

Epilepsy knowledge, attitudes, behaviors, and associated factors among primary, post-primary, and secondary school teachers in Ouagadougou (Burkina Faso)

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SUMMARY

Background. Epilepsy is one of the most common pediatric neurological disorders. The knowledge and attitude of teachers toward epileptic students can be crucial.

Patients and methods. This cross-sectional study was carried on schoolteachers in the city of Ouagadougou during the period from March 02 to July 20, 2020. The schools were chosen randomly among a list of recognized public or private establishments.

Results. Two hundred and twenty teachers were included in the study. Among them, 35.45% were post-primary teachers. Most of them had already heard of epilepsy (98.6%). For the majority of school teachers, epilepsy was not a contagious disease (74%). Regarding the causes of epilepsy, the majority of participants had listed brain disease (65%) and genetic disorders (18.20%). The majority of schoolteachers (70.9%) believed that students with epilepsy usually had associated mental retardation. For the majority of teachers (73.20%), epilepsy was a stigmatizing disease, and students with epilepsy should benefit from personalized supervision (65%). The majority of schoolteachers (75.9%) had a good knowledge of epilepsy, and 43.6% had good attitudes toward epilepsy. The factor associated with teachers' knowledge was having witnessed an epileptic seizure ($p < 0.05$). The factors related to schoolteacher practice was gender ($p < 0.05$) and having already witnessed an epileptic seizure ($p < 0.05$)

Conclusion. Our study found that teachers had a good knowledge of epilepsy, but attitudes and practices were inadequate.

Key words: epilepsy • knowledge • attitudes • practices • epileptic child

INTRODUCTION

Epilepsy is one of the most common pediatric neurological disorders with a higher incidence during the school years (Jan, 2005). The prevalence rate of epilepsy in children in developed and developing countries ranges between 3/1000 and 22.2/1000 (Beilmann et al., 1999; Radhakrishnan et al., 2000). Children with epilepsy are at increased risk of educational underachievement, learning difficulties, mental health problems, social isolation, and poor self-esteem (Sbarra et al., 2002). The school period will significantly impact the child's quality of life and future adult roles (Williams, 2003). At the global forum, it is estimated that approximately 0.5% of school-age children are affected by epilepsy (Leppick, 2001). School teachers play a central role in determining access to education for students living with epilepsy and may mediate epilepsy-associated stigma (Fernandes et al., 2007). Teachers' level of knowledge and attitude toward epileptic students can be crucial in their characters, i.e., development and academic achievement (England et al., 2004). Several studies have been conducted on the knowledge of epilepsy among teachers and on their attitudes towards epilepsy in many countries, as in the United States (Bishop et al., 2004;2006); in Europa (Prpic et al., 2003; Kaleyias et al., 2005; Mecarelli et al., 2010) and Asia (Bekiroglu et al., 2004; Lee et al., 2010; Thacker et al., 2008). Several studies have indicated that teachers often have insufficient knowledge, inadequate training, and misconceptions about epilepsy and its management (Prpic et al., 2003; Dantas et al.,2001). In Sub-Saharan Africa, the prevalence of epilepsy in children ranges between 7.3 per 1,000 to 41 per 1,000 (Christianson et al., 2000; Mung'ala-Odera et al., 2008). The most commonly prescribed antiepileptic drug in children was valproic acid, followed by phenobarbital and carbamazepine (Doumbia-Ouattara et al., 2013; Ibinga et al., 2015). The education of children with epilepsy remains much lower than that of the general population, with an enrollment rate varying between 2.8% in CAR to 91.7% in Nigeria (Mbelesso et al., 2009; Lagunju et al., 2012). This situation would be linked to the stigma that makes some parents oppose schooling to protect the child against the onset of crises in public (Chomba et al., 2008; Sharkawy et al., 2006). Furthermore, teachers usually do not have any formal training on dealing with epileptic children (Birbeck et al., 2006). The numerous studies carried out on the level of knowledge of teachers and their attitudes towards epilepsy show that African teachers

have a low level of knowledge and practice in relation to epilepsy (Birbeck et al., 2006; Ojinnaka et al., 2002; Boubacar et al., 2016; Ategbo et al., 2014; Ndour et al., 2004; Mustapha et al., 2013; Sanya et al., 2005).

In Burkina Faso, the prevalence of epilepsy and the school enrollment rate of children with epilepsy are not known. Already, primary and secondary school teachers did not receive specific lessons on epilepsy. According to previous studies, schoolteachers had a good familiarity with epilepsy, poor knowledge of epilepsy, and poor practice in the face of epilepsy (Millogo et al., 2001; 2004). The objective of this study was to determine the current level of knowledge and behavior of primary and post-primary teachers in the city of Ouagadougou.

MATERIAL AND METHODS

Study location

Ouagadougou, the administrative and political capital of Burkina Faso, has an area of 24,000 km². A predominantly agricultural country with 85% of the active population in agriculture, Burkina Faso is located in the heart of West Africa. It is part of the developing countries, and Burkina Faso covers an area of approximately 274,200 km². Its population was estimated at 16,248 558 inhabitants in 2011 and 20,244,080 inhabitants in 2020. The education system has four levels: preschool (kindergarten), primary, post-primary and secondary. Ouagadougou covers an area of 2,805 km² with more than 2 532,311 inhabitants in 2015. The city of Ouagadougou provides 1,948 establishments of primary schools, including 1,445 private schools and 503 public schools. There are 6,892 primary school teachers, 804 post-primary school teachers, and 11,560 secondary school teachers.

Primary and secondary teacher training

Primary school teachers are recruited after obtaining the secondary or technical certificate. They are admitted for two years to the Ecole Nationale des Enseignants du Primaire (ENEP), where they receive training in educational sciences. As for post-primary and secondary teachers, they are trained at the Ecole Normale Supérieure de Koudougou (ENS) and the Institut des Sciences (IDS). ENS trains teachers at the Certificate of Aptitude for Teaching in Secondary Education (CAPES) and teachers at the Certificate of Aptitude for Teaching in post-primary level (CAP-CEG level).

CAPES level teachers are recruited based on a license (or any equivalent diploma) or a competitive examination for CAP-CEG teachers with at least three years of post-primary teaching experience. They are intended to teach mathematics, French, English, Geographic history, physical chemistry, life and earth sciences, physical and sporting events at the post-primary and secondary levels. CAP-CEG level teachers are recruited based on two years after baccalaureate or the baccalaureate series C, D (scientific series) or having an equivalent diploma who are intended to teach in post-primary only, i.e., from sixth to third. The training aims to provide these teachers with the skills to teach two disciplines (mathematics and physics – chemistry; mathematics and life and earth sciences; French – English; French history – geography). As for the IDS, it only trains teachers at the Certificate of Aptitude for Teaching in Secondary Education level in Mathematics, Physics and Chemistry and Mathematics, Life Sciences and the Earth, recruited from the baccalaureate series C, D (scientific series) or having an equivalent diploma. Candidates graduate after four years of training with a certificate of aptitude for teaching at CEG (CAP-CEG).

Study profile

This was a cross-sectional study over five months from March 02, 2020 to July 03, 2020 in Ouagadougou, Burkina Faso.

Study population

This study concerned primary, post-primary, and secondary school teachers from public and private establishments in Ouagadougou who met the following criteria: (1) have at least one year of professional experience, (2) have agreed to complete the questionnaire. Support teachers were not included in our study.

Sampling

Calculation of population study

The total number of teachers in Ouagadougou (all cycles combined) was 19,256 teachers. For this, we used the following formula: $N = z^2 \cdot p(1-p) / m^2$ (N = sample size, z = confidence level, p = proportion of the population that has characteristic, m = margin of error). We introduced the following parameters: the size of the teaching population at 19,256, i.e., a proportion of 94%, a margin of error of 3%, and a confidence level of 95% ($z = 1.96$). We obtained a sample size of 258 teachers.

Choice of establishments

The schools were chosen randomly among a list of recognized public or private establishments.

Data tools collection

Our data collection instrument was a self-developed questionnaire that included 20 questions related to epilepsy.

Study variables

The study variables were grouped into three sections: sociodemographic variables (age, sex, level of study, teacher qualification, professional length), variables linked to knowledge about epilepsy (information on epilepsy, source of information, type of disease, social category affected by the disease, manifestations of the generalized tonic-clonic seizure, the causes of epilepsy, contagiousness of epilepsy, risks associated with an epileptic seizure, consequences of epilepsy, curability of epilepsy), variables linked to attitudes and practices on epilepsy (assistance with a crisis, attitudes in the face of a crisis, attitudes, and practices after a crisis, teaching attitudes of the teacher, the stigmatization of the child with epilepsy).

Pretest

A pre-test comprising 20 teachers had preceded our actual data collection. Its objective was to assess the acceptability and feasibility of the study among teachers and, above all, to assess their interest in the study. This pretest showed that the teachers were very interested in the study, but the context was unfavorable (Covid 19 pandemic).

Procedure

Data collection was undertaken in a single pass per site. Once on the site, we introduced ourselves and explained the reasons for our visit and the objectives of our study to the staff of the education establishment. The forms were given to the teachers present at the time of our visit. Depending on their availability, the forms were completed immediately or entrusted to the establishment's director and subsequently sent to us.

Data analysis

Data collected were analyzed using Epi info software version 7.1.2 and SPSS in its English variant to enable analysis. The graphs were prepared by converting the

data to Excel version 2013 software. Statistical calculations were carried out using the chi-square test, and the p-value less than or equal to 0.05 was considered significant with a 95% confidence interval.

Assessment

A scoring system was developed for each question: each correct answer was given a score of 1 and 0 for the wrong answer. Total scores were categorized as either Good Knowledge or Poor Knowledge. We tested teachers' knowledge level with 8 questions (type of disease, social category of disease, clinical manifestations, causes, risk during an epilepsy crisis, the contagiousness of epilepsy, curability of epilepsy, and consequence of epilepsy on intellectual development). Teachers' overall level of knowledge was considered satisfactory if at least 50% of teachers had a mark greater than or equal to 5/8. We evaluated the attitudes and practices of teachers towards epilepsy with 4 interrogations (attitude in front of an epileptic seizure, attitudes after the crisis, teaching attitude of the teacher in the face of an epileptic seizure, epilepsy stigma). The overall level of teachers' attitudes and practices was judged when at least 50% of teachers had a score greater than or equal 3/4 for good responses to attitudes and practices.

RESULTS

Frequency

The survey included 222 school teachers from 15 schools, including seven primary schools and eight post-primary and secondary schools. The public sector teachers constituted 80% of teachers, and 20% were from the private sector. Two participants were excluded from the study because of incomplete information. Finally, two hundred and twenty schoolteachers were selected for the study, i.e., 85.3% of the desired sample.

Sociodemographic characteristics of participants

Our study included 125 (56.8%) men and 95 (43.2%) women. The mean age of the participants was 42 ± 8.64 years, ranging from 24 to 60 years. The group age of 40–49 years was the most representative (35%). The majority of schoolteachers (66.4%) had university-level education. Most schoolteachers had taught in post-primary school (35.4%). The majority of schoolteachers taught in public schools (205; 93.2%). Teachers with more than 20 years of professional service were the most represented, with 36% of the sample surveyed. The average

seniority was 15 years with extremes of 1 and 32 years. Table 1 highlights the sociodemographic characteristics of study participants.

Experience of epilepsy

According to their familiarity with epilepsy, 217 (98.6%) schoolteachers had heard of epilepsy. The main sources of epilepsy information were from relatives (47.27%), health personnel (18.18%), media (16.35%), colleagues (10%), and the internet (8.20%). One hundred and seventeen teachers (53.18%) stated they had already witnessed a seizure.

Knowledge of the participants towards epilepsy

According to the origins of epilepsy, 133 (60.5%) participants thought that epilepsy is a neurological disease, while 21 (9.2%) thought epilepsy is a psychiatric disorder. According to people at risk of developing epilepsy, the response of participants was anyone (80%), children (12.8%), and young adults (4.5%). Regarding the manifestations of generalized tonic-clonic seizure, most teachers cited convulsions (34.54%), loss of conscience (31.36%), and sudden fall (13.58%) of teachers. Regarding the causes of epilepsy, the majority of teachers had listed brain disease (65%) and genetic disorders (18.20%). According to teachers' opinions, epilepsy is a contagious disease (15%). Regarding the curability of epilepsy, 43.2% of teachers thought it was curable. Regarding the consequences of seizures, injuries (74.08%) and death (22.74%) were noted. About 45% of teachers thought that epilepsy was a curable disease. One hundred and fifty-six (70.9%) schoolteachers believed that students with epilepsy usually had associated mental retardation. Table 2 shows the distribution of schoolteachers according to their knowledge of various aspects of epilepsy. According to their level of knowledge, 167 (52.18%) schoolteachers had good knowledge of epilepsy and scored more than 50% of questions. The factor associated with teachers' knowledge was having witnessed an epileptic seizure ($p < 0.05$). Table 3 shows the factors related to the level of knowledge of epilepsy. Schoolteachers (18%) had good knowledge of epilepsy and scored more than 50% of the questions. The factor associated with teachers' knowledge was having witnessed an epileptic seizure ($p < 0.05$). One hundred and sixty seven (75.9%) schoolteachers had good knowledge of epilepsy and scored more than 50% of questions. The factor associated with the knowledge of teachers was having witnessed an epileptic seizure

Table 1. Sociodemographic characteristics of participant teachers (N = 220)

Variable	Study population (N = 220)	Percentage
Gender		
Male	125	56.8
Female	95	43.2
Age (years)		
< 30	16	7.3
30-39	72	32.7
40-49	77	35
50-59	50	22.7
≥60	5	2.3
Years of education		
6	3	1.4
10	58	26.4
13	13	5.8
>13	146	66.4
Level of teaching		
Secondary	73	33.2
Post-primary	78	35.4
Primary	69	31.4
Teaching in public or private schools		
Public	15	6.8
Private	205	93.2
Seniority (years)		
1-5	47	22
6-10	33	15
11-15	33	15
16-20	26	12
>20	81	36

($p = 0.000$). Table 3 shows the factors related to the level of knowledge of epilepsy of schoolteachers.

School life-related attitudes of teachers

According to teachers, 161 (73.20%) school teachers thought epilepsy was a stigmatizing disease. According to most teachers, students with epilepsy should benefit from personalized supervision (65%).

Attitudes during and after a convulsive seizure

About 40% of schoolteachers offered their first aid and by calling an ambulance. At the end of the seizure, the majority of school teachers said that they would notify the occurrence of the seizure to parents of children (53.2%). Table 4 shows the distribution of schoolteachers according to their attitude towards epilepsy (N = 220).

Level of attitudes and behavior

According to their level of attitudes and behaviors about epilepsy, 96 (30%) schoolteachers had a good level (score $\geq 50\%$). The factor associated with schoolteacher attitude and behaviors was gender ($p = 0.047$) and having already witnessed an epileptic seizure ($p = 0.003$). Table 5 highlights the factors associated with the level of practices of epilepsy.

DISCUSSION

This study focused on determining the level of knowledge, attitude, and practice towards epilepsy and identified associated factors that affect the teachers' knowledge, attitude, and practice towards epilepsy in Burkina Faso. This study showed that the majority of school teachers had a high level of familiarity with epilepsy. In-

Table 2. Distribution of school teachers according to their knowledge in various aspects of epilepsy

Variable	Study population (N = 220)	Percentage
Source of Information about Epilepsy		
Family and friends	104	47.27
Personal health	40	18.18
Media	33	16.35
Colleagues	22	10
Internet	18	8.20
Origin of the disease		
Neurological	174	79.1
Mental	21	9.5
Do not know	25	11.4
Social layer of the disease		
Every person	176	80.0
Children	28	12.8
Young adult	10	4.5
The elderly	4	1.8
Disadvantaged people	2	0.9
Clinical manifestations		
Violent convulsions	76	34.54
Loss of consciousness	69	31.36
Sudden fall	30	13.58
Behavior disorder	19	8.00
Agitation	16	7.28
Mental confusion	10	4.34
Do not know	2	0.9
Causes of epilepsy		
Brain pathologies	143	65
Hereditary	40	18.20
Alcoholism	3	1.36
Malformation	12	5.45
Supernatural	9	4.09
Do not know	13	5.90
Contagiousness		
		15
Risks by a crisis		
To hurt yourself	127	57.72
Pass away	50	22.74
Hurt other children	36	16.36
Do not know	7	3.18
Curability of epilepsy		43.2
Students can have intellectual disabilities	156	70.9

deed, almost all the teachers had already heard of epilepsy (98.6%), which was comparable to the data in the literature, which found a frequency between 91.5 and 100% (Thacker et al., 2008; Millogo et al., 2004; Assadeck et al., 2020; Goel et al., 2014; Elhassan et al., 2017; Oumer et al., 2020; Rambe et al., 2002). In addition, more than the majority of teachers (53.18%) had already

seen an epileptic seizure. The main sources of epilepsy information were from a relative (47.27%), health personnel (18.18%), and media (16.35%). The main sources of knowledge about the condition were media, the internet, and parents of students (Kaleyias et al., 2005; Birbeck et al., 2006; Mecarelli et al., 2010). This situation is different in developed countries, where 50%

Table 3. Factors associated to with the level of knowledge of epilepsy of schoolteachers

Variables	Low knowledge (n = 53)	Good knowledge (n = 167)	p value
Sex			
Man	7 (14.09)	112 (66.82)	0.778
Women	46 (85.91)	55 (33.18)	
Age (years)			
≤40	26 (49)	62 (37.1)	0.424
40	27 (51)	105 (62.9)	
Educational level			
<13 years	19 (35.8)	42 (25.2)	0.213
≥13 years	34 (64.2)	125 (74.8)	
Level of teaching			
Primary school	23 (43.4)	50 (29.9)	0.067
Secondary / high school	30 (56.6)	117 (70.1)	
Total years of teaching experiences			
≤15	31 (58.5)	82 (49.1)	0.775
>15	22 (41.5)	85 (50.9)	
Witness an epileptic seizure			
Yes	33 (62.3)	144 (86.2)	0.000
No	20 (37.7)	23 (13.8)	

of teachers obtained information on epilepsy through conversations with doctors, reading scientific reports, or participation in educational courses (Mecarelli et al., 2010). The level of witnessing seizures (53.18%) was similar to those observed in Italy (57.5%) (Mecarelli et al., 2010) but lower than those observed in Sudan (83.5%) (Elhassan et al., 2017), in Burkina Faso (90.8%) (Millogo et al., 2004), in Brazil (79%) (Fernandes et al., 2007), in Mali (84%) (Maiga et al., 2015) and Niger (100%) (Toudou-Daouda et al., 2020). Regarding their specific knowledge of epilepsy, the majority of teachers identified the brain as the organ responsible for epileptic seizures (79.1%). This result was higher than that observed in other studies in India (49%) (Goel et al., 2014) and Niger (42.1%) (Assadeck et al., 2020). According to teachers, all ages and all social categories could be affected by epilepsy (80%). Knowledge of these data allows teachers to transmit the right information to students and their parents. Almost the majority of teachers knew the main symptoms of the disease, such as seizure occurrence (34.54%), loss of conscience (31.36%), and sudden fall (13.58%). The symptom most known by teachers was unconsciousness. These symptoms differed from one author to another. According to Khanal et al. (2015), in Nepal, the main signs of epilep-

sy were unconsciousness (82.4%), foaming from the mouth (67.9%), and tongue bite (43.0%). Knowledge of the symptoms of the disease is a considerable asset allowing the recognition of epileptic seizures that may occur in children. The main cause of epilepsy listed by schoolteachers in our study was brain disease (65%). The situation was similar in Italy, where the majority of schoolteachers considered epilepsy as a hereditary disease (55%) and birth defect (54.2%) (Mecarelli et al., 2010). The level of the non-contagious nature of epilepsy (74%) was comparable to that of Indian authors (85%) (Thacker et al., 2008; Goel et al., 2014). The rate of teachers (15%) who considered epilepsy as a contagious disease was lower than that reported in Niger by Assadeck et al. (2020) (46.2%) and Maiga et al. (2015) in Mali (40%). These differences could be explained by several parameters such as the socio-cultural context, the religious beliefs of the population, and the education system. The majority (70.9%) of schoolteachers believed that students with epilepsy usually had associated mental retardation. This rate is comparable to that reported in Ethiopia (95%) (Gebrewold et al., 2016) but higher in those in Egypt (52.9%) (Shehata et al., 2010) and Niger (57.4%) (Toudou-Daouda and Mamadou, 2020). In Europa, this proportion is lower,

Table 4. Distribution of schoolteachers according to their attitudes and behavior towards epilepsy (N= 220)

Variable	Study population (N=220)	Percentage
Attitude during a seizure		
Call an ambulance	92	40
Secure, the area where the child is having a seizure	46	20.90
Prevent the child from moving	30	13.63
Position yhe child on his/her side	23	10.45
Remove the glasses	17	7.72
Put an object in the mouth	9	4.09
To watch	2	0.90
Attitudes after the crisis		
Notify parents	117	53.2
Bring the child to the hospital	45	20.5
Call the fire brigade	29	13.2
Do nothing	15	6.7
Notify the administration	7	3.2
Send the child away from school	7	3.2
Teaching attitude		
Classical teaching	77	25.5
Personalized teaching	143	65.0
Total Attitude Score		
Poor (<50%)	124	56.4
Good (≥50%)	96	43.6

Table 5. Distribution of school teachers according to their level of attitudes and behavior toward epilepsy

Variables	Level of attitude and practice		
	Low (n = 124)	Good (n = 96)	P value
Sex			
Man	66 (53.6%)	62 (64.2)	0.047
Women	58 (46.4%)	34 (35.8)	
Age (years)			
≤40	44 (36)	47 (49.29)	0.124
>40	80 (64)	49 (50.71)	
Educational status			
13	32 (26.2)	30 (31.31)	0.532
≥13	92 (73.8)	66 (68.69)	
Qualification			
primary	38 (30.8)	35 (36.4)	0.247
post primary and secondary	86 (69.2)	61 (63.6)	
Seniority (years)			
≤ 15	41 (33.18)	12 (12.27)	0.091
> 15	83 (66.82)	84 (87.73)	
Witness an epileptic seizure			
Yes	112 (90.0)	87 (90.49)	0,003
No	12 (10.0)	9 (9.51)	

with 20% and 33.2% of schoolteachers who considered that epilepsy could affect children's behavior and learning ability (Mecarelli et al., 2010; Iannone et al., 2021). The percentage of teachers in our study who believed epilepsy is curable (43.2%) was in the same proportion as in a study from Italy (40.6%) (Mecarelli et al., 2010) but lower than those observed in the study of Goel et al. (2014) (83%) and the study of Toudou-Daouda and Mamadou (2020) (85%) and (79.3%) (Assadeck et al., 2020). Socio-cultural factors could explain this situation. Few studies evaluated the level of knowledge of school teachers. The level of knowledge of epilepsy is high (75.9%) in comparison to those reported by several studies (51.9–59.8%) (Oumer et al., 2020; Zeleke et al., 2018; Elgarawany et al., 2009; Karimi et al., 2015). In practice, 50% of teachers said their knowledge of epilepsy was inadequate (Mott et al., 2013). In our study, witnessing an epileptic seizure would positively influence the knowledge of schoolteachers. Several other factors have been identified in the literature. Thus Oumer et al. (2020) in Ethiopia found that knowing a person living with epilepsy, having a family history of epilepsy, and having benefited a previous first aid training were factors associated with the knowledge level of epilepsy. In the United States, Bishop and Slevin (2004) found that longer teaching experience was correlated with a better knowledge of epilepsy. These differences could be related to the methodology used. The majority of schoolteachers (57.71%) had an inadequate attitude regarding the first aid provision for the student with seizure doing nothing (40%), by preventing the person from moving (13.63%), and by putting objects in the mouth (4.09 %). The majority of schoolteachers should place an object in the patient's mouth (Mecarelli et al., 2010). In contrast, Oumer et al. (2020) in Ethiopia found that most schoolteachers (55.3%) had adequate attitudes regarding first aid management.

Our result could be explained by the fact that almost all schoolteachers did not receive any training in first aid management. According to Al-Hashemi et al. (2016), few schoolteachers (8.5%) had sufficient training in first-aid management of seizures in Kuwait. At the end of the seizures, 33.7% of teachers planned to alert the help or bring the student to the hospital, rather a good attitude. According to Italian studies, the majority of schoolteachers would invariably call an ambulance (Mecarelli et al., 2010; Iannone et al., 2021). In the majority of cases (56.4%), teachers planned to notify the administrator or shareholders. This situation is

comparable to the one presented by the Toudou-Daouda and Mamadou (2020) study, in which 57% of teachers planned to refer the student to the school. Notifying the school administration would allow teachers to have reliable information on the child's state of health to direct parents to structures for the care of epilepsy. A few teachers (3.2%) planned to exclude the student from school until the seizures altogether ceased. This attitude could be beneficial in the event of a single seizure but could also lead to longer schooling and stigmatization of the pupil in the event of repeated seizures. According to school life attitudes, the majority of teachers recommended personalized education to epileptic students (65.0%). This attitude is not unique for teachers in developing countries. In Italian studies, 36.4% and 55.8% of teachers believed that students with epilepsy require personal assistance at school (Mecarelli et al., 2010; Iannone et al., 2021).

In contrast, Toudou-Daouda, and Mamadou (2020) in Niger found that 79.2% of schoolteachers think that students with epilepsy should not be placed in an adapted class. Several studies promote the treatment of epileptic students as any other student to enhance their confidence (Fernandes et al., 2011). However, children with epilepsy suffering from intellectual deficiencies are taken care of in specialized schools. Unlike European countries, our education system does not have many specialized schools that can care for epileptic students with specific physical and intellectual disabilities. Regarding school life-related attitudes of teachers and attitudes during and after a convulsive seizure, gender of a schoolteacher and having already witnessed an epileptic seizure were associated with good practice towards epilepsy. In the study of Mecarelli et al. (2014), direct experience with seizures, a larger number of students with epilepsy, witnessing an epileptic seizure, and participation in scientific meetings were all correlated with better knowledge of the correct management of an epileptic seizure, with some exceptions. Oumer et al. (2020) in Ethiopia found that previous first-aid training was a significant factor correlated with the attitude level of epilepsy. These differences would be related to methodological problems.

Strengths and limits of the study

This study concerned the country's three main levels of education, namely primary, post-primary, and secondary. However, the study had several limitations. The total number of expected participants was not contained

with Covid 19 look down (closure of schools, reduction of teachers' manner). In addition, it is necessary to add the reactance, the lack of motivation of some teachers to take part in the study, and the high workload of teachers who did not meet all questions.

CONCLUSION

At the time of the investigations, the school teachers in Ouagadougou had a relatively low level of awareness and understanding of certain aspects of epilepsy. A minority of the study population demonstrated unfair discriminatory behavior toward children with epilepsy.

CONFLICTS OF INTERESTS

The authors do not report any conflict of interest.

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