

# Epilepsy: Knowledge and Attitudes of Primary School Teachers in the City of Bouake/Ivory Coast

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## Abstract

We report the results of a two-month descriptive observational survey to assess the knowledge about epilepsy among primary school teachers in Bouake in Ivory Coast. This study included 310 teachers who were randomly chosen from three Primary School Inspections (PSI). Almost all the teachers who were included had shown inaccurate information about epilepsy. 46.45% of the respondents thought that epilepsy was contagious and 47.74% recommended to avoid contacting with salivary secretions of the patient during seizure. For 16.45% of them, persons living with epilepsy (PWE) could be not married and 19.7% believed that PWE could not have children due to the risk of transmission. This study highlights the urgent need of awareness campaigns among primary school teachers.

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## Introduction

Epilepsy is a common neurological disorder with multiple and often curable causes [1]. Epilepsy affects approximately 50 million people worldwide making it the most common neurological disorder globally [2]. Most people living with epilepsy (PWE) live in low and middle income countries [3]. The prevalence of epilepsy in Africa is greater than 10‰ [4]. In Sub-Saharan Africa (SSA), the prevalence of active convulsive epilepsy is high and range from 2.2 to 58 per 1000 affecting and estimated 4.4 million people [5].

In Ivory Coast, the prevalence of epilepsy has been estimated at 7‰ by Kouassi and al. [6]. The PWE are still too often stigmatized because of the lack of knowledge about this disease and supernatural beliefs in the population [7]. In Ivory Coast, several studies have demonstrated focused on the sociocultural aspects of the epilepsy in different population groups. Assi and al. carried out a study in a population of students in Abidjan [8]. Boa and al. assessed the knowledges and beliefs on epilepsy in next of kin of PWE hospitalised in neurology [9]. Akani and al. conducted a study on the knowledges of medical traditional health practitioners on epilepsy [10].

Increased attention is currently scope to the quality of life, that is to say to the psychological and social problems faced by PWE, including access to education. Doumbia and al. have found 35.2‰ epilepsy in the preparatory course (C.P.1) students in their study carried out in one commune of abidjan in Ivory Coast [11]. Schools should offer some useful information and assistance in health issues, such as epilepsy. Therefore, teachers should have sufficient knowledge for this purpose. Our study aims at assessing the level of knowledge of primary school teacher in the city of Bouake in Ivory Coast.

## Material and Methods

That was a two-month descriptive observational study in the city of Bouake. Bouake, the second largest city, is located at the central part of Ivory Coast about 355 km of Abidjan which is the economic capital. The study was carried out based on the anonymous questionnaire on the socio-demographic characteristics, knowledge, beliefs and practical attitudes of respondents regarding to the epilepsy. It included both open and

closed questions. The questionnaire was distributed to the respondents during the break and retrieved at the end of the same day for each school identified. It was validated after two pre-tests with two different groups of teachers from Bouake. This study was done in 3 Primary School Inspections (PSI) which were randomly chosen among 5 PSI of the city in Bouake. We founded the maximum size of the sample with EPI Info 7.2 software. As a result, 310 teachers were recruited from 10 primary schools.

## Results

Most of the respondents were men (73.87%) and the average age was 43.08 years. Muslims were predominant (46.45%), followed by Christians (33.87%) and animists (19.68%). 59.03% of the respondents had a high school level and (40.97%) had university level. Table 1 shows the demographic characteristics of the respondents.

### **Knowledge about epilepsy** (Table 2)

#### *Origin of Epilepsy*

84.84% of respondents had little knowledge about epilepsy. However 62.58% thought that epilepsy was a brain disorder of medical origin which may lead to madness within 32.9% of respondents. While 17.4% of respondents believed that it was a spiritual illness caused by devil or God). 11.9% of respondents considered it as an hereditary disease.

#### *Clinical Signs*

61.9% of teachers knew the generalized tonic-clonic seizure. For most of respondents (79.68%), the foamy drooling was a clinical sign of epileptic seizures. A loss of consciousness was reported in 54.2% of respondents, stiffness and muscle twitching were in 53.23% and 48.39% cases, respectively. The urinary incontinence and the tongue biting occurred in 18.39% and 11.3% respectively. None of the respondents reported the « absence » seizure. 6.77% of teachers had an epileptic patient in their classrooms.

#### *Favouring Factors*

Respondents had little knowledge about contributing factors of the epileptic seizures. The head traumatism was the main favouring factor among 25.2% of respondents, while alcohol, insomnia and infections were considered as causes in 7.74%, 6.77% and 6.45% of participants respectively.

Table 1. Demographic characteristics of the respondents (N=310)

Characteristics		Frequency (n)	Percentage (%)
Gender	Male	229	73,87
	Female	81	26,13
Marital status	Married	183	59,00
	Single	121	39,00
	Divorced	3	1,00
	Widowed	3	1,00
Level of education	Secondary	183	59,03
	University	127	40,97
Religion	Muslim	144	46,45
	Christian	105	33,87
	Animist	61	19,68
Had a student living with epilepsy in their classes	yes	21	6,77
	No	289	93,23

Table 2. Knowledge about epilepsy

Variable		Frequency	Percentage (%)
Awareness on epilepsy	No	42	13,55
	Little	263	84,84
	Good	5	1,61
Origin of epilepsy	Brain disorder	194	62,58
	Lead to madness	102	32,9
	Spiritual illness (evil or God)	54	17,4
	Inherited disease	37	11,9
	Ancesters disease	2	0,65
Clinical signs	Foamy drooling	247	79,68
	Loss of consciousness	168	54,2
	Stiffness	165	53,23
	Muscle twitching	150	48,39
	Loss of urine	57	18,39
	Tongue bite	35	11,30
Favouring factors	Head trauma	78	25,2
	Alcohol	24	7,74
	Insomnia	21	6,77
	Infections	20	6,45
Contagiousness of epilepsy	Yes	144	46,45
	No	166	53,55
Way of contagion	Body fluid (drool)	125	40,32
	Contact with patient in seizure	109	35,16
	Eat in the same plates	10	3,23
	Share same clothes	1	0,32

### *Perception of Epilepsy*

46.45% of the respondents believed in the contagiousness of epilepsy 40.32% by body fluids (drool), and 35.16% in contact with the seizure patient. 85.87% of the respondents regarded epilepsy as curable disease.

### *Attitudes Toward Epilepsy*

Among the teachers, 35.16% recommended avoiding the contact with the patient during seizures and 47.74% insisted on the avoidance of the foaming drool. Actions such as "pouring water or powder on the subject" and "praying during the crisis" were mentioned in 10% and 10.96% cases, respectively. However, 25.16% of the teachers suggested to prevent the patient from falling during seizures and 37.74% mentioned to take him immediately to the hospital.

### *Epilepsy and Daily Life*

99.35% of the respondents admitted that PWE should not be excluded from school, and thus, they should continue their normal education. 56% of participants considered that the PWE should not hold a position of responsibility in the community or working setting as village chief or company manager. The occupational setting of PWE should not be informed of their condition in 51.94% cases. Moreover, the PWE go to nightclub, eat with, play video games have children and get married in 65.48%, 46.13%, 37.5%, 19.70% and 16.45% cases of respondents, respectively. According to 50.32% of teachers, the PWE could drive a vehicle and 3.87% of whom would be in agreement with driving a public transport vehicle. 34.19% of teachers supposed that the PWE should not be buried in the same cemeteries with the others. Table 3 shows the beliefs on epilepsy.

### *Expectations of Teachers*

Our study revealed that all teachers needed thorough information about epilepsy. The information tools used were distribution of flyers (44.5%), audiovisual media (32.26%), availability of scientific papers (16.77%). The majority of respondents suggested that PWE should join associations of patients, friends and parents of patients (96.15%). This membership would help to better understand the epilepsy (63.87%), raise awareness (56.45%), access to the treatment (27.74%)

and improve the management of epilepsy (43.55%).

### **Discussion**

This study has been done in a young and high educated population. We found that the majority of primary school teachers, who have completed higher education, indicated that they were not enough informed about the epilepsy. This finding was also reported by Maïga (58.7% of the teachers) in Mali [7], Kiwanuka in Uganda [3] and Owolabi in a study conducted in a school teachers population in Nigeria [12]. Despite this fact, they knew that epilepsy was a brain disorder from a medical origin. In contrast, some teacher considered it as a supernatural disease due the deep-rooted beliefs in population. This finding agrees with the studies in Abidjan [8], in Benin [1], in Nigeria [12, 13], in Ouganda [3], in Zimbabwe [14] and in Brazil [15]. The confusion between epilepsy and mental illness remains, since 32.9% of the respondents admitted that the epilepsy was related to madness.

Many teachers have recognized the spectacular tonic-clonic seizure, associated with stiffness, convulsion, loss of consciousness, tongue biting and urinary incontinence. The tonic-clonic seizure, generally known as the "great evil" seizure, considered as the major symptom of the epilepsy, which is well describe by our participants [8]. This finding agrees with other reports [12,16]. None of the respondents knew the absence seizure. It rarely helps to diagnose the epilepsy since it highly unseen [10]. This finding reported by Owolabi has great implication for in-school recognition of non convulsive seizure [12]. The « absence » seizure mostly occurs in school-aged children, with poor school performance implications. Hereby, it is relevant for teachers to be aware of this disease so that they will contribute to diagnose it early. Further more, they should aware of the factors favouring the occurrence of seizures. The concept of contagiousness still remains. 79.68% of teachers identified the foamy drooling as clinical sign of epilepsy, and 39.14% believed that epilepsy could be spread by touching with the patient during the seizure. This fact was also identified by Owolabi [12] and increases the attitudes of fear and rejection of the patient [10,12]. The conceptions including "avoid touching PWE in seizure" and "avoid his drool" are strongly indicated by the teachers despite their high education level and explain

Table 3. Beliefs on epilepsy

Variable		Frequency	Percentage (%)	
Attitude toward PWE in seizure	Avoidness of the foaming drool	148	47,74	
	Take immediately to hospital	117	37,74	
	Avoid contact with the patiente in seizure	109	35,16	
	Prevent from falling during seizure	78	25,16	
	Praying during seizure	34	10,96	
	Pouring water or powder	31	10	
Epilepsy and daily life	PWE could continue normal education	Yes	308	99,35
		No	2	0,65
	PWE should go to nightclub	Yes	107	34,52
		No	203	65,48
	PWE could hold a position of responsibility	Yes	136	44
		No	174	56
	The professionnal community of PWE should be informe of its state	Yes	149	48,06
		No	161	51,94
	PWE should eat on the same plate as the others	Yes	167	53,87
		No	143	46,13
	PWE Could drive a vehicle	Yes	156	50,32
		No	154	49,68
	PWE Could drive a public transport vehicle	Yes	12	3,87
		No	298	96,13
	PWE should play video games	Yes	194	62,6
		No	116	37,4
	PWE should have children	Yes	249	80,30
		No	61	19,70
	PWE should get married	Yes	259	83,55
		No	51	16,45
	PWE should be buried in the same cimeteries as the others	Yes	204	65,81
		No	106	34,19

the high rate of accidents occurring within PWE during seizures [8].

The daily life of PWE is characterized by these misconceptions and thus, leading to social, professional, and family prohibitions as also described by Assi and al [8]. All teachers have admitted that the PWE can maintain normal schooling. Objectively, education of epileptic children, can be hindered by several problems, including psychomotor disorder, fear of discrimination, fear of falling in the crowd, and family guilt [17]. 56% of teachers have revealed that the PWE should not have a position of responsibility. Assi and al. have made the same observation in a student population in Abidjan in Ivory Coast and have linked it with the suddenness and disabling nature of epileptic seizures [8]. The professional environment of PWE should not be informed according to 51.94% of the teachers because of the fear of exclusion or dismissal [8]. Therefore the awareness of the occupational community may help to take actions during seizures or to obtain a job adaptation [8].

The lack of knowledge about epilepsy will perpetuate the misconceptions. In addition, the PWE must not only have leisure, such as disco and video games but also eat on the same plates as other members of the family. This fact is a major factor of exclusion in traditional African settings [7, 8, 18]. In some cultures, the epilepsy is still considered as a reason to prohibit or cancel a wedding among 16.45% of our study respondents [19] due to the risk of transmission to offspring. All respondents would like to get more information about epilepsy through flyers or audiovisual media. The Ivorian Association against Epilepsy (A.I.L.E) should implement a social marketing strategy on epilepsy awareness flyers and to increase the sensibility campaign for teachers in Bouake so that they would eliminate the misconceptions about epilepsy. This awareness activity could be done in collaboration with the association "stop epilepsie", an Ivorian association of PWE and PWE family.

### Limitations

This study has some limitations which should be considered in the interpretation of our findings. Explanations were provided to the participant on some questions and this might have affected their responses. The study took place over two months and some

teachers interviewed could have given information to their colleagues or read documents. This might have affected their spontaneous responses. Despite these limitations, the benefit of this study is that it provides responses that can be considered as baseline for the A.I.L.E social marketing strategy, and considered as baseline for comparison with the next studies.

### Conclusion

Primary school teachers play a vital role in educational and psychosocial development of student as an important part of their life is spent at school. The epilepsy is still, an unknown neurological disorder due to several misconceptions and the lack of knowledge in view of this study. Primary school teachers have erroneous knowledge about epilepsy. Hereby, this study should carefully suggest to enhance the understanding or perception of this disease among the populations, particularly in primary school teachers under the management of the Ivorian Association against Epilepsy (A.I.L.E).

### Conflict of interest

Authors declare no conflict of interest

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