Original Research Article

Assessing the readiness of the health district system facing epilepsy: health workers knowledge and health system support for epilepsy case management in the Region of Hauts Bassins, Burkina Faso

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Like all non-communicable-diseases in low-income-countries, epilepsy is insufficiently taken into account by health-services. This research aimed to study the knowledge (and related factors) and experiences of health workers regarding epilepsy-management in health-districts from Region of Hauts Bassins (Burkina Faso). Cross-sectional study was conducted from June to September 2015. Health-workers (nurses, care-providers from district-teams and ward supervisors of district-hospitals) were interviewed. Knowledge-score on epilepsy was calculated based on 34 questions, using the median as the threshold. Factors associated (socio-demographic, experiences and organization of services) with good epilepsy-knowledge score were identified by logistic-regressions using SPSS 20.0 software. About 214 health-workers were included. Mean-age of respondents was 36.8 (± 6.2) years; 92.5% were male. Mean epilepsy-knowledge score was 20.5 (95%CI: 20.0-20.9); and 38.8% of respondents had less than the mean epilepsy-knowledge score. Factors influencing the good epilepsy-knowledge score included duration as health worker (p=0.025), having already taken care of an epileptic-seizure (p=0.024), having already sensitized population on epilepsy (p=0.028), and having already prescribed anti-epileptics drugs (p=0.007). Regarding organization and management of health-services for epilepsy cases, our study shows that health-workers were underinformed, untrained and unprepared for epilepsy case management. Health-care services environment was not supportive and not enabled. It is crucial to strengthen the capacity of health-workers and to improve the health facility environment to become friendly with epilepsy-management.

Key words: Non-communicable disease, health system, epilepsy, knowledge score, Burkina Faso.

Abbreviations

AEDs: Anti-epilepsy drugs
CI: Confident interval
HICs: High income countries
LMICs: Low- and middle-income countries
LMICs: Low income countries
NCD (s): Non communicable (s) disease (s)
NGO (s): Nongovernmental organization (s)
NEP: National epilepsy program
PHC: Peripheral health centres
NDTG: national diagnosis and treatment guideline
PWE: Persons with epilepsy

WHO: World health organization
INTRODUCTION

Non-communicable diseases (NCDs) kill 40 million people each year, equivalent to 70% of all deaths globally (WHO, 2017a) which make it the top subject of the public health agenda in the world, in front of communicable diseases. The burden of these NCDs is rising disproportionately among lower income countries and populations (WHO, 2017b). In this way, NCDs threaten progress towards the 2030 Agenda for Sustainable Development, which includes a target of reducing premature deaths from NCDs by one-third by 2030 (WHO, 2017b).

While NCDs are mainly due to cardiovascular diseases followed by cancers, respiratory diseases, and diabetes (WHO, 2017a), there is also a need to respond to the significant burden of mental, neurological and substance use disorders. Indeed amongst these, epilepsy is one of the most frequent neurological diseases in the world, affecting about 50 million people, a real public health problem in developing countries (WHO, 2017c), where its incidence is nearly twice higher than in developed countries (113 - 119 per 100,000 inhabitants per year compared with 69 per 100,000 inhabitants) (Lavados et al., 1992). Its severity is related to its mortality which is two to three times higher that of the general population, added to its invalidating nature since the rate of recidivism is estimated at 71% within three years after a first crisis (Grunitzky et al., 1991; Hauser et al., 1993) and its social burden such as psychological problems, including depression and anxiety, and psychosis (Robb, 1981).

Several studies focused on epilepsy but more on its definition (Loiseau and Jallon, 1990; Chang and Lowenstein, 2003; Fisher et al., 2014), its epidemiology (Robb, 1981; Grunitzky et al., 1991; Lavados et al., 1992; Hauser et al., 1993; Izurieta and Cruz, 1993; Nyame and Biritwum, 1997; Jallon, 2001; Nubukpo et al., 2001; Browne, 2010), its causes (Debouverie et al., 1993; Izurieta and Cruz, 1993; Kaboré, 1995, 1999; Chilopora et al., 2001; Jallon, 2001; Nubukpo, 2001) and its clinical aspects (Debouverie et al., 1993; Kaboré, 1995). These studies have targeted teachers (Kankirawatana, 1999; Birbeck et al., 2006; Akhtar et al., 2007; Thacker et al., 2008; Gebrewol et al., 2016), somewhere community (Thiane and Hadi, 2004; Jalle and Zewdu, 2015; Henok and Laramo, 2017) and concerned health care workers (Chomba et al., 2007; Harimanana et al., 2013) and health service organization. Knowing that early identification of epilepsy can have a big impact in terms of effective treatment and management, the present study assesses the readiness of the district health system facing epilepsy. We accessed the knowledge of the health workers and the support of the health system for epilepsy case management in the Region of Hauts Bassins, Burkina Faso.

MATERIALS AND METHODS

Burkina Faso is located in West Africa. The country has no National epilepsy program (NEP). The study setting was the Region of Hauts Bassins, located in the West of the country. The region has eight (08) health districts of which N'Dorola Health District was not yet operational in 2015. Health peripheral centers, district hospitals and clinical district health team were included in the present study.

We realized a cross-sectional study using direct individual interviews. The questionnaire was administered from June 2 to September 11, 2015. We included 214 health workers among 253 available in the district distributed as follow: 171 head-nurses of health units, 24 members of the district management team and 19 district health unit supervisors. A questionnaire with 34 questions related to epilepsy was used.

For the analysis, a knowledge score on the epilepsy was calculated based on the 34 questions where correct answer was one (01) point and false question was zero (0) point giving a range from zero (0) to thirty-four (34) points. We used the median as threshold. Factors (socio-demographic and health professional experiences) associated with good knowledge score on epilepsy were identified through univariate and multivariate logistic regression (Model = Entry) using SPSS 20.0 software, ld.

RESULTS

A total of 214 respondents were included in the study. Their mean age was 36.8 (± 6.2) years old; and 92.5% of the participants were male. Epilepsy knowledge score varied between 10 and 29 with an average score at 20.5 (95% CI: 20.0 - 20.9), and 38.8% of respondents scored less than the median (median = 21).

Table 1 and 2 shows the result of the univariate analysis. The study showed that respondents were underinformed, untrained and unprepared for epilepsy case management:

- 17.3% of the participants had already asked colleagues to sensitize the population on epilepsy,
- 96.7% of the participants had never seen an epileptic seizure,
- 96.7% of the participants had more than one year elapsed since last training on epilepsy,
- 93.9% of the participants received their last training about epilepsy from health school,
- 31.3% of respondents said that they saw a section related to epilepsy in the national diagnosis and treatment guideline,
- 14.6% of the participants declared being lastly supervised more than six months,
- 90.2% of the participants said never been supervised about epilepsy-related issues,
- and 26.6% of the participants said never prescribed anti-epileptics to patients.

Only factors like seniority in health facility (p = 0.015), having already taken in charge of an epileptic seizure experience (p = 0.012), having once sensitized population about epilepsy (p = 0.012) and have already prescribed anti-epileptics (p <0.0001) were significantly associated
Table 1. Socio-demographic and health professional experiences data by knowledge score on epilepsy from the health districts in the Region of Hauts Bassins, Burkina Faso

<table>
<thead>
<tr>
<th>Variables</th>
<th>Modality</th>
<th>Knowledge score on epilepsy</th>
<th>Total n (%)</th>
<th>Chi square or t test</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Superior to 21 n (%)</td>
<td>Inferior or equal to 21 n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>79 (95.2)</td>
<td>119 (90.8)</td>
<td>198 (92.5)</td>
<td>0.828</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4 (4.8)</td>
<td>12 (9.2)</td>
<td>16 (7.5)</td>
<td></td>
</tr>
<tr>
<td>School level</td>
<td>≥ High school</td>
<td>77 (92.8)</td>
<td>112 (85.5)</td>
<td>189 (88.3)</td>
<td>2.764</td>
</tr>
<tr>
<td></td>
<td>&lt; High School</td>
<td>6 (7.2)</td>
<td>19 (14.5)</td>
<td>25 (11.7)</td>
<td></td>
</tr>
<tr>
<td>Age (years-old)</td>
<td>Mean ± standard deviation</td>
<td>36.8 ± 6.2</td>
<td>37.70 ± 6.1</td>
<td>37.34 ± 0.4</td>
<td>-1.079</td>
</tr>
<tr>
<td>Total service duration</td>
<td>Mean ± standard deviation</td>
<td>10.40±6.8</td>
<td>11.28±6.4</td>
<td>10.64±0.5</td>
<td>-0.966</td>
</tr>
<tr>
<td>Duration in the health facility</td>
<td>Mean ± standard deviation</td>
<td>3.01±2.4</td>
<td>4.18±3.7</td>
<td>3.72±0.2</td>
<td>-2.785</td>
</tr>
<tr>
<td>Type of health facility</td>
<td>District hospital</td>
<td>18 (21.7)</td>
<td>26 (19.8)</td>
<td>44 (20.6)</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>Peripheral health centre</td>
<td>65 (78.3)</td>
<td>105 (80.2)</td>
<td>170 (79.4)</td>
<td></td>
</tr>
<tr>
<td>Working in dispensary (nurse curative care) or not</td>
<td>In dispensary</td>
<td>63 (75.9)</td>
<td>100 (76.3)</td>
<td>163 (76.2)</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>Not in dispensary</td>
<td>20 (24.1)</td>
<td>31 (23.7)</td>
<td>51 (23.8)</td>
<td></td>
</tr>
<tr>
<td>Setting of health district</td>
<td>Rural</td>
<td>59 (71.1)</td>
<td>92 (70.2)</td>
<td>151 (70.6)</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>24 (28.9)</td>
<td>39 (29.8)</td>
<td>63 (29.4)</td>
<td></td>
</tr>
<tr>
<td>Setting with or without medical staff</td>
<td>With medical staff</td>
<td>19 (22.9)</td>
<td>27 (20.6)</td>
<td>46 (21.5)</td>
<td>0.051</td>
</tr>
<tr>
<td></td>
<td>Without medical staff</td>
<td>64 (77.1)</td>
<td>104 (79.4)</td>
<td>168 (78.5)</td>
<td></td>
</tr>
<tr>
<td>Having already taken in charge an epileptic seizure</td>
<td>No</td>
<td>13 (15.7)</td>
<td>41 (31.3)</td>
<td>54 (25.2)</td>
<td>5.781</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>70 (84.3)</td>
<td>90 (68.7)</td>
<td>160 (74.8)</td>
<td></td>
</tr>
<tr>
<td>Having already seen an epileptic seizure</td>
<td>No</td>
<td>3 (3.6)</td>
<td>4 (3.1)</td>
<td>7 (3.3)</td>
<td>0.051</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>80 (96.4)</td>
<td>127 (96.9)</td>
<td>207 (96.7)</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

The main results of this study show that the epilepsy knowledge is weak. Only 61% of health workers had a good epilepsy knowledge score. Besides, having already taken in charge of an epileptic seizure, being senior in the health facility, having sensitized the population about epilepsy at least once, and having already prescribed anti-epileptics are all factors associated with a good epilepsy knowledge score.

It found that the evidence for most aspects of an adequate management of epilepsy is weak in both high and low-income settings. In high-income countries (HICs), misdiagnosis occurs in 5%-30% of cases, and in low and middle-income countries (LMICs) this is likely to be higher (Chowdhury et al., 2008). Some studies noted that in low-income countries (LICs), epilepsy was under-resourced and undertreated because of the failure to identify cases, difficulties with infrastructure, and the unavailability of suitable anti-epilepsy drugs (AEDs). In the present study, the respondents were underinformed, untrained and unprepared for epilepsy case management. Harimanana et al. 2013 showed a lack of knowledge in diagnosing and prescribing drugs for epilepsy, including phenobarbital, the first-line of treatment, the unawareness of the availability of antiepileptic drugs in health facilities in the Lao PDR.

Studies showed that the need to recognize burden...
Table 2. Description of variables (having epilepsy experience) by knowledge score on epilepsy

<table>
<thead>
<tr>
<th>Variables</th>
<th>Knowledge score on epilepsy</th>
<th>Chi square</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Superior to 21 n (%) Inferior or equal to 21 n (%) Total n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Having once sensitized population about epilepsy</td>
<td>Never</td>
<td>36 (43.4)</td>
<td>35 (26.7)</td>
</tr>
<tr>
<td></td>
<td>At least one time</td>
<td>47 (56.6)</td>
<td>96 (73.3)</td>
</tr>
<tr>
<td>2. Having already asked colleagues to sensitize population on epilepsy</td>
<td>Never</td>
<td>19 (22.9)</td>
<td>18 (13.7)</td>
</tr>
<tr>
<td></td>
<td>At least one time</td>
<td>64 (77.1)</td>
<td>113 (86.3)</td>
</tr>
<tr>
<td>3. Time made for lastly training about epilepsy</td>
<td>≥One year</td>
<td>80 (96.4)</td>
<td>127 (96.9)</td>
</tr>
<tr>
<td></td>
<td>&lt;One year</td>
<td>3 (3.6)</td>
<td>4 (3.1)</td>
</tr>
<tr>
<td>4. Place where having received last training about epilepsy</td>
<td>Basic training (school or university)</td>
<td>80 (96.4%)</td>
<td>121 (92.4%)</td>
</tr>
<tr>
<td></td>
<td>During professional position</td>
<td>1 (1.2%)</td>
<td>5 (3.8%)</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>2 (2.4%)</td>
<td>5 (3.8%)</td>
</tr>
<tr>
<td>5. Section related to epilepsy in the national diagnosis and treatment guideline (NDTG)</td>
<td>Yes</td>
<td>24 (28.9%)</td>
<td>43 (32.8%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>59 (71.1%)</td>
<td>88 (67.2%)</td>
</tr>
<tr>
<td>6. Having once received training about epilepsy in your workplace</td>
<td>Yes</td>
<td>80 (96.4%)</td>
<td>121 (92.4%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>3 (3.6%)</td>
<td>10 (7.6%)</td>
</tr>
<tr>
<td>7. Having once displaced pictures in your office related to epilepsy</td>
<td>Yes</td>
<td>80 (96.4%)</td>
<td>127 (96.9%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>3 (3.6%)</td>
<td>4 (3.1%)</td>
</tr>
<tr>
<td>8. Time having been lastly supervised</td>
<td>≥Six months</td>
<td>34 (41.0%)</td>
<td>55 (42.8%)</td>
</tr>
<tr>
<td></td>
<td>&lt;Six months</td>
<td>49 (59.0%)</td>
<td>76 (58.2%)</td>
</tr>
<tr>
<td>9. Having been supervised on epilepsy-related issues</td>
<td>At least one</td>
<td>9 (10.8%)</td>
<td>12 (9.2%)</td>
</tr>
<tr>
<td></td>
<td>Never prescribed</td>
<td>74 (89.2%)</td>
<td>119 (90.8%)</td>
</tr>
<tr>
<td>10. Having prescribed anti-epileptics to patients and the patients not been satisfied with the prescription</td>
<td>Never prescribed</td>
<td>12 (14.5%)</td>
<td>45 (34.4%)</td>
</tr>
<tr>
<td></td>
<td>Prescribed but patient rarely satisfied</td>
<td>3 (3.6%)</td>
<td>5 (3.8%)</td>
</tr>
<tr>
<td></td>
<td>Prescribed but patient sometimes satisfied</td>
<td>14 (16.9%)</td>
<td>29 (22.1%)</td>
</tr>
<tr>
<td></td>
<td>Prescribed but patient often satisfied</td>
<td>54 (65.1%)</td>
<td>52 (39.7%)</td>
</tr>
</tbody>
</table>

Increasing care giver’s knowledge of epilepsy will be an excellent opportunity to improve care supply. As mentioned by (Roberto and Natalio, 2015), in resource-limited countries, up to 90% of PWE receive no treatment at all. They noticed that the need for National epilepsy programs to organize comprehensive care and cover educational, economic and research aspects is necessary. That includes a referral network to enable local healthcare workers to consult patients with more complex diseases and may ensure the routine availability of inexpensive...
Table 3. Factors of good knowledge score on epilepsy by univariate and multivariate regression analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Univariate model</th>
<th></th>
<th>Multivariate model</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted OR (95%CI)</td>
<td>p</td>
<td>Adjusted OR (95%CI)</td>
<td>p</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>0.502 (0.156-1.613)</td>
<td>0.247</td>
<td>1.138 (1.026-1.067)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0.977 (0.513-1.860)</td>
<td>0.942</td>
<td>1.132 (1.016-1.262)</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Age (years-old)</td>
<td>1.026 (0.980-1.074)</td>
<td>0.281</td>
<td>1.022 (0.978-1.067)</td>
<td>0.334</td>
</tr>
<tr>
<td>Total service duration</td>
<td>1.022 (0.978-1.067)</td>
<td>0.334</td>
<td></td>
<td></td>
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<tr>
<td>Seniority in the health facility</td>
<td></td>
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<tr>
<td>Working in dispensary (nurse curative care) or not</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In dispensary</td>
<td></td>
<td>0.942</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School level</td>
<td>≥Terminal class</td>
<td>0.459 (0.175-1.203)</td>
<td>0.113</td>
<td>0.982 (0.388-2.483)</td>
</tr>
<tr>
<td></td>
<td>&lt;Terminal class</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Having already taken in charge an epileptic seizure</td>
<td>No</td>
<td>2.453 (1.221-4.928)</td>
<td>0.012</td>
<td>2.257 (1.113-4.576)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>1</td>
<td></td>
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<tr>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Having already seen an epileptic seizure</td>
<td>Yes</td>
<td>0.840 (0.183-3.851)</td>
<td>0.822</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Having once sensitized population about epilepsy</td>
<td>Never</td>
<td>0.476 (0.266-0.851)</td>
<td>0.012</td>
<td>0.515 (0.285-0.930)</td>
</tr>
<tr>
<td></td>
<td>At least one</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having already asked colleagues to sensitize population on epilepsy</td>
<td>Never</td>
<td>0.537 (0.263-1.096)</td>
<td>0.087</td>
<td>0.982 (0.388-2.483)</td>
</tr>
<tr>
<td></td>
<td>At least once</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Setting with or without medical staff</td>
<td>With</td>
<td>0.874 (0.450-1.699)</td>
<td>0.692</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Without</td>
<td>1</td>
<td></td>
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</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting of health district</td>
<td>Rural</td>
<td>1.243 (0.695-2.220)</td>
<td>0.463</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of health facility</td>
<td>Peripheral health centre</td>
<td>1</td>
<td>0.746</td>
<td></td>
</tr>
<tr>
<td></td>
<td>District hospital</td>
<td>0.894 (0.455-1.758)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time made for last training about epilepsy</td>
<td>≥One year</td>
<td>1.191 (0.260-5.459)</td>
<td>0.822</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;One year</td>
<td>1</td>
<td></td>
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<tr>
<td>Time having been lastly supervised</td>
<td>≥Six months</td>
<td>1.043 (0.597-1.923)</td>
<td>0.883</td>
<td></td>
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<tr>
<td></td>
<td>&lt;Six months</td>
<td>1</td>
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<tr>
<td>Having once displaced pictures in your office related to epilepsy</td>
<td>Yes</td>
<td>1.191 (0.260-5.459)</td>
<td>0.822</td>
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<tr>
<td></td>
<td>No</td>
<td>1</td>
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<tr>
<td>Having been supervised on epilepsy-related issues</td>
<td>At least one</td>
<td>0.89 (0.333-2.063)</td>
<td>0.687</td>
<td></td>
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<tr>
<td></td>
<td>Never</td>
<td>1</td>
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<td>Having prescribed anti-epileptic treatments to patients and the patients not been satisfied with the prescription</td>
<td>Others</td>
<td>3.814 (1.854-8.178)</td>
<td>&lt;0.0001</td>
<td>3.288 (1.385-7.802)</td>
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<td></td>
<td>Never</td>
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<tr>
<td></td>
<td>Prescribed but patient rarely satisfied</td>
<td>1.731 (0.394-7.612)</td>
<td>0.468</td>
<td></td>
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<tr>
<td></td>
<td>Others</td>
<td>1</td>
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<tr>
<td></td>
<td>Prescribed but patient sometimes satisfied</td>
<td>2.151 (1.023-4.522)</td>
<td>0.043</td>
<td>2.077 (0.969-4.452)</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>1</td>
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</table>

AEDs. As well, they mentioned that adequately identifying people with epilepsy and delivering cost-effective care in resource-limited countries is an essential challenge for epileptologists and healthcare policy makers alike. In this vision, comprehensive and integrated action at country level, led by governments, is the mean to achieve success. Like in the present study, many respondents said that no supervision had addressed the topic of epilepsy. Detection, screening and treatment of NCDs, as well as palliative care, including effective oversight of health workers, are critical components of the response to NCDs. A study has already suggested a need to strengthen the training of primary health care workers in Tanzania about the detection of depression, pharmacological and psychological treatments, and psychosocial interventions (Mbatia et al., 2009). A study revealed a high personal fulfillment of the trained Peripheral health centers (PHC) workers in mental health service delivery. There is need for re-training of the PHC workers towards effective service delivery (Timothy et al., 2017). Considering the Global action plan for the prevention and control of NCDs 2013-2020 developed by the World health organization (WHO), will give more
significant impact on global NCD mortality, by preventing and well managing NCDs cases (WHO 2017a).

Conclusion

This study showed that the evidence for most aspects of the management of epilepsy is weak in low-income settings. Strengthening the capacity of health workers and the improvement of the health facility environment is essential to become friendly with epilepsy management in the Health Region of Hauts Bassins in Burkina Faso.

Limitations

The used data were based on one health region. Therefore, the data reported in the present study cannot be generalized because of its limits about the sampling methods. The type of study, based on a cross-sectional one, limits its temporal inferences.

Declarations

Ethics approval and consent to participate

With the administrative authorization of the Hauts Basins Regional Directorate for Health, Burkina Faso, all participants gave written consent for the study.

Consent to publish

Not applicable

Availability of data and materials

Data set used for this report can be availed by the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

Not applicable.

Authors’ contributions

M-ZC conceived the study and the first draft of the manuscript. T-YY, S-S, C-M, K-I, H-L, N-O, B-G, T-B, S-L, TI, SL helped to write and to review the first draft of the manuscript. And S-I, S-GBL, HH, T-SE, M-A worked on the final version of the document. All authors read and approved the final manuscript.

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REFERENCES


