

## TRADITIONAL BELIEFS AND KNOWLEDGE BASE ABOUT EPILEPSY AMONG UNIVERSITY STUDENTS IN GHANA

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**Introduction:** Epilepsy is a brain disorder characterized by abnormal neuronal electrical signal activity, which results in an array of clinical symptoms. These clinical symptoms may include unusual sensations, movements, emotions, and behavior changes. Sometimes full convulsions or partial muscle spasms may occur, as may loss of consciousness, depending on the nature and type of seizure activity. In Africa, persons with epilepsy are shunned and discriminated against in education, employment and marriage because epilepsy is often perceived as a shameful disease in the eyes of the general public. Epilepsy is also traditionally looked on as a curse by the ancestral spirits or attributed to possession by evil spirits. It is also thought to be due to witchcraft and "poisoning," and often thought to be highly contagious.

**Objectives:** The main objective of our study was to investigate the current psychosocial beliefs and knowledge about epilepsy among university students in Ghana.

**Methods:** The Antonak and Rankin's (1982) Scale of Attitudes Toward Persons with Epilepsy (ATPE-Form S) was administered to a voluntarily participating sample of 173 healthy Ghanaian university students without a history of seizure disorder or epilepsy.

**Results:** Pearson product-moment correlation analyses revealed a moderate relationship between the participants' knowledge about, and attitudes toward, persons with epilepsy. Results indicated a restricted knowledge about epilepsy as well as what appears to be a growing trend toward relatively favorable attitudes toward individuals with the disorder.

**Conclusions:** A trend toward more favorable attitudes was demonstrated in this study.

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Findings are therefore consistent with the view that attitudes about epilepsy among Ghanaian university students are changing. (*Ethn Dis.* 2013;23[1]:1-5)

**Key Words:** Epilepsy, Ghana, Traditional Beliefs, Antonak and Rankin's Scale

### INTRODUCTION

Epilepsy is the most ubiquitous neurological disorder.<sup>1</sup> While persons with epilepsy have to contend with the associated neurological and medical problems, they are also typically compelled to deal with the psychosocial sequelae of this disorder. It has, in fact, been suggested that the psychosocial correlates of epilepsy may be even more incapacitating to persons with epilepsy than the actual seizures themselves.<sup>2,3</sup> Persons with epilepsy (PWE) are often faced with the biasing perceptions of others, and the persistence of "enacted stigma"<sup>4</sup> toward epilepsy is indeed astounding. This appears especially true in certain developing societies where, for various reasons, epilepsy is still seen as an infectious disease that is caused by witchcraft.<sup>5,6</sup> Of the 50 million people with epilepsy worldwide, the estimated 80% people with this condition who live in developing countries suffer an inordinately heavy disease burden.<sup>7,8</sup> The social experience of being a PWE is deeply intertwined with one's social milieu.<sup>9</sup> In fact, some of the biggest constraints which limit efforts aimed at reducing the burden of epilepsy in developing countries are sociocultural factors that not only maintain the negative attitudes about the cause and treatment of epilepsy, but reinforce negative discriminatory and stigmatization practices.<sup>10</sup> Health seeking behaviors

typically reflect the causation beliefs about epilepsy; when epilepsy is attributed to supernatural causes, care seeking does not typically include attendance at local medical clinics. Findings from a survey in a large rural region of Zambia<sup>11</sup> showed that while less than 4% of individuals identified as PWE sought care from medical personnel, all had been seen by at least one traditional healer. In a more recent survey in the Kilimanjaro region of Tanzania, it was found that 93% of PWE had sought multiple types of care, including traditional healers, faith (prayer group) healers, in conjunction with Western medical health facilities.<sup>12</sup> There is compelling evidence that mistaken local perceptions and ill-informed cultural beliefs may be partly responsible for denial of prompt and appropriate treatment among PWE.<sup>13</sup>

The prevalence of epilepsy cases in developing nations ranges from 5 to 10 per 1,000 people,<sup>14</sup> and this compares with the worldwide rate of 2.8 to 19.5 per 1,000 of the general population, mostly among children. In 2005, the Atlas of Epilepsy Care in the World

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**Table 1. Sociodemographic characteristics of the study participants**

	%	Mean (SD)
Male	62.4	
Female	37.6	
Age, yrs		27.3 (6.7)
Ethnic background		
Akan	56.0	
Ewe	23.0	
Ga-Dangbe	11.0	
Dagomba	7.5	
Frafra	2.5	
Religious affiliation		
Christian, Catholic	16.0	
Christian, Protestant	36.0	
Christian, nondenominational	40.5	
Muslim	2.0	
Traditional African	5.5	

indicated that 80% of the burden of epilepsy can be found in the developing world, where between 80–90% of people with epilepsy do not receive any treatment at all.

Previous studies on the attitudes toward epilepsy have used measuring instruments of unknown validity and reliability.<sup>15</sup> Using a previously validated survey instrument, our study looks at beliefs and knowledge around epilepsy among Ghanaian university students in West Africa. Although there are a lot of studies on the attitudes of Africans toward epilepsy, only a few studies have focused on a highly educated population such as university students; our study is an attempt to fill this gap.

## METHODOLOGY

Data were obtained from a sample of 173 full-time resident students enrolled in a variety of undergraduate and graduate courses at the University of Ghana, who served as voluntary participants. Potential participants were recruited via flyers which were posted at various residence halls and public bulletin boards on the university campus. Also, a few university professors were randomly canvassed and invited to announce the call for research participation to their students. Only

full-time matriculated students who volunteered to participate in this study were included. Exclusion criteria were: 1) a history of brain injury or major mental disorder; or 2) a life history of having suffered a seizure. All participants gave informed consent prior to their inclusion in the study. Participants were neither offered, nor received, remuneration as a condition of participation in this study. Table 1 shows the sociodemographic variables of the study participants. We used Antonak's Scale of Attitudes toward persons with epilepsy (ATPE- Form S),<sup>16</sup> a 28-item rating scale that measures knowledge about, and attitudes toward people with epilepsy. The scale was selected in light of its sound psychometric properties.<sup>15,17</sup> Specifically, the ATPE-S had demonstrably adequate content and construct validity. Furthermore, with Spearman-Brown split-half reliability of .81 and alpha coefficient of .87 for the ATPE-S attitude scale, as well as KR-20 estimate of .59 and coefficient alpha of .97) for the knowledge scale,<sup>15,16</sup> the instrument was appropriate for use in our study.

## RESULTS

Pearson product-moment correlation analysis revealed a moderate relationship

between participants' knowledge about, and attitudes toward epilepsy,  $r(173) = .61, P < .05$ . The antecedent cause for this close link is beyond the scope of this study, however, Matovu<sup>18</sup> found that the use of didactic approaches comprising lectures and discussions aimed at increasing knowledge about epilepsy also enhances favorable attitudes toward persons with epilepsy.

## Knowledge about Epilepsy

The mean ATPE scale knowledge score for the entire sample was 5.86 (SD=2.23), out of a possible maximum score of 11. The male participants in this study had a mean knowledge score of 5.5 (SD=1.85), while females had a mean score of 5.6 (SD=2.0). Using the ATPE scale with a group of university students in the United States, Antonak<sup>17</sup> reported a mean knowledge score of 9.65 (SD=1.27) which indicates a higher level of knowledge about epilepsy than their Ghanaian cohorts.

In a survey-based research study, Johnson<sup>5</sup> asked 50 Ghanaian university students whether they believed epilepsy to be caused by witchcraft. This question was again posed to students at the same institution 30 years later in our study, and both results are shown in Table 2.

As Table 2 shows, the proportion of respondents who endorsed witchcraft as a cause of epilepsy remained relatively stable at somewhere between a quarter and a third of the total samples across 30 years. With the passage of time however, there has been a substantial increase in the proportion of students expressing their disbelief, as well as a concomitant shift away from professed naivety, on the issue.

Most of the respondents in this study (82.6%) correctly disagreed with the statement that epilepsy is an infectious disease, while 13.3% believed epilepsy to be infectious. These results are again in stark contrast to Johnson's<sup>5</sup> findings where as many as 78% wrongly believed it to be infectious, with just

20% correctly saying that it is not an infectious disease.

### Attitudes toward Epilepsy

The mean ATPE scale attitude score for the entire sample was 85.16 (SD=14.0) out of a possible maximum score of 126. The mean attitude scores for the male and female respondents were 85.18 (SD=13.48) and 85.12 (SD=15.04), respectively. Antonak's<sup>17</sup> American university student sample again had a higher mean ATPE scale attitude score (112.58, SD=10.06) than their Ghanaian counterparts.

When our study's respondents were asked whether the onset of epileptic seizures in a spouse is sufficient reason for divorce, 15.2% agreed while 84.8% disagreed with this statement, indicating some element of ingrained attitudes in a minority of the sample.

### Frequency of Contact with Persons with Epilepsy

Results indicate that 21.39% of the respondents denied ever coming into contact with a person with epilepsy while 66.47% and 12.14% reported infrequent, and very frequent contact, respectively. There was no significant relationship between the participants' frequency of contact with persons with epilepsy and their ATPE scale attitude scores,  $r(173) = -.11, P=.134$ . The product-moment correlation between frequency of contact with persons with epilepsy and ATPE scale knowledge scores also yielded no statistically significant relationship,  $r(173) = -.07, P=.362$ .

## DISCUSSION

The aim of our study was to examine the beliefs and knowledge base about epilepsy among a cohort of university students in Ghana. Our study demonstrates a trend toward changing attitudes about epilepsy; these findings can ultimately help interventionists

design appropriate methods to modify the negative attitudes still persistent toward persons with epilepsy. An emerging view from our study, based on the respondents' knowledge scores on the ATPE scale, is that epilepsy is a poorly understood disorder among Ghanaian university students. It has long been observed that the belief structures and concepts of illness of African students are very similar to those in the wider culture around them.<sup>19</sup> While this may be true, a more compelling explanation for the restricted knowledge about epilepsy in this sample appears to be the lack of readily accessible and accurate information about the disorder. This is typically not the case in many developed countries where the mass media and special interest groups (like the Epilepsy Foundation of America) have made remarkable progress in educating people about epilepsy. In a cross-sectional survey involving 380 persons made up of government workers and the general public in Accra, Ghana, it was found that almost all the people interviewed could accurately describe an individual who is actively having a generalized seizure.<sup>20</sup> Interestingly, however, nearly half (45.3%) of the respondents did not know that epilepsy is brought on by neuronal electrical seizure discharges. Of the 380 people who responded, 31.8% indicated that it was exclusively inherited, and 27.9% indicated that it was due to witchcraft or juju (ie, spiritual causes). Those who responded that they did not know the causes of epilepsy were mostly younger in age, and from lower socioeconomic backgrounds. In a related study about the knowledge and attitudes of Nigerians toward epilepsy, heredity was mentioned as the main cause of epilepsy (19.9%), followed by brain injury (19.2%), evil spirits (16.3%) and brain infection (11.7%).<sup>21</sup> A study of the attitudes, beliefs and knowledge of epilepsy among rural inhabitants of Tanzania indicated that nearly 70%

indicated that they did not know the cause of epilepsy.<sup>22</sup> Further, 33.3% identified heredity, witchcraft, infection of the spinal cord, hernia, insects in the stomach and casting of evil spells on the individuals as possible causes of epilepsy. It may well be that the knowledge gaps about epilepsy are multifactorial in themselves, and as such researchers might well devote resources into understanding which particular knowledge areas might be more likely to boost more favorable and appropriate attitudes toward PWE.

Given the low level of knowledge about epilepsy, it is not surprising that more favorable attitudes toward persons with epilepsy were not expressed by the sample in this study. These poor attitudes can in turn negatively affect the mental and social well-being of individuals with the disorder. Studies<sup>23,24</sup> have shown that this indeed is the case, with self-reports of social isolation and withdrawal being severe problems in individuals with epilepsy.<sup>25</sup>

It appears reasonable to conjecture that most of the unfavorable attitudes can be eradicated by stronger and more specific efforts to increase people's knowledge of epilepsy. A point worthy of note is that recently, there have been attempts by NGOs such as the Psycho Health Foundation and the Ghana Epilepsy Association to educate the general public about the causes of epilepsy. In a study sponsored by the International League Against Epilepsy, the

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**Table 2. Changing responses to the question, “Is epilepsy caused by witchcraft?” (%)**

Responses	Johnson <sup>5</sup> Study	Present Study
Agree	28.0	24.9
Don't know	24.0	0.6
Disagree	48.0	74.6

International Bureau for Epilepsy, and the World Health Organization Global Campaign Against Epilepsy,<sup>26</sup> it was found that among the Guarani communities in Bolivia, the concept of epilepsy as an embodied disease with natural causes is quite different from the belief systems in traditional societies in Africa. According to Bruno et al, people with epilepsy do not represent a threat to the community, which seems to have an attitude aimed at their protection. Moreover, people from these communities appear to favor a combination of biomedical and traditional care systems.<sup>26</sup> Unlike Ghanaians, the Guarani communities in Bolivia attribute epilepsy mainly to a failure to observe a fasting period and other eating habits. Consequently, natural remedies are the most recommended treatments.

Contrary to intuitive expectation, the findings from our study demonstrate that frequency of contact with persons with epilepsy per se has an almost negligible relationship with students' attitudes and accurate knowledge about the disorder. On the basis of these results, it is quite possible that simply using an experiential approach in isolation as a means of modifying psychosocial beliefs about epilepsy may not be a very effective educational intervention technique. More studies are needed to help determine the most effective and least expensive methods of such education in Africa.

The merit of our study lies in the demonstration that remarkable changes have been made in students' demonstrated knowledge about epilepsy over the past three decades or so. More specifically, over the years, there has been a shift away from beliefs in epilepsy as a

contagious disease. Perhaps deeply ingrained traditional perceptions about disease causation are slowly undergoing change with increased accessibility to Internet resources, mobile communications and other elements that reflect greater culture contact and globalization.

In regard to beliefs that witchcraft causes epilepsy, our study shows that students have become more definite in their views, with only a small percentage of respondents still believing it to be caused by witchcraft. In addition to casting doubts on the view that traditional beliefs in Africa are intractable, these changes also provide optimism that beliefs, knowledge, and attitudes about epilepsy can in fact be modified with appropriate intervention. The strong belief in African traditional religion makes it very difficult for most people in Africa to ignore the role of the supernatural in the daily activities of an average African. Consequently, it is important to understand the role of religion in relation to attitudes toward persons living with epilepsy. Indeed, it has been noted elsewhere that “the African is said to be notoriously religious”<sup>27</sup> and gives religious interpretations to the causation of strange diseases such as epilepsy. We take consolation from the fact that our study has demonstrated that, although there appear to be persistence in traditional beliefs, Ghanaian students now have more favorable attitudes toward persons with epilepsy as compared to 30 years ago.

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