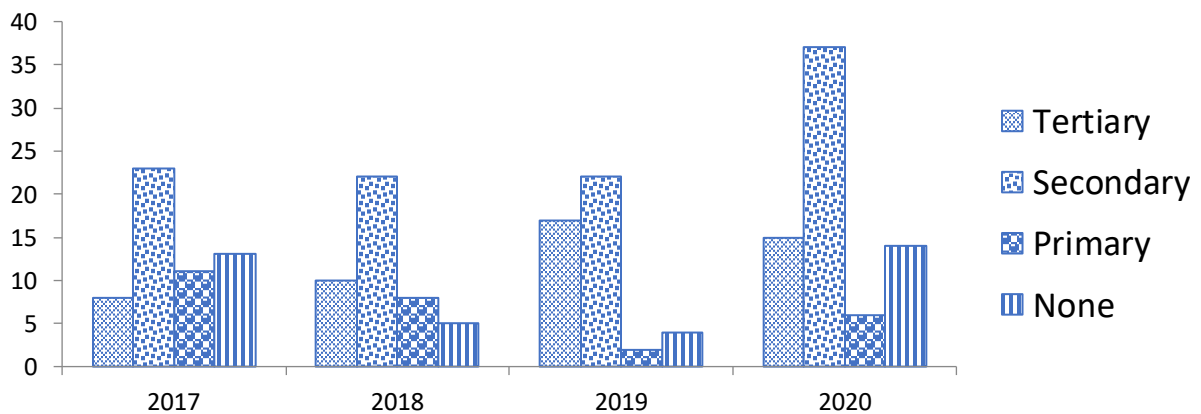


Figure 8: Educational Status of Epileptic Patients that attended Clinic at ATBUTH Bauchi from 2017 – 2020

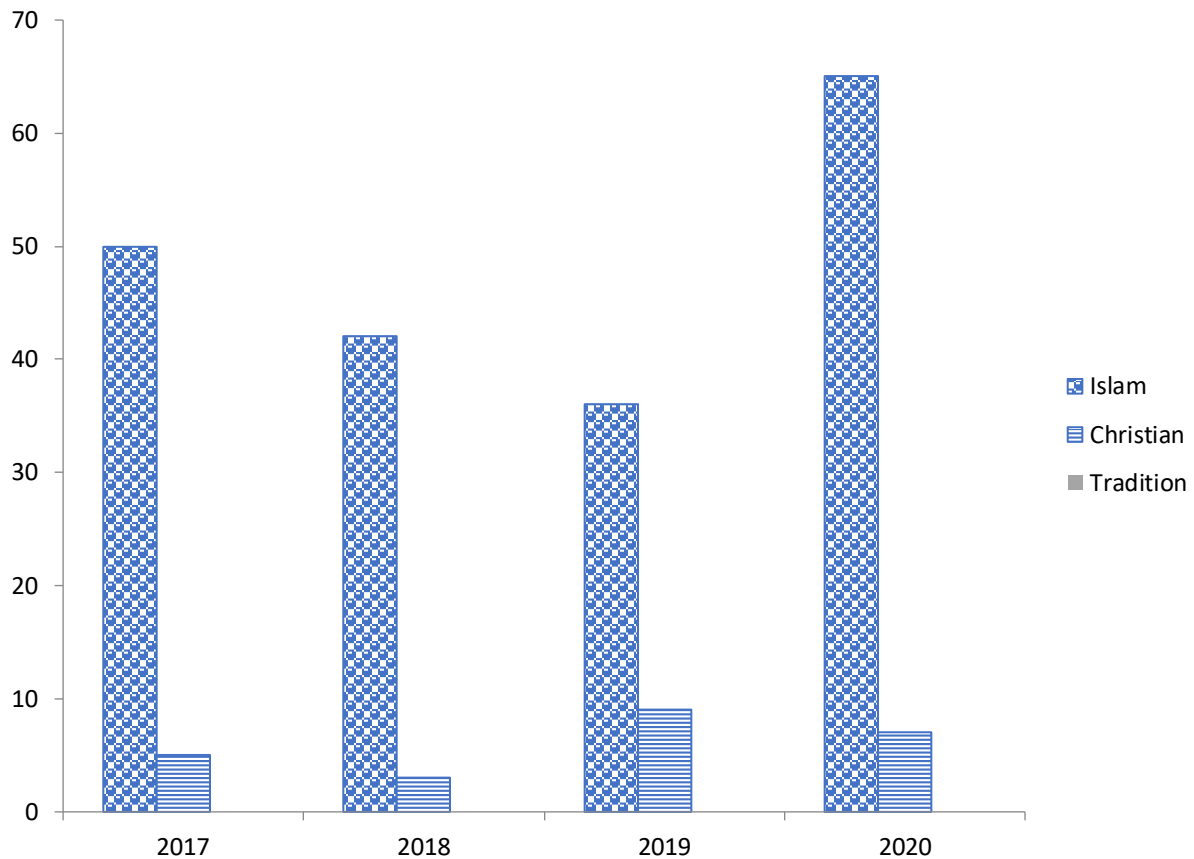


Figure 9: Religious Affiliation of Epileptic Patients that attended Clinic at ATBUTH Bauchi from 2017 - 2020

## DISCUSSION

The result of this study shows the various ethnic groups of the patients that attended a clinic at the ATBUTH between 2017 and 2020. Of all the ethnic groups, Hausa had the highest number of patients under this period of study followed by the Fulani ethnicity. This does not show that the Hausa-Fulani ethnic groups are more predisposed to have episodes of epilepsy but this could be because the Hausa-Fulani are the major ethnic groups in Bauchi and those attending a clinic at ATBUTH are more of them as earlier mentioned by Sarmiento *et al* (2021) that Bauchi State in north-eastern Nigeria is home to about five million people, with majority Hausa and Fulani ethnic groups. Out of this figure most are Muslim, with a small Christian minority.

The incidence of epilepsy was seen more in the young adult age group 18 - 40 years (69%) followed by the 1 - 17 years group (17%), then the 41 - 60 years (11%) and then the above 60 years group (3%). This shows that the trend increases and peaks in middle age and then starts declining after mid-age. This study doesn't agree with some studies especially by Beghi and Giussani (2018) that epilepsy is quite common in the elderly and comparatively more frequent in the adult population as compared to children and young adults.

With regards to gender variation, this study showed that epilepsy is averagely higher in male patients than in the females who attended ATBUTH between 2017 and 2020. This corroborates the common and popular knowledge and as succinctly put across by Beghi (2020) that incidence and prevalence of epilepsy are slightly higher in men than in women. The difference might be due to the prevalence of the most common risk factors in males than in females. Our

findings showed that the incidence of epilepsy was higher in the unemployed than in the employed. This still indicates that a good level of education shows a positive correlation with total quality of life score. An increase in the level of education has been associated with an increase in the quality of life of the patients. (Gebre and Haylay, (2018).

Just as Gebre & Haylay (2018) showed that the incidence of epilepsy was higher among rural dwellers than those who dwell in urban areas so also did this study. This could be due to the improved quality of life in the urban dwellers than in rural dweller.

A higher incidence was noticed among those at the secondary level of education than those with primary or tertiary level. This was followed by those at the tertiary level of education after which those with no education and lastly by those at the primary level of education. This correlates with the finding above that the incidence of epilepsy was higher in the 18 - 40 age group followed by the tertiary education. The result could be due to the adventurous nature of the younger population which predisposes them to various causative factors just as Gebre and Haylay (2018) reported.

There was a higher incidence of epilepsy among the Muslim population than the Christian but this does not mean that epilepsy is common among Muslims, it is just that the study population are more Muslim this is proven by the study conducted by Gebre and Haylay (2018). The population in Bauchi is majority of Muslims (Sarmiento *et al.*, 2021).

In conclusion, this study has shown through records that epilepsy is common in society and affects all age groups therefore there is a need to look for preventive measures against this ailment. There seems to be no data about epilepsy as a disease in Bauchi state and this study gives a foundation for future studies. The Government should be aware of this disease and therefore assist in bringing out preventive measures as well as awareness campaigns about the disease.

## References

- Almu, S., Tadesse, Z., Cooper, P., & Hackett, R. (2006). The prevalence of epilepsy in the Zay Society, Ethiopia – an area of high prevalence. *Seizure*, 15(3), 211-213.
- Beghi, E., & Giussani, G. (2018). Aging and the epidemiology of epilepsy. *Neuroepidemiology*, 51(3-4), 216-223.
- Beghi, E. (2020). The epidemiology of epilepsy. *Neuroepidemiology*, 54(2), 185-191.
- Fisher, R. S., Cross, J. H., French, J. A., Higurashi, N., Hirsch, E., Jansen, F. E. And Scheffer, I. E. (2017). Operational classification of seizure types by the International League Against Epilepsy: Position Paper of the ILAE Commission for Classification and Terminology. *Epilepsia*, 58(4): 522-530.
- Gebre, A. K., & Haylay, A. (2018). Sociodemographic, clinical variables, and quality of life in patients with epilepsy in Mekelle City, Northern Ethiopia. *Behavioural neurology*, 2018(1), 7593573.
- Gilliam, F., Kuzniecky, R., Faught, E., Black, L., Carpenter, G., & Schrodt, R. (1997). Patient-validated content of epilepsy-specific quality-of-life measurement. *Epilepsia*, 38(2), 233-236.
- Golechha, M., Bhatia, J., and Arya, D. S. (2010). Hydroalcoholic extract of *Emblica officinalis* Gaertn. Affords protection against PTZ-induced seizures, oxidative stress and cognitive impairment in rats. *Indian Journal of Experimental Biology*, 48(5): 474 - 478.



- Holland, P., Lane, S., Whitehead, M., Marson, A. G., & Jacoby, A. (2009). Labor market participation following onset of seizures and early epilepsy: findings from a UK cohort. *Epilepsia*, 50(5), 1030-1039.
- Jefferys, J.G.R. (2010). Advances in understanding basic mechanisms of epilepsy and seizures. *Seizure*, 19 : 638 – 664.
- Kaheni, S., Riyasi, H. R., Rezvani Kharashad, M. R., & Sharifzadeh Gh, N. S. (2011). Prevalence of epilepsy in children at primary schools and awareness of teachers about epilepsy at primary schools of Birjand at 2010. *Novel cares, Quarterly of science journal of nursing and midwifery in Birjand University of Medical Sciences*, 3, 135-142.
- Mohammadi, M. R., Ghanizadeh, A., Davidian, H., Mohammadi, M., & Norouzian, M. (2006). Prevalence of epilepsy and comorbidity of psychiatric disorders in Iran. *Seizure*, 15(7), 476-482.
- Morgan, C. L., Ahmed, Z., & Kerr, M. P. (2000). Social deprivation and prevalence of epilepsy and associated health usage. *Journal of Neurology, Neurosurgery & Psychiatry*, 69(1), 13-17.
- Nwani, P. O., Nwosu, M. C., Asomugha, L. A., Enwereji, K. O., Arinzechi, E. O. and Ogunniyi, A. O. (2015). Epidemiology of active epilepsy in a suburban community in Southeast Nigeria: A door-to-door survey. *Nigerian Journal of Clinical Practice*, 18(4): 527-533.
- Osakwe, C., Otte, W. M. and Alo, C. (2014). Epilepsy prevalence, potential causes and social beliefs in Ebonyi State and Benue State, Nigeria. *Epilepsy Research*, 108(2): 316-326.
- Sadr, S. S., Javanbakht, J., Javidan, A. N., Ghaffarpour, M., Khamse, S., & Naghshband, Z. (2018). Descriptive epidemiology: prevalence, incidence, sociodemographic factors, socioeconomic domains, and quality of life of epilepsy: an update and systematic review. *Archives of medical science: AMS*, 14(4), 717.
- Sarmiento, I., Ansari, U., Omer, K., Gidado, Y., Baba, M. C., Gamawa, A. I., ... & Cockcroft, A. (2021). Causes of short birth interval (kunka) in Bauchi State, Nigeria: systematizing local knowledge with fuzzy cognitive mapping. *Reproductive health*, 18, 1-18.
- Vo, C. Q., Samuelsen, P. J., Sommerseth, H. L., Wisløff, T., Wilsgaard, T., & Eggen, A. E. (2023). Comparing the sociodemographic characteristics of participants and non-participants in the population-based Tromsø Study. *BMC Public Health*, 23(1), 994.
- Wolf, P., Yacubian, E. M. T., Avanzini, G., Sander, T., Schmitz, B., Wandschneider, B., and Koepp, M. (2015). Juvenile myoclonic epilepsy: a system disorder of the brain. *Epilepsy Research*, 114: 2-12.
- World Health Organization (2012). Epilepsy. Fact Sheets No° 999. Retrieved March 03, 2019. [www.who.int/mediacentre/factsheets/fs094/en/](http://www.who.int/mediacentre/factsheets/fs094/en/).
- Yaya, J. A., Asunmo, A. A., Abolarinwa, S. T., & Onyenekwe, N. L. (2015). Challenges of record management in two health institutions in Lagos State, Nigeria. *International Journal of Research*, 1.

APPENDIX

1. SOCIODEMOGRAPHIC CHARACTERISTICS OF EPILEPTIC PATIENTS THAT ATTENDED CLINIC AT ATBUTH BETWEEN 2017 - 2020

S/ N	AGE	SEX	MARITAL STATUS	LOCATION		TRIBE	EMPLOYMENT STATUS		EDUCATIONAL LEVEL				RELIGION			
				Village	City		Employed	Not employed	No	Pr	Se	Te	Isla	Christia	Traditio	
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