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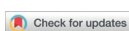


EPILEPSY AND PAROXYSMAL CONDITIONS

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Indigenous practices for management of epilepsy by traditional healers in South Africa

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SUMMARY

Objective: to determine the indigenous practices that are used to manage epilepsy in South Africa rural communities.

Material and methods. A qualitative, ethnographic technique that was exploratory and descriptive was used. Purposive and snowball sampling were used to select a group of 17 traditional healers for in-depth interviews at their homes. The data were analysed through the open coding data analysis method.

Results. The traditional healers had different perspectives on the origins and treatment plans of epilepsy based on their knowledge of the disease and their training. They used plants and alternative measures, even though western medicine was still used. The traditional healers' status in rural communities was acceptable and their treatment modalities were preferred.

Conclusion. Traditional healers and primary health care providers must work collaboratively to educate communities on the importance of integrating biomedicine and indigenous practices, as traditional healers had strong inspirations from the communities.

KEYWORDS

Epilepsy, management, indigenous practices, traditional healers.

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Authors' contribution

Chabangu Q. – conceptualization, data collection, analysis, text writing (under supervision);
Maputle M.S. (supervisor) – literature search, data analysis, drafting and revising of the article;
Lebesse R.T. (co-supervisor) – literature search, data analysis, drafting and revising of the article;
Makhado L. (project leader) – literature search, data analysis, drafting and revising of the article

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Традиционные целительские практики лечения эпилепсии в Южной Африке

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РЕЗЮМЕ

Цель: определить методы, которые используются местными традиционными целителями для лечения эпилепсии в Южной Африке.

Материал и методы. Использован качественный этнографический метод, который носил исследовательский и описательный характер. С помощью методов целевой выборки и выборки по принципу снежного кома была сформирована группа из 17 традиционных целителей, с которыми проведены углубленные интервью у них дома. При обработке данных применяли метод анализа с открытым кодированием.

Результаты. У традиционных целителей разные взгляды на происхождение и схемы лечения эпилепсии, основанные на их знаниях об этой болезни и уровне их подготовки. Они применяют растительные средства и другие альтернативные методы терапии, хотя западная медицина все же используется. В сельских общинах статус традиционных целителей является приемлемым, и жители предпочитают их методы лечения.

Заключение. Традиционные целители и поставщики первичной медико-санитарной помощи должны работать сообща, чтобы информировать население общин о важности интеграции биомедицины и местных практик, поскольку целители пользуются сильной поддержкой коренных жителей.

КЛЮЧЕВЫЕ СЛОВА

Эпилепсия, лечение, местные целительские практики, традиционные целители.

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Авторы заявляют, что у них не было никаких финансовых или личных отношений, которые могли бы ненадлежащим образом повлиять на них при написании данной статьи.

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INTRODUCTION / ВВЕДЕНИЕ

Epilepsy is a brain illness marked by a recurring and unpredictable interruption of normal function known as an epileptic seizure [1]. In the South African study by Z.A. Gilani et al. [2], 2341 adults were screened, and the prevalence of epilepsy was found to be 13.8/1000, with only 14.7% taking any regular anti-epileptic treatment. To be diagnosed as epileptic, a person must have two or more unprovoked seizures before the assessment.

The Epilepsy Foundation [1], on the other hand, claims that epilepsy causes the brain to produce aberrant messages, which results in seizures, which can occur because of illness or a head injury. Epilepsy is not regarded as a congenital condition in this traditional group, and people with epilepsy are viewed as people who practice magic or witchcraft in their communities. The belief of epilepsy in Central America differs from that of other African cultures [3]. Mexico is a very traditional Central American society, and their religion has not yet been touched by western culture. Although there is no cure for this illness, it can be helped by utilising a combination of herbs [3]. Epilepsy is also viewed to be

witchcraft in Spain, it is perceived to enter through the nose and head as a wing and lodges in the bones and muscles. It can be managed by eating wing-ants, pigeons, and butterflies that arrive on rainy days [3]. While in Brazil, all issues affecting the neurological system, including epilepsy, are claimed to be caused by the spirit of an animal slain by a hunter, no one in this origin hunts animals. However, this ailment can be managed using two plants dissolved in water [3]. The managing and treatment of epilepsy were greatly influenced by traditional healers' knowledge, cultural attitudes, and beliefs, and these were widely varied [2].

In the study of the effects of herbal medicine on epilepsy, F.J. Carod-Artal and C.B. Vázquez-Cabrera [4] found that herbal medical traditions are used in China, Iran, Europe, and America. Even though herbal medications are radically different, the quality of epilepsy herbs in traditional Chinese herbal medicine is unrivalled in herbalism. Conventional medicine is widely acknowledged and widely utilised as an anti-epileptic treatment; there is a lack of proof for its efficacy and toxicity [4]. When people in Africa are not feeling well, it's estimated that 80 percent of the population consults traditional healers [5]. Mpumalanga and Limpopo are

rural provinces in South Africa where traditional indigenous methods are used as part of epilepsy treatment. Most epilepsy patients rely on cultural traditions to manage their disease [6].

Traditional healer is a person recognised in the community (trained or not) in which they live as capable of rendering health care using herbs, animals, and several other methods based on social, cultural, and religious background [6]. This study explored traditional healers' indigenous practices in determining causes, diagnosing, and managing epilepsy in rural communities. Communities in these rural areas are poor and unable to pay for their medical bills.

The public health system is unacceptable and inaccessible to satisfy all the health needs of persons with epilepsy [7]. For the past years, the public health system has deteriorated, and the lack of a robust biomedical system has necessitated the development of traditional epilepsy therapy. The use of indigenous plants and alternative measures for medical reasons has a long history in South Africa. According to B.M. Mayosi and S.R. Benatar [8], traditional medication is still the most economical and accessible management source for the poor in South Africa primary health care system. The authors [8] observed that indigenous practices are not adequately documented, and the plants and other alternative measures used to manage epilepsy are not shown. This study explored plants and other alternative measures used for epilepsy management by traditional healers.

Objective: to determine the indigenous practices that are used to manage epilepsy in South Africa rural communities.

MATERIAL AND METHODS / МАТЕРИАЛ И МЕТОДЫ

Researchers employed a descriptive and exploratory qualitative ethnographic research approach to answer the question: what practices do you use as a traditional healer to diagnose and manage epilepsy? This design was suitable for gathering data in a natural context because it enabled the researchers to gain information on the cultural context of the participants [9]. It also allowed participants to discuss their opinions securely and privately.

Population and sampling / Популяция и выборка

The study was conducted in the rural villages of Mpumalanga and Limpopo provinces to traditional healers aged 18 years and above. Those less than 18 years of age were excluded from the study. Thirty (30) traditional healers were practicing in the study setting. The sample size was 17 traditional healers who were purposefully recruited. Snowball sampling was used to enlist the help of study participants in locating more potential participants, mainly when access to the population was limited for researchers.

Ethical considerations / Этические аспекты

Ethical standards were ensured by obtaining the ethical clearance (Ref: SHS/20/PDC/45/2710), from the University

Venda Ethics Committee. Permission to access the villages was obtained from the Chiefs or Ward counselors. Participants signed consent forms to express their willingness to participate. Illiterate participants gave verbal informed consent. Participants were informed of their rights to withdraw from the study without penalty. Adherence to ethical principles of fairness, privacy, confidentiality, anonymity as well as participants' rights to voluntarily participate was ensured.

Data collection / Сбор данных

The semi-structured interview guide was created in English and was translated into the participants' language by the language practitioner. The voice recorder was used to capture the information from 17 traditional healers, which was the sample size for in-depth qualitative interviews [10]. The interviews were conducted at the participants' homes and lasted 30 to 45 minutes. The interview responses were convincing to address traditional healers' indigenous practices regarding epilepsy's origins, diagnosis, and management. All 17 traditional healers were given the opportunity to ask questions at the end of the interview. After each interview, field notes were written.

Data analysis / Анализ данных

The language practitioner transcribed the audio-recorded data from the interviews from the participants' native language to English. Themes relating to participants' explanations of the causes, diagnostic measures, and treatment and care were identified using thematic analysis. The themes and sub-themes were arranged in a table, categorized into appropriate meanings, and compared for similarities and differences. This study developed three themes, each having sub-themes.

Data presentation / Представление данных

Table 1 illustrates the themes and sub-themes reflecting traditional healers' practices of managing epilepsy.

Trustworthiness / Достоверность

As outlined in D.F. Polit and C.T. Beck [11], the criteria for ensuring trustworthiness were adhered to. The credibility was ensured through prolonged engagement. The researcher contacted the participant to make an appointment and to establish rapport before the actual visit for data collection. The researchers spent time with the participants during the interviews listening to and observing them. Participants were interviewed to the point at which there was data saturation. A member check was also conducted to validate the truth and to confirm the findings. The voice recorder was used to capture data to ensure credibility. Thick descriptions of the research methodology ensured the transferability. The recorded interviews were transcribed verbatim and the nonverbal cues (for example, silence/sigh, frowns, and lean back) were included in brackets of the transcripts to ensure authenticity.

Table 1. Themes and sub-themes reflecting traditional healers' indigenous practices of managing epilepsy**Таблица 1.** Темы и подтемы, отражающие практики традиционных целителей по лечению эпилепсии

Theme / Тема		Sub-theme / Подтема	
1	Participants' perception of the contributory causes of epilepsy / Представления участников о причинах эпилепсии	1.1	Physical and environmental factors / Физические факторы и факторы окружающей среды
		1.2	Traditional beliefs associated with the occurrence of seizure / Народные верования, связанные с возникновением приступа
2	Participants' description of how they diagnose a person with epilepsy / Описание участниками процесса диагностики эпилепсии	2.1	Observation of occurrence of epileptic seizures / Наблюдение за возникновением приступов
		2.2	Family history of epileptic condition / Семейный анамнез эпилептического состояния
3	Participants' descriptions of indigenous practices of managing the seizures / Описание участниками традиционных практик управления приступами	3.1	Use of alternative indigenous measures / Использование альтернативных традиционных методов
		3.2	Collaborative working with primary health care professionals / Совместная работа со специалистами первичной медико-санитарной помощи

RESULTS / РЕЗУЛЬТАТЫ

The demographic profiles of 17 traditional healers are presented in **Table 2**.

Theme 1. Participants' perception on the contributory causes of epilepsy / Тема 1. Представления участников о причинах эпилепсии

Sub-theme 1.1. Physical and environmental factors

Most traditional healers cited that sharing equipment such as plates, cups, mats, and sharing food at home with someone with epilepsy may result in one contracting the disease. Secondly, traditional healers claim that as they heal clients on the road, epilepsy is being left in that place where rituals were performed. Therefore, people passing by the rituals performed place can contract epilepsy if the road is used. The following quotes depict how the traditional healers consider contagiousness as one of the causes of epilepsy:

"Epilepsy can be caused by using same cup and plates that epileptic client uses" (P12. Male, 45).

"Many things can cause epilepsy, firstly staying on a large mat (ecansini) of a person with epilepsy because it's contagious and eating food that was left by the person who has epilepsy" (P11. Female, 47).

"Some passed by a place where they once healed someone with epilepsy then they contract the disease because some remove foam in the mouth when the person fittet then throw it in the road and they know someone will pass get it" (P11. Female, 47).

Findings showed that healers believe that epilepsy is a condition that comes from generation to generation; one can inherit the disease from the family or great-grandparent. It is a condition that is within the family and cannot be treated. Participants show that epilepsy can be passed from mother to offspring during pregnancy and birth, which means that the child can have epilepsy transmission from the mother:

"Can be hereditary from one generation to another" (P12. Female, 45).

"So with epilepsy, it also depends on whether the person who gave birth to the patient also has epilepsy. If one has epilepsy,

Table 2. Demographic profiles of participants (n=17)**Таблица 2.** Демографические характеристики участников (n=17)

Parameter / Параметр	Number of participants, n (%) / Число участников, n (%)
Age / Возраст	
24–35 years / 24–35 лет	1 (6)
36–46 years / 36–46 лет	6 (35)
47–56 years / 47–56 лет	3 (18)
57 years and above / 57 лет и старше	7 (41)
Gender / Пол	
female / женский	14 (82)
male / мужской	3 (18)
Marital status / Семейное положение	
single / холост (не замужем)	8 (47)
married / женат (замужем)	6 (35)
divorced / разведен(а)	1 (6)
widowed / вдовец (вдова)	2 (12)
Educational level / Образование	
primary / начальное	
secondary / среднее	14 (82)
Year started practicing / Год начала практики	3 (18)
2000–2005	5 (29)
2006–2010	3 (18)
2011–2017	4 (24)
2018–2022	2 (12)
no data / нет данных	3 (17)
Qualified traditional health practitioner / Наличие квалификации целителя	
yes / да	13 (76)
no / нет	3 (18)
not sure / неточно	1 (6)

one might give birth to a child who has epilepsy. It is just like other illnesses; epilepsy can be inherited" (P17. Male, 65).

"The illness just comes from nowhere, but to most people its hereditary. There are families with epilepsy; even if it runs and does this, you can't heal them" (P15. Male, 65).

Other participants stated that epilepsy was caused by substance abuse and cannot be treated traditionally:

"I advise the patient to seek treatment from hospital because the body is used to having drugs (triggered). Parents should check if their children are not using substances before consulting because it affects the brain, substance abuse causes epilepsy" (P17. Male, 65).

Traditional healers mentioned that if they find out that the substance triggered epilepsy, then patient is referred to the hospital for further management.

Sub-theme 1.2. Traditional beliefs associated with the occurrence of seizure

For this study participants believed that when someone is suffering from epilepsy, there is a snake in the stomach around the umbilical cord. It is thought that the snake rotates with the moon whereby, when the moon is full seizure occurs. This is evidence that the new or complete moon influences epilepsy. Participants cited the following quotes:

"As you know, that seizure comes when there is full moon; there is a snake around the umbilical rotate in the stomach. There is a snake in there when the snake looks down the person doesn't fall when the moon starts clocking like a watch the snake awaken and look up then it coughs out a form that comes out when fitting" (P12. Female, 45).

"I explain again that we must monitor because that thing (meaning seizures) comes when there is a full moon. I'd explain again that they must monitor and not just assume it's healed. I'd ask when the person has a seizure. Then I'd tell them to monitor then and they would come to me that it's true, there's nothing, I feel nothing. This will mean that the person is healed" (P12. Female, 45).

Traditional healers indicated that as they can see things of the spirit, they can identify whether the condition is caused by evil-doing of people or other reasons. Findings show that healers take the history of how epilepsy had started to determine the causes and management of epilepsy:

"Yes, because even in the past, epilepsy and mental illness were caused by evil people; as traditional healers, we can distinguish between epilepsy caused by evil people and one that evil people do not cause. We take history regarding substance abuse because it also causes epilepsy" (P17. Male, 65).

Theme 2. Participants' description of how they diagnose epilepsy / Тема 2. Описание участниками процесса диагностики эпилепсии

Sub-theme 2.1. Observation of occurrence of epileptic seizures

Participants reported to have witnessed clients with epilepsy falling and having body stiffness and have proved that even though the client was a child, they couldn't lift him because the

client was so stiff. Other participants diagnosed epilepsy by seeing the client rolling eyes change into red and complaining of a headache, then fall and sometimes vomit something that looks like a snake. Furthermore, the participant saw an epileptic client falling each month more than once, resulting in biting the teeth and excreting foam with the mouth. This is what was said by participants on how they diagnose epilepsy:

"The person will fall and become stiff; I was unable to pick him up although he was four years" (P1. Female, 57).

"A person with epilepsy would fall every month some fall twice, biting teeth, and excreting foam that's when we say this person has epilepsy" (P15. Male, 65).

"The person's eyes become red have a headache, falls and vomit something that looks like a snake" (P16. Male, 65).

Sub-theme 2.2. Family history of epileptic condition

Traditional healers indicated they use family history to diagnose epilepsy. The following quotations were cited:

"The child had a seizure when he was four, now he is 22 years. They went to church and clinic it did not help. But I used medication from Tzaneen and started harvesting this medicine. Now I treat those with the family history, and it helps, and they never fitted since then" (P3. Female, 61).

"A client would say we have this condition at home in almost all our households. My child was diagnosed by an old lady and gave her the medication to drink. Since I graduated as a traditional healer and I'm helping a lot of people" (P5. Female, 38).

Theme 3. Participants' descriptions of indigenous practice of managing the seizures / Тема 3. Описание участниками традиционных практик управления приступами

Sub-theme 3.1. Use of alternative indigenous measures

Participants pointed out that they use herbs to stop fitting if the client was brought to them while fitting. They mix the herb in the clay pot and enable the client to inhale, then the seizure will stop. During seizures they insert an object to prevent biting injuries, while others mentioned that instead of putting any flat and hard thing, they place a tablespoon inside the mouth. This is what traditional healers said about the management during seizure:

"During seizure, I put ballpoint in the mouth so that the client does not bite self during the seizure" (P6. Female 45).

"Ohk... some comes having seizure we start by mixing our medicine in a clay pot for the client to inhale" (P14. Female, 24).

From this analysis, the local people in rural villages use indigenous plants for medicinal purposes as this remained affordable and accessible treatment. Results showed that participants trusted this indigenous medicine even though their knowledge of real action was not adequate. Participants had the following quotations:

"I give them herbs that I get from the river, I take the roots of *rinka* which I grind and soak in water. I give them half a glass of this solution twice a day. Before I give my client, I normally test on myself to ensure that the medication is not harmful. I grind this medicine and if it's a small child I mix with yogurt, for infants I mix with soft porridge and adults

I give the one teaspoon three times a day, I also give them this powder to take home” (P1. Female, 57).

*“I used a tree called **msinsi**; many people don't know it. I will show you, it can be found in the forest some have it in their yards, but they don't know it heals epilepsy. It's a tree with flowers I cut the roots and grate it and boils until the water changes to yellow, it is taken with soft porridge” (P12. Female, 45).*

*“When we treat epilepsy, we prepare to steam using **tsemo** (traditional herbs). It depends on how the traditional healer treats epilepsy when we prepare to steam. We make fire until it produces a lot of ashes, then we take **tshidongo** and put those ashes together with the herbs. The patient is then covered and then steam” (P17. Female, 56).*

*“We also give **muoluso** for the patient to leak. It's a tree that we use to treat epilepsy, we just burn it then it changes its colour to black” (P17. Female, 56).*

Participants strongly believe that epilepsy is carried in the urine and travel from the body to the brain, causing epileptic seizure. Participants use chicken, urine and water to treat epilepsy because with urine all the waste in the body is excreted through urination. However, it can be noted that participants manage epilepsy by injecting blood from the chicken and human being mixed with urine and water, therefore, inject back both the chicken and human being. Proceeding, the chicken is given to someone to throw it away in the forest and never look back on his/her way of coming back because if he/she fails to do so the patient won't be healed.

*“As a healer, I remove the hair (head), armpit hair, pubic hair, and nails and mix them with animals product that I have which I won't mention, and (**lihlanga**) in the river for the patient to use it to inhale. After inhaling, we take (**lihlanga**) and take the whole product place inside it and close then we look for a child who has not started dating or menstruation / a virgin and go to the forest to dig a whole then closed it we instruct the child that after that they must go home and not look back” (P12. Female, 45).*

Participants associated epilepsy with **gonono**, an insect found in the bushes because it rolls people's faeces and lies in the back, making sounds like someone with an epileptic seizure.

*“Yes, sometimes a person who has epilepsy gets ill like **gonono** (fly), sometimes it rolls people's faeces in the bushes. So most healers treat patients with that **gonono** then the patient becomes healed. The **gonono** is burnt and crushed. Meaning if the traditional healer uses it for treatment, he or she will inject it to the patient so that the patient must not lie on the back like the **gonono** and we also use it for steaming” (P17. Female, 56).*

Sub-theme 3.2. Collaborative working with primary health care professionals

Collaboration with health professionals is valued. Some work well with the primary healthcare system because they send patients to the hospital to screen and confirm of other diseases before starting therapy. In contrast, others are confident in their treatment and believe they can manage the condition without it. Traditional healers who think they don't need help have a high risk of misdiagnosing because persons with high fevers can have seizures if they aren't treated.

DISCUSSION / ОБСУЖДЕНИЕ

Epilepsy is a condition that occurs when the brain cells are triggered and enough oxygen cannot reach the brain [12]. Traditional healers cited several misconceptions concerning epilepsy, which may impact on epilepsy's treatment decisions. These misunderstandings result from a lack of accurate health knowledge and epilepsy treatment. Traditional healers were not familiar with the real causes of epilepsy. According to them, epilepsy is a disease surrounded by a procession of taboos, of superstition that spares no socio-professional strata [13]. A multicausal view was advanced in their aetiological explanations of the causes of epilepsy ranging from natural, hereditary, and the supernatural. They associated the occurrence of seizures as being controlled by the moon and evil spirit. N. Mutanana [7] reveals that epilepsy is thought to be contagious or caused by supernatural forces in some cultures. Yet the majority believe that epilepsy is contagious, and it can be spread by saliva, urine, faeces, and blood [14]. The World Health Organization [15] argues that epilepsy is communicable, although the causes of the disease are unknown. Yet, structural, genetic, viral, metabolic, and immunological factors all affect the condition's onset.

Traditional healers often equate heredity with blood to blood contact; however, epilepsy could be passed down through the family even if neither parent has suffered from it. N. Mutanana [7] reported that traditional healers attributed epilepsy to genetics. Inheritance was also mentioned as a source of epilepsy, implying that there are families who suffer from this ailment and cannot be treated since it runs in the family. According to N. Mutanana [7], epilepsy can be passed down through the generations via the ancestral spirit, which can occur because of unfulfilled desires. Not only that, epilepsy is a condition passed down from parents to offspring and is caused by blood transmission. If one inherits wealth from epilepsy, one will also have it [16]. Other mental illnesses, like schizophrenia, can be triggered by substance abuse. As a result, epilepsy is similar to other mental illnesses in that it starts in the brain and goes off-centre where massage are sent into the brain, resulting in seizures.

Some traditional healers associated epilepsy with a snake that is controlled by the moon; however, a snake is a reptile that is not designed to live in the stomach. J. Anderson and K. Hamandi [17] support that epilepsy is thought to be induced by an insect traveling about inside the stomach. According to [18, 19], a link between the phase of the midday and convulsive episodes has been made since ancient times, and it is still believed. Epilepsy is also thought to be caused by an evil spirit. The only way to treat it is to consult traditional healers, who are considered to be doctors who can detect things from the spirit through their ancestors. D.A. Deegbe [20] discovered that the majority of participants strongly believe epilepsy is linked to a spiritual cause. A jealous person can create an evil spirit in some cases, it is claimed that the patient has a calling to a traditional healer, and the consequence is a seizure to make the calling known.

Most patients had epilepsy seizures, as evidenced by their falling, rolling eyes, trembling, and excreting form from the mouth. Traditional healers associate epilepsy with the insect

called **gonono**, in Tshivenda culture a bush bug that rolls human faeces. The perceptions of symptoms were similar to the western presentation. According to M.J. Keikeleme and L. Swartz [21], epilepsy is a “thing” that occurs inside the body and is characterized by jerking of the body, turning of the eyes, foaming from the mouth, stiffness of the fingers, urination, and loss of consciousness. Nonetheless, N. Mutanana [7] claims that epilepsy is characterized by a sudden fall, limb movement, and saliva ejection from the mouth. Furthermore, epilepsy is referred to as a “falling” or “fitting” condition since patients with epilepsy shake and fall [22, 23]. Moreover, the most severe attack occurs when one collapses to the ground like a corpse [3].

Traditional healers play significant role in the treatment of patients living with epilepsy. Their status and worldview have a considerable influence on the therapies or treatments that are provided, thereby affecting the quality of care of their clients. Most traditional healers felt that the insect **gonono** is the proper insect for curing epilepsy. However, the usage of **gonono** may be risky because it is not documented or established. Still, traditional healers have a lot of faith in it and have a lot of influence in the communities. The communities of Mpumalanga and Limpopo are adopting these methods to manage their health.

While the patient has a seizure placing a flat artifact like a spoon in the patient's mouth has been identified as one of the most often used ways for supporting the patient in seizure management. These non-pharmacological strategies for assistance during seizures should be taught to the public. People should be informed with plans to prevent patient injury because epilepsy can strike at any time; thus knowing makes it easier for people to adjust to the disease and decreases the risk of stigma. P. Anand et al. [23] explained other management by traditional healers to insert garlic, orange, wine, or a paste formed of grains into the seizing person's nose or mouth and read Koranic text to stop seizures.

Plants are the most employed by traditional healers in Mpumalanga and Limpopo to treat epilepsy. The researchers identified plants like **rinka**, **msinsi**, **tsemo**, and **muoluso** used in epilepsy care, but its effectiveness still need to be determined. The study results show that traditional healers claimed to be using the roots of **rinka**, which is grinded and soaked with water then drank half of a cup twice a day. In case of a child the medication is given with yogurt to stimulate the taste. Nevertheless, other participants indicated that they use **msinsi** (traditional herbs) as their medication; it is grated and boiled until it changes colour to yellow. Participants suggest that they use **tsemo**, a traditional herb used by the Venda tribe, a mixture of various trees. The herbs are used for steaming, however, results show that steaming depends on what the traditional healers use to manage epilepsy. Fire is made that produces ashes, the ashes are placed in a piece of a clay pot called **tshidogo**, and together all the product and the patient are covered with blanket and steam. The traditional healer claimed to use **muoluso** that is burnt and changes its colour into black; therefore, the patient leaks the medication.

The plants are blended with water or burned to inhale the fumes, depending on how the traditional healer employs them.

The most difficult aspect of treating epilepsy with traditional healers is that the plants are only known to them. They do not share this information because they are discreet, assuming that the person will do their job and make more money. F.J. Carod-Artal and C.B. Vázquez-Cabrera [4] report the usage of two plant combinations to cure epilepsy, the plants are dried, and worn grains and the seeds of both plants are mixed and diluted in cold water every day for two weeks. In Brazil, epilepsy is managed with two plants whose roots are crushed and diluted with cold water for four hours before being put to the client's eyes many times for three days [4].

Chicken has been the most widely utilised livestock in conjunction with the body's excretion, which is urine, in the treatment of epilepsy. Using the same product to inject chicken and human bodies may be harmful because the chicken is thrown away afterward, and others may take the chicken and eat it, increasing the risk of infection. People with epilepsy have a tiny possibility of being healed because the procedure appears to be challenging to follow as described. Traditional healers cited situations to avoid when having epilepsy; fire burns, lengthy walks on the road alone, playing near the river, fish, and pork are all things that put persons with epilepsy at risk. During the therapy period, the client is not allowed to eat monkeys or any form of fish; only after he has been treated is he allowed to eat these forbidden foods [4]. Furthermore, animal spirits can cause seizures; however, depending on the person's societal or religious beliefs, these animal spirits can be a jaguar, a puma, or a sparrow hawk, among other creatures [4].

According to M.J. Keikelame and L. Swartz [22], most traditional healers supported collaboration with primary health care providers and gave techniques for doing so. Traditional healers are eager to initiate recommendations between the two systems, but this hasn't been possible due to a lack of acknowledgment. However, numerous obstacles remain in the way of collaboration in the health care system, such as the fact that traditional healers' sick certificates are not accepted [22].

On the other hand, it underline the importance of formal agreements that include freedom of expression and respect for traditional healers' and primary health care professionals' knowledge [22, 23]. K. Peltzer [24] observed that, even in circumstances where traditional medicine benefits, few patients are referred to traditional healers from the primary health care system. According to K.S. Yang [25], indigenous practices can be developed and integrated.

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Data availability statement / Заявление о доступе к данным

The raw data used to support the findings of this study are included in the article and can be available from the corresponding author upon request.

CONCLUSION / ЗАКЛЮЧЕНИЕ

The traditional healers' status in rural communities was acceptable and their treatment modalities were preferred. They perceived themselves to have enough good knowledge of the causes and management of epilepsy, but this was associated to the superstitions connecting the disease to evil

spirits. Traditional healers were confident that they could diagnose the condition, recognize the symptoms, and manage it. It is recommended that the development of collaboration between modern and traditional health practitioners be encouraged. The successful cooperation for respectful partnership between modern and traditional doctors would allow clients access to primary health care.

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Appendix 1 / Приложение 1

Definitions of traditional practices

Rinka is a traditional herb used to treat epilepsy found in the river that is grinded and soaked in the water and drank using a cup twice a day.

Tsemo is a mixture of different trees (traditional herbs) used to prepare for steaming people with epilepsy. The herbs are mixed with white chicken blood and injected into the chicken and human being; the chicken will be taking the illness from the person.

Muoluso is a mixture of herbal plants that is burnt until it changes its colour into black and mixed with soft porridge; by so doing, it heals epilepsy though the mechanism of action is not precise.

Msinsi is a traditional herb that is used to kill the snake that is believed to be in the umbilical cord of people living with epilepsy that rotate with the change of noon, causing one to have seizures.

Lihlanga is a small thin tall tree found in the river that is used to prepare herbs to treat epilepsy that is burnt and crushed for one to steam. As the patient is steaming, the spirit of epilepsy will be coming out of the body.

Tshidogo is a piece of a broken clay pot that is used to put the ashes and the mixed herbs (tsemo) for steaming preparation.

Gonono is a fly found in the forest that rolls human faeces and lies in its back, making certain sounds like an epileptic patient when having seizures. Gonono is burnt, crushed, and injected into people living with epilepsy to stop the fits.