EPILEPSY LIFE SKILLS EDUCATION GUIDELINES FOR PRIMARY SCHOOLS IN LIMPOPO AND MPUMALANGA PROVINCES, SOUTH AFRICA

By

Thendo Gertie Makhado

Student Number: 14007248

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Supervisor	*Co-Supervisor*
Prof RT Lebese	**Prof MS Maputle**

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DECLARATION

I, **Thendo Gertie Makhado**, hereby declare that the thesis, ***"EPILEPSY LIFE SKILLS EDUCATION GUIDELINES FOR PRIMARY SCHOOLS IN LIMPOPO AND MPUMALANGA PROVINCES, SOUTH AFRICA"*** submitted by me, has not been submitted previously for a degree at this or any other university, that it is my own work in design and in execution, and that all reference material contained therein has been duly acknowledged.

Signature:  **Date**: 15 June 2023

PREFACE

This thesis was written for my PHD Degree in Nursing. The title of my thesis "*EPILEPSY LIFE SKILLS EDUCATION GUIDELINES FOR PRIMARY SCHOOLS IN LIMPOPO AND MPUMALANGA PROVINCES, SOUTH AFRICA".* This was a very challenging yet interesting endeavour as I interacted with numerous participants in the study. The management and support of learners with epilepsy in primary schools in the provinces of Limpopo and Mpumalanga will be significantly impacted by the Epilepsy Life Skills Guidelines, which were created and validated in this study. These recommendations give teachers doable tactics for making a welcoming learning environment and easing seizure control in the classroom. As a result, they may enhance the academic performance and general wellness of students who have epilepsy. Additionally, by reducing social stigma and discrimination against people with epilepsy, the guidelines may contribute to a more inclusive society. This thesis is presented in three Sections. **Section A** features an Overview of the research Process. **Section B** provides an outline of articles as they were published in different Publications and **Section C** presents the conclusion, limitations and recommendations of the thesis.

Section A: Study protocol

This paper presents the study procedure. Additionally, it details the background, problem statement, and objectives of this study. The paper further offers a detailed outline of the research methods used to gather data. The study protocol was submitted to PLOSE ONE **(Published)**

Section B: Article /Papers

This section has a total of Five Manuscripts/articles as detailed below:

2.1 Perceptions of teachers regarding the inclusion of epilepsy education in life skills for primary learners and teachers in Limpopo and Mpumalanga provinces (South Africa)

This paper presents teachers' viewpoints regarding incorporating epilepsy education into life skills education, recognising that teachers interact with students the most in a school setting. This paper was submitted to *EPILEPSY AND PAROXYSMAL CONDITIONS* **(Published)**

2.2 Inclusion of epilepsy in life skills education of primary school learners: The perceptions of life skills advisors in Mpumalanga and Limpopo Province.

This paper presents the perceptions of life skills educational advisors regarding the inclusion of epilepsy content in life skills education with the perception that life skills educational advisors are the ones working together with teachers and other educators to develop, implement, and evaluate the curricula. This paper was submitted to *EPILEPSY AND PAROXYSMAL CONDITIONS* **(Accepted for Publication 2nd issue 2023)**

2.3 Incorporation of Epilepsy into Life Skills Education: Perceptions of Primary School Learners in Mpumalanga and Limpopo Provinces—A Qualitative Exploratory Study

This paper presents how students perceive the integration of epilepsy education into life skills training, which can help inform the development of effective educational programs and policies aimed at reducing stigma and promoting positive attitudes towards people with epilepsy. This paper is submitted to ***Children (MDPI)*** **(Published)**

2.4 A Conceptual Framework to Enhance Education on life skills related to epilepsy in Primary schools.

This paper presents a framework that aims to enhance the knowledge and understanding of epilepsy among students, teachers, and parents and develop social, self-management, advocacy and community engagement skills among children with epilepsy. This paper is submitted to ***Health Gesondheid*** **(Under Review)**

2.5 Development and Validation of Epilepsy Life Skills Guidelines for Primary School Learners and Teachers in Limpopo and Mpumalanga Provinces

This paper presents guidelines for epilepsy life skills education specifically designed for primary school learners and teachers in the Limpopo and Mpumalanga provinces. This paper is submitted to **Children (Under Review)**

Section C: conclusion, recommendations and limitations

The conclusion, recommendations, and limitations section is a crucial part of a study, and it summarizes the key research findings, offers suggestions for useful applications and further investigation and discusses the study's limitations.

PUBLICATIONS

1. Makhado, T.G., Lebese, R.T., Maputle, M.S. and Makhado, L., 2022. Epilepsy life skill education guidelines for primary school teachers and learners in Limpopo and Mpumalanga Provinces, South Africa: Multiphase mixed methods protocol. Plos one, 17(7), p.e0271805.
2. Makhado, T.G., Lebese, R.T. and Maputle, M.S., 2023. Perceptions of teachers regarding the inclusion of epilepsy education in life skills for primary learners and teachers in Limpopo and Mpumalanga provinces (South Africa). Epilepsy and paroxysmal conditions, 14(4), pp.334-343.
3. Makhado, T.G., Lebese, R.T. and Maputle, M.S., 2023. Incorporation of Epilepsy into Life Skills Education: Perceptions of Primary School Learners in Mpumalanga and Limpopo Province—A Qualitative Exploratory Study. Children, 10(3), p.569.
4. Makhado, T.G., Lebese, R.T. and Maputle, M.S., 2023. Inclusion of epilepsy in life skills education of primary school learners: the perceptions of life skills advisors in Mpumalanga and Limpopo Provinces (South Africa). Epilepsy and paroxysmal conditions, 15(2), pp.125-134.
5. Makhado, T.G., Lebese, R.T. and Maputle, M.S. A Conceptual Framework to Enhance Education on life skills related to epilepsy in Primary schools. HEALTH GESONDHEID. **Under Review**
6. Makhado, T.G., Lebese, R.T. and Maputle, M.S., 2023. Development and Validation of Epilepsy Life Skills Guidelines for Primary School Learners and Teachers in Limpopo and Mpumalanga Provinces. Children, 10(7), p.1194.

ABSTRACT

Background: The disorder known as epilepsy is characterized by disturbed brain nerve cell activity, which results in seizures. It mostly affects children, especially those in primary school, and may be caused by a genetic condition. Due to not enough knowledge about epilepsy, the majority of people who live with it experience stigma and discrimination.

Aim: The purpose of this study was to develop epilepsy life skills education guidelines for primary school learners and teachers in the provinces of Limpopo and Mpumalanga. By educating them about epilepsy, this study aimed to reduce stigma and discrimination against those who have the condition.

Methods: The goal of this study was achieved through the use of a multimethod research strategy. In order to ascertain the primary school teachers', life skills educational advisors', and learners' perceptions or opinions regarding the necessity of including epilepsy in life skills education, stages 1 and 2 of the empirical phase (phase 1) employed an exploratory-descriptive study design. Pre-testing was carried out to determine the study's viability and to see if the main questions were sufficiently clear and understood.

Individual interviews with life skill education advisors and teachers were used to gather data. Additionally, focus groups with learners from the sampling primary schools in the provinces of Limpopo and Mpumalanga were held. Trustworthiness was attained by strengthening dependability, credibility, conformability and transferability. Atlas.TI and the process of notice-collect-think (NTC) analysis was used to analyse the data.

Manuscripts/Articles with brief purpose and findings: The results of the study's first phase showed that epilepsy needed to be covered in lessons on life skills for young children in primary schools. Two manuscripts were published and one that is accepted for publication, and it presented the need from the perspectives of learners, teachers, and life skills educational advisors. The conceptualisation of the Phase 1 results into a conceptual framework was the focus of the study's Phase 2, and the resulting publication is currently being reviewed. The World Health Organization's (2014) widely used guideline development guide and validation process was adapted by the researchers to create the epilepsy life skills guidelines in Phase 3. This work is currently being reviewed. The study complied with both internal and external ethical standards, and suggestions were made in light of the findings.

Keywords: Epilepsy, Knowledge, Life skills education, Primary School Teacher, Life Skills educational advisors, learners, conceptual framework, epilepsy life skills guidelines

DEDICATION

I dedicate this dissertation to my Heavenly Father, upon whose strength I rely forever. I am grateful to God for providing me with good health, courage, commitment, and wisdom, enabling me to overcome various challenges and complete this thesis.

I also dedicate this work to my beloved parents, Mr Malindi Peter Nemavhulani and Mrs Azwidohwi Valerie Nemavhulani, as well as my supportive husband, Prof Lufuno Makhado, and our sons Ofunwaho and Orifha Makhado. I am also grateful to my siblings Makwarela, Daniel, and Dakalo Nemavhulani for their support.

The GladAfrica Foundation Trust under GladAfrica Epilepsy Research Project and the South African Medical Research Council (SAMRC) Researcher Development Award (RDA) with grant number SAMRC RCD-RDA22/23 provided the funding for this project.

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- I would like to appreciate the Department of Education of Limpopo and Mpumalanga province for the approval to conduct this study.
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LIST OF ACRONYMS AND ABBREVIATIONS

EEA:	**Employment Equity Act**
FGD:	**Focus Group Discussion**
NCT:	**Notice-Collect-Think analysis**
PLWE:	**People Living with Epilepsy**
WHO:	**World Health Organization**
CF:	**Conceptual Framework**
GRADE:	**Grading of Recommendations Assessment, Development and Evaluation**
PICO:	**Population, Intervention, Comparison, Outcome**
GDG:	**Guideline Development Group**
LEAs:	**Life skills Educational Advisors**
SAMRC:	**South African Medical Research Council**
RDA:	**Researcher Development Award**

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Thendo Gertie Makhado[1], Rachel Tsakani Lebese[2], Maria Sonto Maputle[1], Lufuno Makhado[3]

[1] Department of Advance Nursing Sciences, Faculty of Health Sciences, University of Venda, Thohoyandou, South Africa.
[2] Research Office, Faculty of Health Sciences, University of Venda, Thohoyandou, South Africa.
[3] Department of Public Health, Faculty of Health Sciences, University of Venda, South Africa

Corresponding Author: Thendo Gertie Makhado, Email- thendogertie@gmail.com

ABSTRACT

Epilepsy is a disorder in which nerve cell activity in the brain is disturbed, causing seizures. It may result from a genetic condition and occurs mostly in children especially at a primary level. Most people living with epilepsy suffer from stigma and discrimination because of a lack of knowledge regarding epilepsy. This study aimed to develop life skills education guidelines for primary school learners of Limpopo and Mpumalanga provinces to educate learners about epilepsy thus the decrease of stigma and discrimination. A multimethod research approach was used in this study to fulfil its purpose. Both stages 1 and 2 of the empirical phase (phase 1) employed an exploratory-descriptive study design focusing on the primary school teachers, life skills educational advisors and learners to obtain their perceptions or views regarding the need to include epilepsy in life skills education. Data was collected using individual interviews for life skill educational advisors and for teachers and focus group discussions for learners at the sampled primary schools in Limpopo and Mpumalanga provinces. Phase two conceptualised the phase 1 findings into the conceptual framework and phase 3 developed and validated the epilepsy life skills guidelines. This study adhered to both internal and external ethical considerations. Recommendations were made based on the findings of the study.

Keywords: Epilepsy, Knowledge, Life skills education, Values, Primary School Teacher, Life Skills educational advisors, learners

INTRODUCTION

Epilepsy is regarded as a brain disease that is very common and affects about 70 million people worldwide, and it is characterized by the presence of seizures (Thijs et al., 2019) [1]. Seizures associated with epilepsy may last for a few minutes, characterized by a sudden fall, blank stare, or jerking movements. According to Magazi et al. (2018) [2], there are two types of epilepsy seizures: motor and non-motor seizures. Motor seizures include tonic, myoclonic, clonic, tonic-clonic, atonic, hyperkinetic seizures, automatisms, and epileptic spasms. Moreover, non-motor seizures include absence, cognitive and emotional, sensory, and autonomic seizures (Magazi et al., 2018) [2]. Adequate knowledge related to epilepsy is of great importance and a necessity worldwide because misconceptions and stigma surround this condition.

A study conducted in western countries indicates some of the misconceptions attached to the condition which describes epilepsy as a supernatural condition because the word 'epilepsy' in Greek means *"being seized by forces from without*" (Herrmann et al., 2016) [3]. This is also supported by Dolo et al. (2018) [4] in their study conducted in Congo, which also explained that epilepsy is the condition caused by evil spirits, saliva, or touching same-sex individuals during seizures. These misconceptions may negatively affect people living with epilepsy (PLWE) because they feel stigmatized and discriminated against, leading to fear and anxiety (Neyaz et al., 2017; Yeni et al., 2018) [5,6]. Furthermore, there is a perception that PLWE are not supposed to get married and are excluded in social activities, resulting in self-blame and shame (O'Neill et al., 2019) [7]. These misconceptions are caused by several factors identified by Musekwa et al. (2021) [8], who revealed that poor education and low socioeconomic status contribute to the misconceptions and stigma towards epilepsy. In support, Yeni et al. (2018) [6], and Kartal and Akyildiz (2016) [9] also emphasized that insufficient knowledge and cultural beliefs towards epilepsy contribute to misconceptions. The aftermath of the identified misconceptions and stigma towards epilepsy can potentially impact the health-seeking behaviours of PLWE.

The World Health Organization (WHO) (2019) [10] reported that PLWE might not seek treatment/health care because of fear of being identified with the disease due to stigma and misconception related to the condition. Furthermore, some reports strengthening epilepsy education might increase health-seeking behaviour. Not being educated or having poor knowledge about a phenomenon can negatively impact an individual's life.

Poor education can lead to poor health, unemployment, poor health-seeking behaviour, depression, exploitation, etc. [3,7,8]. Poor education regarding epilepsy impacts the lives of PLWE, parents and caregivers to PLWE and community members. This was affirmed by

O'Neill et al. [7], who revealed that due to lack of education regarding epilepsy, many children dropped out from school or were denied access to education because of the perception that a learner with epilepsy can contaminate other learners at school. Similarly, Herman et al. [3] has explained that lack of epilepsy education can lead to ignorance about treatment and social exclusion by the community. Evidently, poor education regarding epilepsy is not only found in the community and among other stakeholders but also a serious issue among school children and teachers.

Studies show that epilepsy is the most common disorder in childhood, indicating that the prevalence of epilepsy is much higher from the age of 4-10 [11,12]. Additionally, about 0.7% of school-age children have epilepsy which makes it possible that every school has a child that has epilepsy [11,12]. When a child at school has an epileptic attack in the classroom, it can affect other learners and disturb the classroom. Therefore, knowledge regarding epilepsy is of paramount importance among teachers and learners. According to Owolabi et al. [13], teachers lacked adequate knowledge regarding epilepsy, resulting in the separation of learners with epilepsy from those without Epilepsy. Moreover, Whiting-MacKinnon and Roberts [14] revealed that learners with Epilepsy felt isolated as they were treated differently from other learners and teased by other learners. This predisposes the affected learners from receiving support, care, and assistance during an epileptic seizure, let alone the preventive measures.

Studies published worldwide indicate that epilepsy education receives less focus than it does on other chronic diseases [15, 16, 17]. Therefore, there is poor education regarding Epilepsy worldwide [18, 19].

The South African curriculum on life skills and life orientation focuses less on Epilepsy, as indicated in Table 1, where only in grade 9 learners get to learn about Epilepsy. This is serious given the need for awareness among school children in terms of Epilepsy, its signs and symptoms, behavioural and necessary steps one takes in case of an episode of seizure or epileptic attack. Based on Grade, the following Life Skills and Life Orientation topics are covered as reflected in (Table 1).

Table 1: Life skill and life orientation focus per grade.

Grade 1	Healthy Habits	
Grade 2	Healthy living	
Grade 3	Health Protection and healthy eating	
Grade 4-6:	No Health-related issues included	
Grade 7	No Health-related issues included	
Grade 8	No Health-related issues included	
Grade 9	Common diseases: tuberculosis, diabetes, Epilepsy, obesity, anorexia, HIV and AIDS Causes of diseases: social, economic and environmental factors including use of alcohol and tobacco, poor eating habits and physical inactivity Treatment options, care and support Resources on health information and health services Strategies for living with tuberculosis, diabetes, Epilepsy, HIV and AIDS	Epilepsy covered
Grade 10	Development of the self in society Social and environmental responsibility	
Grade 11	Development of the self in society Social and environmental responsibility	
Grade 12	Development of the self in society Social and environmental responsibility	

Although, there had been studies conducted in South Africa indicating some guidelines aimed at helping teachers on how to be able to recognize and manage learners with Epilepsy [20, 21, 22, 23], little is known about the availability of appropriate life skill guidelines that focus on school learners themselves in terms of their ability to recognize and manage fellow learners should an epileptic attack present itself when none of the teachers are available to offer help. It should be noted that school-age and adolescent age is regarded as the most important ages when intellectual capabilities are very high. However, there is scarce research regarding education to learners regarding Epilepsy. It is therefore of paramount importance for learners in primary levels to be furnished with life skill education focused on Epilepsy as they play an essential role in the lives of fellow learners, family members, and community members.

CONCEPTUAL FRAMEWORK

The three-legged stool model guided this study, consisting of three pillar concepts and foundational support [24]. The interaction of the three pillars is represented graphically in Figure 2 as a three-legged stool [24]. According to the analogy of a three-legged stool, all

three legs must be present, at the same length, and structurally sound [24]. This three-legged stool model is applicable in the life skills approach, wherein each leg should be as strong as the others, and all need to be a firm foundation of support. As a result, the three legs of this study are composed of three pillar concepts for the skills for life, which are:

- Knowledge and Understanding
- Values and Attitudes
- Skills

1.2.1 Knowledge and understanding of epilepsy

Given the lack of knowledge and understanding of Epilepsy in the public, which is manifested through increased misconceptions [8, 25, 26, 27, 28, 29, 30, 31, 32, 33], the primary school learners will need to know and understand Epilepsy from the education provided in the primary schools.

1.2.2 Values and attitudes towards epilepsy

The link between knowledge of and attitudes and traditional solid values towards Epilepsy has been documented by various studies [6, 25, 34, 35]. Thus, positive attitudes towards Epilepsy had been predicted by adequate knowledge and understanding [6, 36, 37, 38, 39, 40]. Therefore, it is imperative that thorough exploration of the values and attitudes towards Epilepsy, positive values and attitudes can be instigated on primary school learners. Primary school learners will be facilitated on how to explore values and attitudes towards Epilepsy to establish what is positive and negative to stimulate appropriate values and attitudes for a better understanding of PLWE.

1.2.3 Skills related to epilepsy

According to Braga et al. [32], children require to be trained and educated in small groups through an enabling approach. This has a potential for children to improve their knowledge about Epilepsy, their competency and skills related to dealing with seizures when a fellow student is having an episode and their social interactions with PLWE [32].

These legs, as aforementioned, should have a firm foundation (individual's self-esteem) which is constantly strengthened through the three core elements provided by the primary school teachers, which include:

- Educating- Promotes knowledge and understanding of Epilepsy
- Exploring- Promotes positive values and attitudes towards Epilepsy
- Enabling- Promotes skills towards Epilepsy (as well as proper social interaction)

The interconnectedness of the three-legged stool and its foundational support is presented in Figure 2.

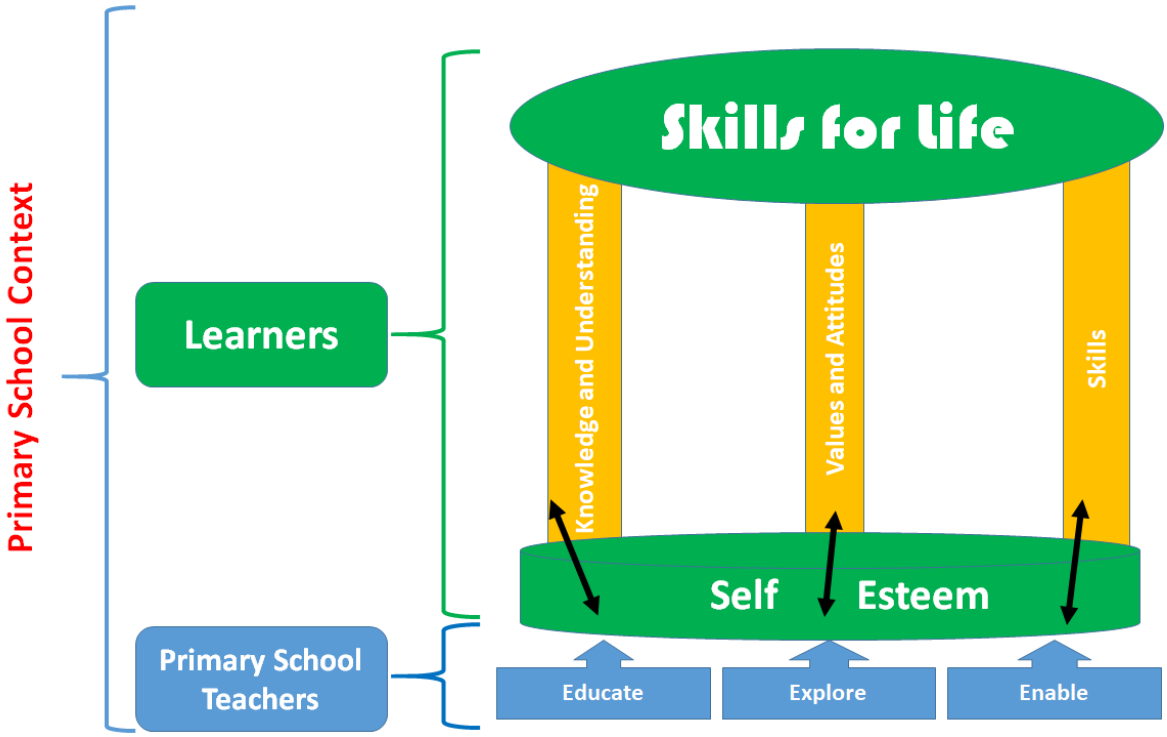

Figure 2. The life skill approach model adapted from the SNR consultancy & Training (2010)

PROBLEM STATEMENT

There seems to be neglect in the provision of epilepsy life skill education towards rural-based primary school learners in Limpopo and Mpumalanga provinces. According to Makhado et al. [25], it was emphasized that *"a holistic understanding of Epilepsy is key given that it has been found and understood to exist within two parallel worlds: the first is based on the scientific advances in the management and treatment of Epilepsy where enormous scientific progress has been witnessed; the other concerns a religious and traditional world characterized by beliefs, superstitions and prejudice related to Epilepsy that remain quite resistant to the numerous Western initiatives for people living with Epilepsy (PLWE). Strong traditional values, practices and beliefs contribute to delays in the presentation and diagnosis of Epilepsy in the available healthcare systems of people in the rural communities of South Africa."* Thus, the Department of Basic Education (DoBE) lacks involvement in bridging the identified gap through life skills education. The latter is evident given the focus of most guidelines, policies and programmes found in South Africa mainly aimed at providing such education to learners living with Epilepsy [20, 21, 22, 23]. This is a huge problem given that fellow learners living without Epilepsy need to be aware, conscious, and in a capacity to recognize the onset of seizures as well as any potentially visible signs and symptoms of Epilepsy, reporting and

taking necessary steps to assist where possible during any form of an episode. The identified problem can increase stigma and discrimination towards learners living with Epilepsy and encourage misconceptions and maltreatment of such learners. Within the issues, the need to develop epilepsy life skills guidelines for primary learners to help curb the misconceptions, stigma and discrimination, maltreatment of learners living with Epilepsy while promoting timely response to the onset of epileptic signs and symptoms, referral and proper support thereof. This study aimed to develop epilepsy life skills education guidelines for primary school learners of Limpopo and Mpumalanga.

RESEARCH DESIGN AND METHODS

Research approach

A research approach is a plan that guides the research process step by step. It outlines the critical steps that would be involved in the whole research and how they will be integrated. The study was conducted in three phases. The first phase gathered the empirical data from participants. The data was analysed and then informed the second phase that involved the conceptualisation of the findings into the conceptual framework that guided the third phase that involved the development and validation of the epilepsy life skills education guidelines for primary school learners of Limpopo and Mpumalanga. The empirical phase employed a qualitative multimethod approach, which will utilise two independent, yet interdependent research methods to complement one another and address the study's primary aim. Therefore, the researcher used two approaches (referred to hereafter as stages), both qualitative.

Stage 1 of the empirical phase was an exploratory-descriptive study focusing on the teachers' and life skills educational advisors' perceptions or views regarding the need to include epilepsy in life skills education and possible key epilepsy life skills education content that can be included in primary education level from Grade to Grade. This was followed by stage 2 of the empirical phase, which was also an exploratory-descriptive study focusing on primary learners' perceptions regarding the need to include epilepsy in life skills education and the important life skills elements of epilepsy that Primary learners would like to learn. The results of the two studies were conceptualised into the conceptual framework (Phase 2) which was used to guide the development and validation of the epilepsy life skill guidelines for primary school learners (Phase 3) for Mpumalanga and Limpopo Province.

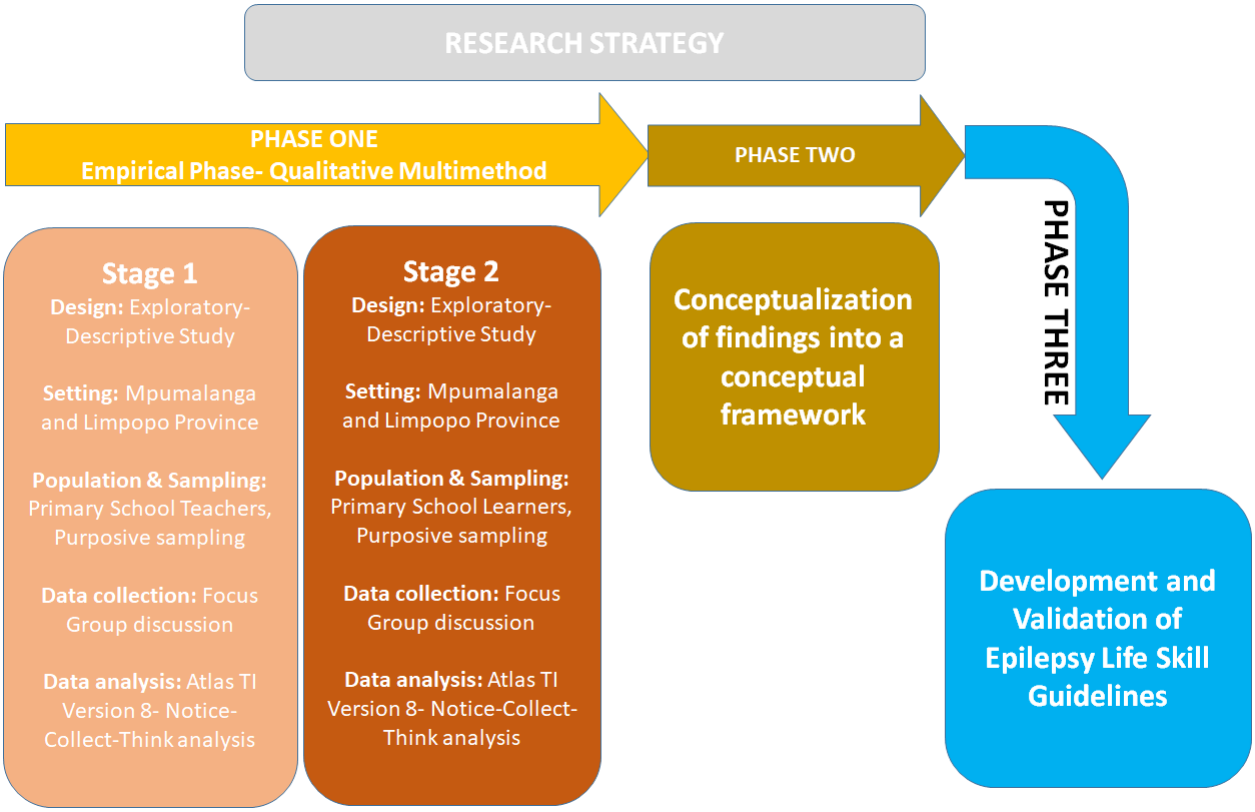

Figure 1: Research approach

Phase one: Empirical phase- Stage 1 and 2 qualitative multimethods

Study design

Multimethod research is used in this study to fulfil its purpose. Multimethod research means using various methodologies and methods of research and qualitative and quantitative techniques [41]. Multimethod research is characterized by the co-existence of different research methods [42]. Furthermore, multimethod studies are not limited to the use of qualitative and quantitative methods but can combine different methods to answer various questions in one study; Clark and Ivankova [42,43] discuss how researchers use a variety of qualitative and quantitative methods to conduct multimethod research. According to Creswell [44], the distinction between mixed-method and multimethod is that mixed-method research is the collection analysis and integration of quantitative and qualitative methods. In contrast, multimethod involves collecting and analyzing multiple types of data, whether qualitative, quantitative or both [44].

Briefly, multimethod research comprises the use of several different research methods to answer one research question or parts of it in a manner that complements the others. A qualitative multimethod approach was proposed in this study. It utilised two independent yet interdependent research methods to complement one another and addressed the study's main

aim. Therefore, the researchers used two approaches (referred to hereafter as stages), both in qualitative methods. Multimethod promoted the exploration of primary school teachers and life skills advisors' influence on knowledge and understanding of epilepsy and the values and attitudes towards epilepsy among primary school learners. Promoting values and attitudes towards epilepsy and promoting knowledge and understanding of Epilepsy are the strong pillars of the three-legged stool model that guided this study.

Study setting

This study was conducted in two South African provinces, namely Limpopo and Mpumalanga. The province of Limpopo is in the far north of South Africa, bordering Zimbabwe, Botswana, and Mozambique, while Mpumalanga is in the east of South Africa, bordering Swaziland and Mozambique. There is a proximity between the two provinces. The researchers chose to concentrate their attention on these two provinces since they contain various population groups. The two provinces are also geographically and culturally connected, accommodating the most diverse cultures from other South African provinces.

Limpopo and Mpumalanga provinces are populated and characterized by diverse, multicultural groups of people. Thus, mostly Basotho, Pedi, Zulu, Swathi, Ndebele, Venda and Tsonga within Limpopo province, while Mpumalanga province has a vast mixture of Tsonga, Ndebele and Swati cultures. Limpopo has been reported to be regarded as the fifth largest population province in South Africa, with an overall population of 4.9 million people. In comparison, Mpumalanga is ranked the 6th most populated province in South Africa, with an overall population of 4.7 people [45]. There has been an increase in access to basic services in Limpopo and Mpumalanga provinces. However, there are still disparities between urban, peri-urban and rural areas. The two provinces are characterised by dense rural areas that are underserved in healthcare provision. Mpumalanga province's unemployment rate is at 35.2%, while Limpopo province is at 30.4% [45]. Using this information, the researcher determined it as a population of interest and extracted the study sample from this population.

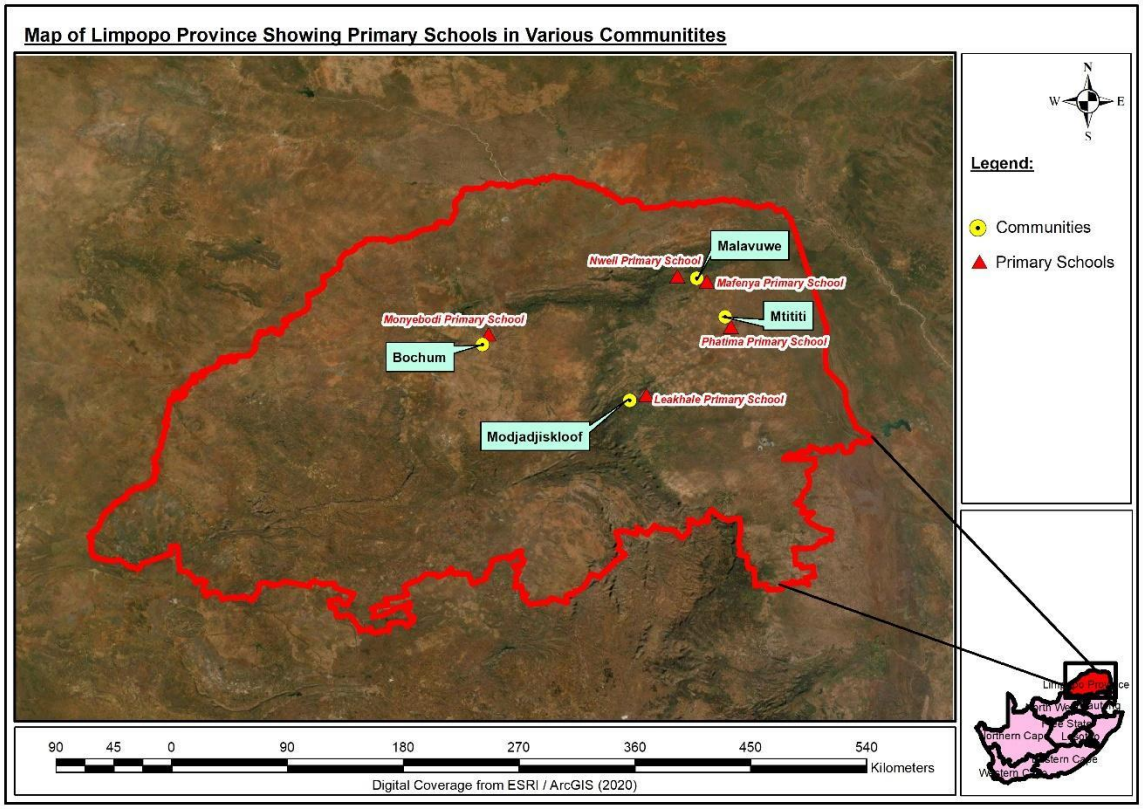

Figure 2: Limpopo map

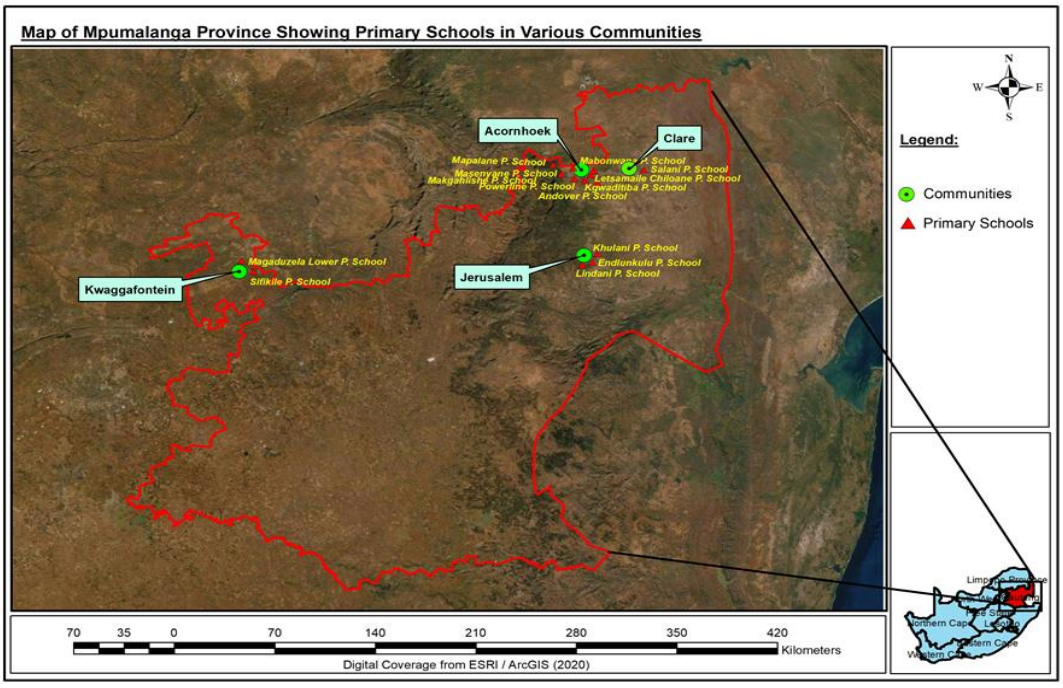

Figure 3: Mpumalanga map

Stage 1: Qualitative study

Study design

This first stage of the proposed study was an exploratory-descriptive study exploring the perceptions of primary school teachers and life skills educational advisors regarding the need of including Epilepsy in life skills education. According to Polit and Beck [46], exploratory-descriptive studies are used to shed light on how a phenomenon manifests and can be particularly useful for uncovering the true nature of little-known phenomena. In addition, exploratory-descriptive research has been described as a non-traditional study in which a naturalistic inquiry is conducted to gain insight into a phenomenon. In these types of studies, the variables under study are not controlled, and the data are used to develop a theory or explain the phenomenon from the participants' perspective [47,48].

Population

For the first stage of the study, school teachers and life skills educational advisors were the target population for possible inclusion in the study. Teachers and life skills educational advisors are the people who help learners acquire knowledge and competence, so they can tell if the inclusion of Epilepsy in life skills education for primary learners is necessary.

Sampling

Sampling is the process of selecting a group of people, events, behaviours or other elements that represent the population being studied [49]. According to Brink et al. [50], non-probability is one of the types of sampling which allows the researcher to judge and select participants who know most about the phenomenon. Grove and Gray [51] said that in non-probability, not every participant could participate in the study. Purposive sampling is a judgmental or selective technique of sampling in which the researcher consciously selects certain participants, elements, events or incidents to include in the study [51].

Sampling of the provinces and rural communities

Purposive sampling was used to sample the villages based on cultural diversity. The study is part of the GladAfrica Epilepsy Research Project (GERP), thus operating within the already selected rural communities Limpopo and Mpumalanga provinces. For Limpopo province, the selected rural communities include Malavuwe/Nweli, Mtititi, Bochum and Modjadjiskloof. For Mpumalanga province, the selected rural communities include Clara, Acornhoek, Jerusalem and Kwaggasfontein.

Sampling of the schools

Total population sampling was used to sample all primary schools located within the selected rural communities of Limpopo and Mpumalanga provinces of South Africa.

Sampling for primary school teachers and life skills educational advisors

This study employed a non-probability purposive sampling method to purposely select primary school teachers and life skills educational advisors to participate in the study. It is with the judgement that the primary school teachers and life skills educational advisors have a better understanding regarding the need for epilepsy life skills education.

Sample size

The researcher interviewed 20 primary school teachers and eight life skills educational advisors in Mpumalanga and Limpopo provinces and the sample size was determined by data saturation.

Inclusion and exclusion criteria

The researcher sampled only teachers and life skills educational advisors that meet the following criteria:

- A teacher having a qualification that enables them to be recognized as a teacher in terms of the Employment of Educators Act, 1998 (Act 76 of 1998)
- A primary school teacher who teaches or has taught life skills has at least 12 months of experience facilitating a life skill class in Limpopo and Mpumalanga province.
- life skills educational advisors working within the designated circuits within which the selected schools were located.

Other teachers with less experience, not recognized as teachers in EEA (Act 76 of 1998) and life skills educational advisors not working in the selected communities were excluded from the study.

Data collection

The researcher used semi-structured interviews among primary school teachers and life skills educational advisors. The researcher opted for the semi-structured interviews among teachers and life skills educational advisors because this data collection method is ideal when you want to explore deeply the perceptions or views of a phenomenon [52]. The researcher sought to gather perceptions of primary school teachers and life skills educational advisors regarding the need for the inclusion of epilepsy in life skills education and the possible key content that can be included. In a semi-structured interview, the interviewer does not strictly follow a set of questions and as opposed to straightforward questions and answers, the interviewer will ask more open-ended questions to allow for discussion with the interviewee. However, the semi-structured interview guide assists in reminding the interviewer the central questions. The interviews were guided by semi-structured interview guides (Annexure F_1) to facilitate the discussion and the two main questions are:

- *What are your perceptions regarding the need for including epilepsy in life skills education?*
- *What is the possible key epilepsy life skills education content that can be included in primary level from grade to grade?*
- *What kind of teaching method can be used in teaching epilepsy in life skills education?*

All the interviews were audio-recorded with permission from the participating teachers and life skills educational advisors. Continuous collection of the field notes was maintained throughout the interview**.**

Data analysis

This study used ATLAS.ti for data analysis and followed the basic notice-collect-think (NCT) analysis steps. Furthermore, the basic steps enabled the researcher to work systematically instead of declaring the software to be the method itself [53]. The researcher started by noticing aspects of the data that lead to an idea for a label and begin to collect what is noticed in the form of codes [53]. This coding was divided into descriptive-level and conceptual-level analysis.

Descriptive-level analysis

This level of analysis comprised two stages, namely first stage coding and second stage coding.

- **First-stage coding**

- The researcher started by reading the interview transcripts and field notes, followed by noticing patterns in the data. Then, the notes were written, segments were marked, and the first preliminary codes were attached, which could be either descriptive or already conceptual [53]. This first coding phase ended when the researcher no longer noticed anything new, and no more codes could be added. At this point, the researcher could only apply existing codes [53]. The researcher then looked for code labels that had been used only a few times, as these codes were more likely to be descriptive, referring to specific data segments without the ability to be connected. According to Friese [53], such codes were candidates for closer examination, either to merge them with similar codes under a higher-order conceptual label or to evaluate whether they could be grouped under a common category level. This process aimed to develop subcategories and categories and develop them conceptually into themes [53].

- **Second-stage coding**

According to Friese [53], the second phase of coding serves as a way to validate the code list. If the code list is developed usefully, not many new codes can be added at this stage. Therefore, the data will be ready for the next level of analysis.

Conceptual-level analysis

According to Friese [53], at this stage, the researchers will then link data using the network views function, exploring the already developed ideas further from the first stage coding and integrating all findings in writing and graphical representations. Thus, categories and themes will be developed.

Stage 2: Qualitative study

Study design

This second stage of the proposed study was an exploratory-descriptive study exploring primary school learners' perceptions regarding the need to include epilepsy in life skills education. The description of the exploratory-descriptive studies has already been outlined in stage 1.

Population

For the second stage of this study, primary school learners were the target population. Primary school learners in Limpopo and Mpumalanga who are in grade 4 to grade 7 were targeted for possible inclusion in the study.

Sampling

Sampling technique

This study employed a non-probability purposive sampling method to purposely select primary school learners from grade 4 to grade 7 to participate in the study with the judgement that these groups of primary school learners at this stage have a better understanding of the need for education on epilepsy. Sampling techniques have already been defined in stage 1.

Sample size

The researcher intended to conduct a focus group discussion at the primary schools in selected rural communities in Mpumalanga and Limpopo provinces. The researcher intended to conduct six focus groups, with three in each province. The number of participants in each focus group would have depended on the number of learners available at school who met the inclusion criteria. However, the target was to have 8 to 12 participants per focus group at a time, and the number of sessions would have depended on data saturation. It was believed that learners participated more when they were in groups, hence focus group discussions(FDG) was going to be used to collect data.

Inclusion and exclusion criteria

The researcher sampled only learners that meet the following criteria:

- A primary school learner who is in grade 4 to grade 7.
- Primary school learners in Limpopo and Mpumalanga province.

Other learners who are not in grade 4 to grade 7 and not residing in the selected communities were excluded from the study.

Data collection

The researcher used FGD to collect data among Primary School learners. The researcher opted for the focus group discussions because this data collection method was ideal when eliciting various perspectives on a defined topic [52]. The researcher sought to gather perceptions/views of primary school learners regarding the need for the inclusion of epilepsy

in life skills education and the possible key content that could be included. During the FGD, there was an allocated break time and games in between to keep the learners interested in participating and to refresh their memories. The focus groups were guided by semi-structured FGD guides (Annexure F_2) to facilitate the discussion, and the two main questions were:

- *What are your perceptions/views regarding the need for including Epilepsy in life skills education?*
- *What are the important life skills elements of Epilepsy that you would like to learn?*

All the FGD were audio-recorded with permission from the participating teachers. Continuous collection of field notes was maintained throughout the FGD.

Data analysis

The second stage utilised the data analysis that was discussed in stage 1 (see stage 1 data analysis).

Measures to ensure trustworthiness

Trustworthiness in qualitative research is achieved by enhancing credibility, dependability, conformability, and transferability [54].

Credibility

The credibility of the study was enhanced by spending more time with participants in focus group discussions until data saturation was reached. The audio-recorded interviews were transcribed and interpreted, and shared with participants to validate if their experiences were competently and accurately captured.

Dependability

Dependability was enhanced by maintaining an audit trail, keeping all copies of notes, transcribed and recorded data for future use. Participants were provided with researchers' personal and academic information for contact or clarification.

Confirmability

To ensure confirmability, promoters reviewed the research study, confirming that the researcher reported correct information based on the collected data. The researcher assured that the study was confirmable by having another professional (independent co-coder) in their field analyse the data collected and compare the findings, which yielded similar results.

Transferability

To ensure transferability, biographical information was obtained, and a dense description of the research methodology and findings was provided. Participants' background information was also densely described to ensure transferability. The context and setting of the study were described so that others could gauge the transferability of the findings.

Phase 2: Conceptualisation of findings into a conceptual framework

In this phase, the conceptualisation of the phase 2 findings into the life skill approach model was presented to develop the conceptual framework that would guide the development of the epilepsy life skill guidelines.

Phase 3: Development and validation of the epilepsy life skill guidelines

The development and validation of the epilepsy life skill guidelines adapted the World Health Organization's globally accepted guidelines development model [55] and followed the following process:

- Establish the guidelines topic.
- Provide/justify the need for the guidelines.
- Review existing life skills guidelines.
- Form the epilepsy life skills guidelines steering group (includes *primary school teachers, life skills educational advisors, school governing body representatives, health care professionals and health promotion officers*)
- Establish the scope of the epilepsy life skills guidelines.
- Declaration and conflict of interest among potential Steering group members
- Formulate key epilepsy life skills guidelines questions in PICO format.
- Perform systematic reviews of the evidence for each key question formulated.
- Evaluate the quality of the evidence for each important outcome, using the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) framework as appropriate.
- Formulate recommendations using the GRADE framework.
- Draft the epilepsy life skills guidelines document.
- Conduct external peer review (validation)
- Finalize the epilepsy life skills guidelines document.
- Review and approve the final epilepsy life skills guidelines.

Discussion

To the best of our knowledge, epilepsy life skills guidelines for primary school learners have not been developed anywhere globally. Education regarding Epilepsy is very prominent because it has the potential of decreasing stigma and misconceptions regarding Epilepsy.

Kaddumukasa et al. [56], Hermann et al. [3] and Musekwa et al. [8], in their studies, also supported that when epilepsy education is strengthened, there is a reduction of stigma and misconceptions around it. Hashemi et al. [57] also emphasized that it is of great importance when most people are knowledgeable about Epilepsy because, through the knowledge, they develop skills and are able to know how to manage an individual with an epileptic attack.

The current study aimed to develop an epilepsy life skills guideline for primary learners in Limpopo and Mpumalanga Province. It is believed that equipping individuals with knowledge regarding a specific phenomenon may build a positive attitude towards that phenomenon, especially at a younger age. Therefore, it is believed that when learners are educated about Epilepsy at a younger age may reduce stigma and misconception towards epilepsy. Epilepsy life skills education will also help PLWE to have good health-seeking behaviour Keerthana et al. [58]; Narita et al. [59]; Varghese et al. [60]. This is supported by Lewis et al. [61], who reported that increasing knowledge effectively improves self-care. Molla et al. [62] emphasized that poor understanding and unfavourable knowledge contribute to poor health-seeking behaviour. This means that it is essential to educate learners at a younger age to promote positive attitudes and values towards Epilepsy, thus decreasing misconceptions and stigma. Furthermore, through Epilepsy education, living skills with PLWE will be empowered, helping people to know how to react when seizures occur and treat PLWE.

Abbreviations

PLWE: People Living with Epilepsy; WHO: World Health Organization; FGD: Focus Group Discussion; EEA: Employment Equity Act; NCT: Notice-Collect-Think analysis

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Not applicable.

Authors' contributions

TGM is a PhD in Nursing candidate at the University of Venda. The author conceptualized the protocol as partial fulfilment of the PhD requirements. RTL is the Supervisor of these PhD studies, while MSM is a co-supervisor, and ML is an umbrella project leader. The three have contributed by supervising the PhD student in conceptualizing and preparing. All authors read and approved the final manuscript.

Authors' information

TGM is a PhD in Nursing candidate at the University of Venda in South Africa and an assistant study site coordinator for the VHEMBE Study under the Department of Public Health at the University of Pretoria, South Africa. RTL is a Research Professor at the Faculty of Health

Sciences at the University of Venda in Thohoyandou in South Africa. MSM is a Professor in the Department of Advanced Nursing Science under the Faculty of Health Sciences at the University of Venda in Thohoyandou in South Africa. LM is an Associate Professor in the Department of Public Health under the Faculty of Health Sciences at the University of Venda in Thohoyandou in South Africa and the PI for the GladAfrica Epilepsy Research Project that this study protocol falls under.

Funding

The research was funded by GladAfrica Epilepsy Research Project (GERP) and SAMRC. The funder paid for tuition fees related to this PhD study. The funder also provided resources to cover data collection, analysis, and remuneration of the data collectors who assisted the principal investigator TGM. Researchers wrote and submitted six-monthly reports to appraise the funder of progress. The funder's role was to provide resources to carry out the proposed project successfully.

Availability of data and materials

Not applicable.

Ethics approval and consent to participate.

Ethical clearance was sought from the University of Venda's Ethics Clearance Committee (SHS/19/PH/37/2101). Permission to conduct the study was also sought from the Provincial Department of Education of Mpumalanga and Limpopo provinces. Permission to conduct the study in the specific study sites within each province was sought from the circuits and principals of the selected primary schools. Written consent was sought from all participants. Since data was also collected from primary school children (under the age of 18), written "consent" was sought from their parents/legal guardians, and the primary school children themselves "assented" to be part of the study. Information sheets and assent forms were provided for participants to read and sign if they agreed to be part of the study.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

Author Details

1 Thendo Gertie Makhado, PhD in Nursing Candidate at the Department of Advanced Nursing Sciences, Faculty of Health Sciences, University of Venda, Thohoyandou, South Africa.

2 Rachel Tsakani Lebese, Research Professor in the Research Office, Faculty of Health Sciences, University of Venda, Thohoyandou, South Africa.

3 Maria Sonto Maputle, Professor in the Department of Advanced Nursing Sciences, Faculty of Health Sciences, University of Venda, Thohoyandou, South Africa.

4 Lufuno Makhado, Associate Professor in the Department of Public Health, Faculty of Health Sciences, University of Venda, South Africa

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Section B: **Papers/Articles**

ARTICLE 1

The title of this article is “Perceptions of Teachers Regarding the Inclusion of Epilepsy Education in Life Skills for Primary Learners and Teachers in Limpopo and Mpumalanga Provinces”. It explores the views and perspectives of teachers on the importance of incorporating epilepsy education into life skills curriculum. The research question addressed in this study is twofold: Firstly, it investigates the perceptions and views of teachers regarding the need for including epilepsy education in life skills education. Secondly, it aims to identify potential key content related to epilepsy that can be integrated into the primary school level curriculum, spanning from grade to grade. By examining the insights and opinions of teachers from Limpopo and Mpumalanga Provinces, this article sheds light on the significance of epilepsy education and provides valuable input for the development of comprehensive life skills programs for primary learners and teachers.

PERCEPTIONS OF TEACHERS REGARDING THE INCLUSION OF EPILEPSY EDUCATION IN LIFE SKILLS FOR PRIMARY LEARNERS AND TEACHERS IN LIMPOPO AND MPUMALANGA PROVINCES (SOUTH AFRICA)

Submitted to Journal as:

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(See **Annexure I_1** for Author Guidelines)

Corresponding Author: Thendo Gertie Makhado, Email: Gertie.makhado@univen.ac.za

ABSTRACT

Background: Epilepsy is a frequent neurological condition with complicated effects, and it is characterized by seizures that can even last for two minutes. This study aims to determine the perceptions of teachers regarding epilepsy education being included in life skills education with the perception that teachers spend a great deal of time with school learners.

Materials and methods: The study employed an exploratory-descriptive design to explore primary school teachers' perceptions regarding the need to include epilepsy in life skills education. This study was conducted in Limpopo and Mpumalanga Provinces in South Africa. Data were collected from 20 primary school teachers in Limpopo and Mpumalanga using semi-structured interviews. Only primary school teachers who teach life skills were interviewed to reach data saturation.

Results: The participants in this study revealed their knowledge regarding epilepsy and mentioned that epilepsy is a disease associated with falling, shivering movements/seizures, releasing saliva in a bubble foam, and being unconscious.

Conclusion: The findings of this study revealed that the inclusion of epilepsy in life skills education will therefore enhance the knowledge and understanding of epilepsy through educating the aspects that have been suggested by the participant

Keywords: Epilepsy, Life skills education, Primary school teacher, learners

INTRODUCTION

Epilepsy is a frequent neurological condition with complicated effects, and it is characterized by seizures that can even last for two minutes [1]. There is a high prevalence of epilepsy in sub-Saharan low-income and lower-middle-income countries. About 90% of people living with epilepsy live in sub-Saharan Africa; among the 90%, half are children [2]. Challenges with diagnosing and managing epilepsy in African countries remain a big challenge, increasing the comorbidities associated with epilepsy in children [2]. The co-existing medical disorders afflict children with epilepsy due to seizures can seriously impact their physical, psychological, and social well-being. Less is published regarding epilepsy education, and Poor education can cause despair, exploitation, poor health-seeking behavior, and unemployment [3]. This means that the lives of PLWE, their parents and caregivers, and community members are impacted by a lack of epilepsy education [3]. PLWEs are affected physically, emotionally, and socially because this condition is mainly misunderstood. Most people in society have little knowledge regarding epilepsy; therefore, they see epilepsy as seizures only, not considering the aftermath of attacks which can be depression, social anxiety, social isolation, and memory loss [4]. Depression, social isolation, and social anxiety are most common in children with epilepsy due to a lack of knowledge regarding the condition and due to stigma surrounding the condition. According to Yeni et al. [5], insufficient knowledge regarding epilepsy results in a negative attitude of people toward PLWE. PLWEs are discriminated against and isolated because of the conditions' misconceptions. Some of the misconceptions that have been revealed in different studies are that epilepsy is witchcraft or a demonic disease that is contagious [6,7,8]

There is a high prevalence of learners from schools, and a high number of dropouts are those learners living with epilepsy. According to Syvertsen et al. [9], most learners living with epilepsy dropped out of school because of being isolated and discriminated against due to misconceptions and stigma that surround epilepsy. Therefore, this means that knowledge regarding epilepsy is of great importance to decrease the misconceptions and myths that are associated with it [10]. According to popular belief, people have a more favourable view toward a particular phenomenon the more knowledge they have about it [11]. Furthermore, when individuals are informed about epilepsy, they may have a positive attitude toward it. This study aims to find out the perceptions of teachers regarding the inclusion of epilepsy education in life skills education with the perception that teachers are the ones that spend much time with the learners at school. Based on PLWE, students, teachers, community members, the department of education and the body of knowledge, this study's significance will be determined.

METHODS

Study design

The study employed an exploratory-descriptive design to explore primary school teachers' perceptions regarding the need to include epilepsy in life skills education. According to Polit et al. [2], exploratory-descriptive studies are used to shed light on how a phenomenon manifests and can be particularly useful for uncovering the true nature of little-known phenomena.

Study setting

This study was conducted in Limpopo and Mpumalanga Provinces, South Africa. Limpopo province is situated in the far north of South Africa, bordering Zimbabwe, Botswana, and Mozambique, while Mpumalanga is situated in the east of South Africa, bordering Swaziland and Mozambique. There is the proximity between the two provinces. The researchers chose to focus on these two provinces since they contain diverse population groups. The two provinces are also geographically and culturally connected, accommodating the most diverse cultures from other South African Provinces.

Limpopo and Mpumalanga provinces are populated and characterised by diverse, multicultural groups. Thus, mostly Pedi, Zulu, Swati, Ndebele, Venda and Tsonga are within Limpopo province, while Mpumalanga province has a vast mixture of Tsonga, Ndebele and Swati cultures.

Population

Primary school teachers were the target population for possible inclusion. Teachers are the people who help learners acquire knowledge and competence, so they can tell if the inclusion of epilepsy in life skills education for primary learners is necessary.

Sampling

Sampling of the provinces and rural communities

Purposive sampling was used to select the villages based on cultural diversity, and rurality, and the study is part of the GladAfrica Epilepsy Research Project (GERP), thus, operating within the already selected rural communities in Limpopo and Mpumalanga Provinces. For Limpopo Province, the selected rural communities include Malavuwe/Nweli (VhaVenda), Mtititi (VaTsonga), Bochum and Medingeni (Modjadjiskloof) (Pedis). For Mpumalanga Province, the selected rural communities include Clara and Acornhoek (VaTsonga, Jerusalem (Swati) and Kwaggafontein (Ndebele)

Sampling of the schools

All primary schools that were in the selected rural communities of Limpopo and Mpumalanga province of South Africa were purposely sampled.

Sampling for primary school teachers

This study employed a non-probability purposive sampling method to purposely select primary school teachers who participated in the study with the judgment that the primary school teachers have a better understanding of the need for epilepsy life skills education**.** Primary school teachers who teach life skills were purposely sampled to participate in the study.

Inclusion and exclusion criteria

The researcher sampled only teachers that meet the following criteria:

- A qualified teacher that is recognised in terms of the Employment of Educators Act, 1998 (Act 76 of 1998);
- A primary school teacher who teaches or has taught life skills and has at least 12 months of experience in facilitating life skills class; and
- Primary school teachers in Limpopo and Mpumalanga province

Sample size

According to Creswell [13], it is crucial to consider sample size during sampling to avoid the catastrophe of discovering that the sample is too small during data analysis. Therefore, the researchers sampled 20 primary school teachers in this study, which was determined by data saturation.

Data collection

Data were collected from 20 primary school teachers in primary schools in Limpopo and Mpumalanga using individual interviews. Only teachers who teach life skills in primary schools were interviewed to reach data saturation. The interviews were guided by semi-structured interview guides to facilitate the discussion, and the main central questions were:

- *What do you know about epilepsy?*
- *What are your perceptions regarding the need to include epilepsy in life skills education?*
- *What is the possible key epilepsy life skills education content that can be included in the primary level from grade to grade?*

- *What kind of teaching method can be used in teaching epilepsy in life skills education?*

With the consent of the participating teachers, all the interviews were audio recorded. Discussions were made more in-depth through paraphrasing and inquisitive follow-ups. In order to help the researcher, grasp what participants were saying, field notes and observations were continuously taken throughout the interview.

Data analysis

This study used ATLAS.ti for data analysis and followed the basic steps of notice-collect-think (NCT) analysis. The audio-recorded interviews were transcribed verbatim in Tshivenda, Swati, and Xitsonga and then later translated to English by language experts. In the analytical technique, comparable codes were grouped together and given different colors to make theme comparisons simple. Themes were created by collecting related ideas.

Measures to ensure trustworthiness

Trustworthiness in qualitative research is achieved by enhancing Credibility, Dependability, Conformability, and transferability [12]. The study's credibility was enhanced by spending more time with participants in the interviews until data saturation was reached. The researchers ensured that the study is confirmable by having another professional (independent co-coder) in their field analysed the data collected and compare the findings and consensus. The biographical information was obtained to ensure transferability, and a detailed explanation of the research design and findings was provided. Other researchers assessed the study's setting and environment to gauge how applicable the findings were.

Ethical considerations

The University of Venda Human and Clinical Trial Research Ethics Committee provided ethical permission. SHS/20/PSYCH/12/2710 is the clearance number for research ethics. All those who accepted to participate in the study gave written informed consent after the researchers explained the study to them. The participants gave their consent for the interviews to be recorded.

RESULTS

Demographic characteristics

Twenty teachers from selected primary schools in Limpopo and Mpumalanga were interviewed. Eighteen of the twenty teachers were female, and two were male. The interviewees' years of teaching experience ranged from five to twenty-six years. Table 1 shows the demographic characteristics of teachers.

Table 1: Demographic characteristics

DEMOGRAPHIC CHARACTERISTICS		
Males	**Females**	**Years of experience**
	3	0-5 years
1	3	6-10years
	3	11-15 years
1	4	16-20years
	4	21-25years
	1	26-30years

Themes and sub-themes developed from the data analysis are used to present the study's findings (Table 2). A list of the sub-themes for each theme is provided in the description.

Table 2: Theme and sub-themes

THEMES	SUB-THEMES
1. Participants' knowledge about epilepsy	1.1. Knowledge regarding causes, 1.2. knowledge regarding myth, 1.3. knowledge regarding precautional measures 1.4. knowledge regarding dangers associated with epilepsy, 1.5. Knowledge of reading the types of epilepsy
2. Participants' perspectives regarding the Importance of epilepsy inclusion in life skills education	2.1. Importance of epilepsy education to learners 2.2. Importance of epilepsy education to teachers 2.3. Importance of epilepsy education to family and community
3. Participants' suggested method of teaching epilepsy in life skills education	3.1. Awareness campaigns as a method of teaching 3.2. Games and demonstration as a method of teaching 3.3. The use of pictures, pamphlets, and books. 3.4. Discussion as a method of teaching
4. Participants' perspectives regarding information to be included in the epilepsy life skills program	4.1. Information regarding the general overview of epilepsy 4.2. Information regarding the diet and self-care activities 4.3. Information on management of epilepsy

Theme 1: Participants' knowledge about epilepsy

The participants in this study revealed their knowledge regarding epilepsy and mentioned that epilepsy is a disease associated with falling, shivering movements/seizures, releasing saliva in a bubble foam, and being unconscious. They further described that an epileptic attack can occur at anytime, anywhere. This study revealed that PLWE has a dysfunctional state of mind because of falling, shivering movements/seizures, and unconsciousness during the attack. Participants also indicated that epilepsy is a disorder that occurs at any age though it is more common in children. Therefore, this study revealed that participants have insufficient knowledge regarding epilepsy; however, certain aspects show little understanding.

The following are one of the participants' narrative:

'***I know that a person who has epilepsy often has seizures such as fainting or losing consciousness; afterward, they start releasing saliva in bubble form and start rolling their eyes……..!! mostly yes…. than adults'*** (P13 F, 45yrs, 15yrs teaching experience). From this theme, the following sub-themes emerged: knowledge regarding Causes, knowledge regarding myth, knowledge regarding precautional measures, knowledge regarding dangers associated with epilepsy, and knowledge of reading the types of epilepsy.

Sub-theme 1.1. Knowledge regarding myth as causes of epilepsy.

There are several myths that have been revealed in this study that is said to induce or cause epilepsy. Participants expressed that epilepsy is an airborne disease and usually occurs to PLWE when the moon is half. Some of the participants indicated witchcraft as the cause of the disease.

Below is the narrative

'aaah… as I have said, I know epilepsy to be a disease of falling. A person with epilepsy even their state of mind isn't fully functional. Sometimes they do well and sometimes they do not. Eeehhh sometimes in our culture we tend to say if the moon Is half an epileptic person will tend to be unwell'. (P2F,40yrs, 10 years of teaching experience)

Sub-theme 1.2. Knowledge regarding precautional measures and dangers associated with epilepsy

There are several precautional measures that the participants in this study revealed as a must-follow which included that PLWE is not supposed to sit next to the fire or better still PLWE are not supposed to spend most of the time alone and they should have a caretaker.

The following narrative emerged

''It is dangerous eish!!! you know, because when it starts to attack you find that the person has no one near him when he is near the fire he burns because when it starts, he is not in himself, he loses his mind, when it ends, he does not remember anything what was happening and how''. (P6, M, 39yrs, 9 years teaching experience)

Sub-theme 1.3. Knowledge of regarding the types of epilepsy

The last sub-theme that emerged under the participants' knowledge regarding epilepsy was knowledge regarding the types of epilepsy. Participant's data revealed that there is a type of epilepsy in which when PLWE is attacked, will just fall into a deep sleep and that when that person wakes up, is not aware of anything happening.

This was supported by the following narrative from participants:

'Epilepsy is severe in a way that it attacks a person unexpectedly, the person urinates or even worse releases faeces. The second type can occur when one is seated, and the person decides to stand up and start walking or even worse start pulling furniture and talking. The last one that I know, the person just falls into a deep sleep and when the person wakes up, he/she is clueless about what happened''. (P15, F, 53yrs, 26 years teaching experience)

Theme 2: Participants' perspectives regarding the importance of epilepsy inclusion in life skills education

The second theme that emerged was the participants' perspectives regarding the importance of epilepsy inclusion in life skills education. It was observed that epilepsy inclusion in life skills education is of great importance in different groups of people which includes learners, teachers and family, and the community at large.

Below is the narrative of the participants:

"It will benefit everyone, eeh!!! anyone will benefit because we find that here at schools' teachers will also learn and some other learners at home they do have ehhh!!!!, what can I say? They might have anyone who has epilepsy, if they learn at school, they will assist the one at home with the information they get or got at school". (P2, F, 40yrs, 10 years teaching experience).

From this theme, the following sub-themes emerged: the importance of epilepsy education to learners, the importance of epilepsy education to teachers, and the importance of epilepsy education to family and community.

Sub-theme 2.1. Importance of epilepsy education to learners

It was observed that learners are going to benefit from this epilepsy education because they will have skills on how to help PLWE when they have been attacked by seizures or have an epileptic episode in the absence of teachers at school.

Below is the narrative from participant:

''***It is very important one learner might be having epilepsy and other learners will start laughing, bullying and name calling the other learner who suffers from epilepsy!!!!!they will understand that one does not choose to have it''***. (P15, F, 53yrs, 26 years teaching experience)

Sub-theme 2.2. Importance of epilepsy education to teachers

Participants revealed that if teachers are also trained about epilepsy, it will be so much easier to disseminate the knowledge to learners. Furthermore, it was explained that teachers would also have confidence when it comes to handling and even taking care of PLWE in the class because they will have knowledge regarding epilepsy.

Below is the narrative from participant:

"Yes!!! it is important because the child is with the educator more than 50% of their time the child is with the educator. So the educator must know well about this diseases" (P 2, F, 40yrs, 10 years teaching experience)

1.1. Importance of epilepsy education to family and community

The findings of the study indicated that teaching learners' epilepsy in life skills will be a great benefit to the family and the community at large because it is believed that the identical learners that are taught at school will be able to assist PLWE at home or even in the community with the knowledge that they acquired from school. This means that because learners are also part of the community, they will be able to disseminate the epilepsy knowledge to other community members, thus, reducing stigmatization.

Below is the narratives from the participant.

'***Because the child will be able to know what causes epilepsy and if someone has it at home they will explain it to you because they will be knowledgeable.*** (P10, F, 37yrs, 10 years teaching experience)

Theme 3: Participants' suggested method of teaching epilepsy in life skills education

For learners to learn effectively about epilepsy in life skills education, participants revealed different methods of teaching can be utilized. The study of these findings revealed that it's better to use methods that are effective for children so that they will be to recall what has been taught.

Belowis the narrative from the participant.

''***It's not just a single method there has to be telling, question and answer, and discovery. !!!!!class with other learners''.*** (P19, F, 40 years, 12yrs teaching experience). From this theme, the following sub-themes emerged Awareness campaigns as a method of teaching, Discussion as a method of teaching, Practical examples of Acting as a method of teaching, Exposure of learners to facilities with PLWE or inviting health practitioners.

Sub-theme 3.1. Awareness campaigns as a method of teaching

Results from this study revealed that through the awareness campaigns a lot can be learned, and it can help in changing the behaviours of learners towards PLWE. This means that through these awareness campaigns there will be a reduction of stigma.

Below is the narrative from participant:

"***To do epilepsy awareness so people can know, do epilepsy campaigns. And maybe get epileptic people to teach and educate on it"*** (P1, F, 30yrs, 5 years teaching experience)

Sub-theme 3.2. Games and Demonstration as a method of teaching

The findings of this study indicated that the best method of teaching primary learners to learn more about epilepsy and be able to remember it is through demonstration and playing games.

These are some of the narratives from the participants:

"We can use a doll or a human being when demonstrating how to help a person under the attack of epilepsy. Learners should also be given the chance to do it practically on the body of a human". (P14, F, (P14, F, 45yrs, 10 years teaching experience)

"If there were videos of children with epilepsy how they do it so they can see that the disease is serious how it is being treated doesn't need to be left alone videos I see because they can help us a lot" (P11, F, 43yrs, 17 years teaching experience)

Sub-theme 3.3. The use of pictures, pamphlets, and books.

Participants in this study revealed that it is very much effective when teaching children of a younger age using pictures because children love more of picture learning more than theory learning.

Below is the narrative from participant:

''To younger children, we should use the methods of pictures, the pictures of people with epilepsy can be put into flashcards!!!!. explain to the learners about the pictures''. (P15, F, 53yrs, 26 years teaching experience)

Sub-theme 3.3: Discussion as a method of teaching

The other method of teaching that was suggested by the participants to be effective was the discussion method of teaching wherein it was explained that if there can be an engagement of learners through a discussion about topics related to epilepsy by asking questions and

answering it will be effective because it will be learner-centered and they will be able to recall what they were discussing about.

These is the narrative from the participant:

‘‘***It’s not just a single method there has to be telling, question and answer, and discovery. On telling the teacher must tell the student which should happen more on the lower grades!!!!!!!!question-and-answer method has to work!!!!!and then discuss it in class with other learners’’.*** (P19, F, 40 years, 12yrs teaching experience)

Sub-theme 3.4. A practical example or Acting as a method of teaching.

It was revealed in this study that educating epilepsy through giving practical examples or acting in a drama where epilepsy is displayed was very effective because learners will be involved and this means they will know about epilepsy and at the same time have skills for managing epilepsy.

Below is the narrative from the participant:

‘‘There should be practical where learners will be able to see what is being done. We can take one learner to demonstrate with the learner and act like they fainted and having seizures and use the learner as an example!!!!work they are still young’’. (P20, F, 47yrs, 21yrs teaching experience).

Sub-theme 3.5: Exposure of learners to facilities with PLWE or inviting health practitioners

The findings of this study also indicated that even exposing learners to the facilities that have PLWE so that they see how they are managed and taken care of can be very assistive and effective as a method of teaching. Furthermore, they explained that even inviting a health practitioner who is an expert can be effective as a method of teaching.

Below is the narrative from the participant:

‘‘Department should allow us to take children to the facilities where people with the disease of epilepsy are so that they can see and how someone is helped how to help them’’. (P8, F, 50yrs, 18yrs teaching experience)

Theme 4: Participants’ perspectives regarding information to be included in the epilepsy life skills program

The last theme that emerged from this study was the participants’ perspectives regarding the information that should be included in the epilepsy life skills program. There are several topics

that the participants emphasized to be included in the life skills program that can be assistive in embedding epilepsy knowledge in learners and teachers as well.

Below is narrative by the participant:

''Learners should know what epilepsy is, what causes epilepsy, and how to help other learners who have epilepsy. Learners should also know which people are more likely to have epilepsy and how to handle those people''. (P15, F, 53yrs, 26 years teaching experience).

From this theme, the following sub-themes emerged. Information regarding the general overview of epilepsy, information regarding the diet and self-care activities, and information regarding the management of epilepsy

Sub-theme 4.1. Information regarding the general overview of epilepsy

The findings of this study revealed that it is important to know from the beginning what epilepsy is which will include the causes of epilepsy, signs, and symptoms, and the referral process of PLWE so that it can be easier to identify if the person is about to have an epileptic attack.

Below is one of the narrative.

"We do introductions, explaining what epilepsy is. Teach on What causes epilepsy, the possible treatment plans even in their households and how to identify a person with epilepsy their signs". (P3, F, 50yrs, 25 years teaching experience).

Sub-theme 4.2. Information regarding the diet and self-care activities

Participants in this study revealed that there should be educated regarding the diet of PLWE and measures of self-care that need to be followed by PLWE to prevent epileptic attacks.

Below are the narratives by participants:

"Maybe the diet, I think they should be taught about the best food that will not cause them to have epilepsy". (P2, F, 40yrs, 10 years teaching experience)

"***Mmmmm..eish!!!! I think it will have to be learners need to take care of themselves***". (P2, F, 40yrs, 10 years teaching experience)

Sub-theme 4.3. Information on management of epilepsy

Most of the participants elaborated that it will be of great importance to learn about how to manage someone with an epileptic attack instead of standing not knowing what to do.

Therefore, participants suggested that in the epilepsy life skills program there should be a topic on how to manage epilepsy.

Below is the narrative from the participant.

''Teachers should be trained on how to help a learner if the symptoms of epilepsy start when the learner is at school and which methods to follow.!!!! we have to know the first thing to do the second thing to do and the third thing to do you have to do all the stages up to the last one''. (P20, F, 47yrs, 21yrs teaching experience).

DISCUSSION

In this study, primary school teachers in the provinces of Mpumalanga and Limpopo were interviewed about their perceptions regarding necessity of teaching life skills lessons about epilepsy**.** The teachers in this study expressed that there is a need of including epilepsy in life skills education because it will assist the learners and teachers in knowing more about epilepsy. Furthermore, the participants showed that since epilepsy is an unpredictable condition that can happen to anyone, at any time, they feel it is important that learners and teachers are educated about it. Through epilepsy education, teachers will acquire skills in identifying a learner with epilepsy, knowledge on how to assist the person with seizures, and again will also have knowledge of the referral process. This was also supported by the study conducted by Makhado et al. [3] stating that including epilepsy in life skills education may enhance the skills of managing PLWE and assist teachers and learners to have a positive attitude toward PLWE. Learners in this context will also have the skills of identifying PLWE and skills on how to take care of a person with seizures. Moreover, it is through the learners that the community will also benefit from the inclusion of epilepsy in life skills because learners will be able to disseminate the knowledge that is taught to their families and community. Makhado et al. [3] emphasized that since learners are also members of the community, they may act as a catalyst for educating and enlightening other community members about epilepsy. There are different aspects of epilepsy that teachers can be trained, educated, or even workshop to be equipped with knowledge regarding epilepsy.

Findings revealed that there are certain aspects of epilepsy that they would like to learn so that they will be more knowledgeable about epilepsy. Teachers reported that they need to be trained specifically on how to identify the learner with epilepsy and how to handle PLWE when they have epileptic seizures. Being trained about this will then assist them to be able to disseminate the knowledge to learners [14,15,16]. Participants in this study also revealed that learners should also be educated regarding the general knowledge about epilepsy which includes the definition of epilepsy, what causes epilepsy, how to assist someone with episodes

of epilepsy, and self-care measures and diet for PLWE [17]. To teach the aspects to be included in epilepsy, certain methods of teaching should be utilized.

The inclusion of epilepsy in life skills education is important to the community as well because when teachers and learners know about epilepsy, they will disseminate their knowledge to the community. However, for learners and teachers to be able to have the ability to disseminate knowledge regarding epilepsy, there are different teaching methods that have been perceived by the participants of this study to be effective. Methods of teaching which is found to be effective in educating epilepsy are found to be a practical method, playing of videos, demonstrations, use of pictures, discussion, and playing an act. According to Kalyani [18] Walan [19]; Feniger-Schaal [20], the most effective method of teaching is Role Play, Puzzles and Games, storytelling, use of video. It is believed that these methods of teaching have the potential to stimulate learning. An effective method of training for teachers was also found to be workshops and making use of practical examples [21,22]

Inclusion of epilepsy in education is of great importance considering that epilepsy is one of the conditions that are less taught in most parts of the world [23,24]. Moreover, there are different misconceptions, myths, and stigma that is associated with epilepsy because of a lack of education about epilepsy [3,25,26]. This means that when learners are taught about epilepsy it will even assist other learners living with epilepsy to have confidence that if they start to have seizures their fellow learners will be able to assist because of the knowledge they have. Moreover, epilepsy education will also assist PLWE because they will not be bullied and laughed at whenever they have an epileptic attack. This concurs with the study conducted by Kelly [27]; Reupert [28]; Al-Ghuraibi [29], which revealed bullying and stigmatization associated with a specific condition are the results of lack of knowledge regarding a particular condition. Educating learners at a younger age can assist in having a better future with decreased misconceptions, stigma, and bullying of other learners at school who have epilepsy.

The findings of this study revealed that the inclusion of epilepsy in life skills education will therefore enhance the knowledge and understanding of epilepsy through educating the aspects that have been suggested by the participants. Furthermore, the inclusion of epilepsy through exploration will promote the positive values and attitude of learners and teachers regarding epilepsy, and lastly, the teachers and learners will be enabled to have skills of how to handle a person with epileptic attacks through the methods of teaching that were recommended by the participants in this study. This aligns well with the framework that is guiding the main study the life skill approach model [3]

CONCLUSION

The study aimed to explore the perceptions of teachers regarding the inclusion of epilepsy education in life skills for primary learners and teachers in Limpopo and Mpumalanga Provinces. Data analysis revealed four themes: Participants' knowledge about epilepsy, Participants' perspectives regarding the Importance of epilepsy inclusion in life skills education, Participants' suggested method of teaching epilepsy in life skills education, Participant perspectives regarding information to be included in the epilepsy life skills program. The findings of this study revealed that the inclusion of epilepsy in life skills education will therefore enhance the knowledge and understanding of epilepsy through educating the aspects that have been suggested by the participants.

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ARTICLE 2

The title of this manuscript is "Inclusion of Epilepsy in Life Skills Education of Primary School Learners: The Perceptions of Life Skills Advisors in Mpumalanga and Limpopo Province". It delves into the perspectives and views of life skills advisors on the necessity of incorporating epilepsy education into the primary school life skills curriculum. The research question that this study aims to answer revolves around two main aspects: Firstly, it explores the perceptions and views of life skills advisors regarding the importance of including epilepsy in life skills education. Secondly, it investigates the potential key content related to epilepsy that can be integrated into the primary level curriculum, spanning from grade to grade. By analysing the insights and opinions of life skills advisors in Mpumalanga and Limpopo Provinces, this article seeks to shed light on the significance of epilepsy education and provide valuable guidance for developing comprehensive life skills programs that address the needs of primary school learners.

INCLUSION OF EPILEPSY IN LIFE SKILLS EDUCATION OF PRIMARY LEARNERS: THE PERCEPTIONS OF LIFE SKILLS ADVISORS IN MPUMALANGA AND LIMPOPO PROVINCE

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(See **Annexure I$_1$** for Author Guidelines)

Corresponding Author: Thendo Gertie Makhado, Email- Gertie.makhado@univen.ac.za

ABSTRACT

Background: The importance of education on epilepsy cannot be overstated, as it plays a crucial role in equipping individuals with the necessary knowledge and skills to effectively manage seizures and combat the stigma and misconceptions associated with epilepsy.

Objective: This study aims to determine the perceptions of Life skills educational advisors regarding the inclusion of epilepsy lessons in life skills education. The study employed an exploratory-descriptive design.

Material and methods: This study was conducted in Limpopo and Mpumalanga Provinces in South Africa. Eight Life skills educational advisors who participated in this study were selected through snowballing sampling techniques, and data was collected using semi-structured interviews until data saturation. Data was analyzed using ATLAS.ti. Four themes emerged from this study which emphasizes the need to include epilepsy in life skills education because the information regarding epilepsy is insufficient.

Results: The themes that emerged were life skills educational advisors' knowledge of epilepsy, the Benefits of including epilepsy in life skills education, Content for epilepsy education, and Methods of teaching epilepsy. Some individuals believe epilepsy is a medical condition whereas others believe that it is a disease caused by witchcraft.

Conclusion: The study concludes that there is a need to include epilepsy in life skills education as it will improve people's knowledge and awareness about the condition.

Keywords: Epilepsy; Life skills education; Life skills educational advisors; learners; Perceptions

INTRODUCTION

Life skills education is vital because it is an approach to behavior change or behavioral development that addresses the individual's knowledge, attitude, and skills [1]. Furthermore, life skill education is crucial because it helps individuals deal with everyday demands and challenges by instilling adaptive and positive behavior toward life challenges [2].

Through life skills education, learners become aware of certain aspects of life, such as communicable and non-communicable diseases, which makes them knowledgeable and have a positive attitude towards people suffering from those diseases and acquire skills to manage them. Different conditions have been included in the life skills curriculum, such as HIV, TB, sexually transmitted infections, etc. Life skills education regarding various diseases has been of the essence because it reduces the stigma and misconceptions surrounding certain conditions [3]. HIV is one of the non-communicable diseases that has been included in the life skills education curriculum. Studies demonstrated a decrease in stigma toward people living with HIV (PLWH) because of their understanding and positive attitudes [3,4,5]. This was further supported by Chory et al, [6], stating that even teachers should be knowledgeable about HIV so that stigma and misconceptions can be reduced because a teacher is a role model to learners and the community. This means that if teachers know about specific conditions, the reduction of stigma and misconception may be eminent, and they may be able to transfer the knowledge to learners and the community [6]. Furthermore, it means that life skills education should be strengthened to address the knowledge, attitude, and skills of learners regarding the specific phenomenon. The inclusion of epilepsy in life skill education could also lead to a reduction of stigma and misconception, given the results relating to other conditions.

Epilepsy is a condition that is characterized by seizures, and given that the name "epilepsy" in Greek means "being seized by forces from without," A study carried out in western countries such as Europe, North/Central/South America, and Australia revealed that there are some misconceptions associated with this illness [7]. Since many misconceptions and social stigmas are associated with epilepsy, adequate knowledge about the condition is crucial and essential. It is believed that if epilepsy can also be introduced to primary life skills education, it may result in learners having knowledge, skills, and positive attitudes toward PLWE at a younger age, thus the reduction of stigma, discrimination, and misconceptions that surrounds the disease in the future [8,9]

Life skills educational advisors work with teachers and other educators to develop, implement, and evaluate the curriculum specifically for life skills education. Epilepsy should also be included in the life skills curriculum to reduce the misconception and stigma surrounding the

condition [10,11]. Epilepsy education may also equip the learners and teachers with the knowledge and skills to assist learners with the condition and develop a positive attitude towards epilepsy. This study aims to explore the perceptions of life skills educational advisors regarding the inclusion of epilepsy content in life skills education with the perception that life skills educational advisors are the ones working together with teachers and other educators to develop, implement, and evaluate the curricula. This study is significant to PLWE, learners, teachers, community members, teachers, the department of education, and the body of knowledge.

METHODS

Study design

The study employed an exploratory-descriptive design. Life skills educational advisors' perceptions regarding the need to include epilepsy in life skills education were explored.

Study setting

The provinces of Limpopo and Mpumalanga in South Africa were the location of this study. While Mpumalanga is located in the east of South Africa and borders Swaziland and Mozambique. Limpopo province is located in the extreme north of South Africa. It borders Zimbabwe, Botswana, and Mozambique. The two provinces are close to one another. Due to the variety of population groupings present in these two provinces, the researchers chose to concentrate on them. Geographically and culturally linked, the two provinces are home to the most varied cultures of all the South African provinces.

Population

The population for this study was Life skills educational advisors, from Limpopo and Mpumalanga provinces. They are responsible for monitoring and developing the curricula. Life skills educational advisers have a greater awareness of the necessity for epilepsy life skills education.

Sampling

Sampling of the provinces and rural communities

This study is a component of the GladAfrica Epilepsy Research Project (GERP); therefore, it was conducted within the already selected rural communities in Limpopo and Mpumalanga. Purposive sampling was employed to choose the villages based on cultural variation. The rural areas chosen in the province of Limpopo include Malavuwe/Nweli (VhaVenda), Mtititi (VaTsonga), Bochum, and Medingeni (Modjadjiskloof) (Pedis). The chosen rural communities

in the province of Mpumalanga are Clara and Acornhoek (VaTsonga), Jerusalem (Swati), and Kwaggafontein (Ndebele).

Sampling for sife skills educational advisors

This study employed snowballing sampling technique to select Life skills educational advisors who participated in the study, considering that life skills educational advisors are more aware of the significance of epilepsy life skills education. The researcher started collecting data from participants at reach and further used the interviewed participants to locate other life skills educational advisors [12]. Life skills advisors who were included in the study were life skills educational advisors working within the designated circuits within which the selected schools are located.

Sample size

In qualitative investigations, the primary goal of sample size is to provide a comprehensive understanding of the phenomenon under study. This was possible in this study through the use of the guiding principle of appropriateness [12]. Therefore, following the principle of appropriateness, the researchers sampled eight life skills educational advisors, which was determined by data saturation.

Data collection

Semi-structured interviews were conducted with the participants who gave written consent to participate in the study [13]. The researcher interviewed each participant at a convenient time for them. Some of the participants were interviewed at their workplaces, whereas some were interviewed telephonically. The interview guide consisted of three broad questions which were:

- *What are your perceptions regarding the need to include epilepsy in life skills education?*
- *What is the possible key epilepsy life skills education content that can be included in the primary level from grade to grade?*
- *What kind of teaching method can be used in teaching epilepsy in life skills education*

The interviews were adaptable and went in the direction that the participants suggested. The researcher made sure that attention was kept on the subject in a non-threatening manner. The information was recorded on audio with the participants permission. Field notes were taken, and observations were made. During the interviews, methods including questioning, clarifying, pondering, and paraphrasing were utilized to encourage participants to speak freely and to improve in-depth explanations of the phenomena. The researcher employed field notes for observations that could not be recorded on audiotapes, such as non-verbal cues, interview

settings, and subjective feelings. At the end of the interview, the participant gave the referrals to the other life skills advisor in the circuits in which the selected schools were located

Pre-test

Pre-testing was carried out to ensure that the main questions were understandable and unambiguous and to assess the study's viability [14]. Furthermore, the pre-test showed whether the study could be carried out.

Data tnalysis

The notice-collect-think (NCT) analytical process was used in this work, and the data was analyzed using ATLAS.ti. Additionally, by following the fundamental stages, the researcher was able to proceed methodically rather than claiming that the software itself was the approach [15]. The themes that arose during data analysis were then finalized. The themes and sub-themes were grouped in columns based on their similarity. The analysis of the raw data was entrusted to an independent coder. The researcher and the independent coder met to discuss their independently identified categories.

Measures to ensure trustworthiness

In qualitative research, trustworthiness is increased through improving dependability, conformability, credibility, and transferability [16]. Spending additional time with participants in focus during in-depth interviews up until data saturation improved the study's credibility. To ensure that the participants' experiences were properly and accurately recorded, the audio-recorded interviews were transcribed, translated, and shared with the participants [17]. Maintaining an audit trail and saving all copies of the researchers' notes, transcripts, and data for later use, as well as giving participants access to the researchers' personal and professional information for contact or explanation at any time, improved dependability. All authors reviewed the research study to guarantee confirmability and that the researcher had presented accurate information based on the data gathered [16]. The researchers made sure that the study is replicable by having a second expert (an independent co-coder) in their field review and contrast the data collected and compare the findings by an independent co-coder and the researcher to reach a consensus regarding the codes independently developed. The biographical data was gathered to ensure transferability, and a thorough explanation of the research design and conclusions was given. To ensure transferability, participants' backgrounds were also thoroughly detailed [17]. To assess the applicability of the findings, other researchers evaluated the study's context and environment.

Ethical considerations

The Department of Basic Education in the provinces of Limpopo and Mpumalanga, districts, circuits, and the principals of the chosen schools all granted the researcher permission to conduct the study after receiving ethical clearance from the University of Venda Human and Clinical Trial Research Ethics Committee (**SHS/19/PH/37/2101**). Before the start of the interview sessions and after each person had received a thorough explanation of the risks and benefits associated with the study endeavor, written informed consent was voluntarily acquired from each participant. Throughout the study, confidentiality and anonymity were upheld. Voluntary participation was ensured.

RESULTS

Demographic characteristics

Eight life skills advisors were interviewed from Limpopo and Mpumalanga provinces. Two males and six females made up the eight life skills educational advisors. The interviewed life skills educational advisors' tenure ranged from six to twenty-five years. The demographics of life skills educational advisors are shown in Table 1.

Table 1: Demographic characteristics

DEMOGRAPHIC CHARACTERISTICS		
Males	**Females**	**Years of experience**
		0-5 years
1		6-10years
	1	11-15 years
1	3	16-20years
	2	21-25years

The study's findings are presented using themes and sub-themes that emerged from the data analysis (Table 2). The description includes a list of each theme's sub-themes.

Table 2: Theme and sub-themes

Themes	Sub-themes
1. Life skills educational advisors' knowledge of epilepsy	1.1 Health-related condition curable condition 1.2 Epilepsy is linked to witchcraft
2. Benefits of including epilepsy in life skills education	2.1 Benefits of epilepsy education for learners 2.2 Benefits of epilepsy education for teachers 2.3 Benefits of epilepsy education for parents and the community
3. Content for epilepsy education	3.1 Overview of epilepsy including definition, causes, signs and symptoms 3.2 Different types of epilepsy 3.3 Basic management of epilepsy
4. Methods of teaching epilepsy in life skills education	4.1 Videos of people living with epilepsy 4.2 Community awareness campaigns 4.3 Use of drama and stories 4.4 Discussions about epilepsy

Theme 1: Life skills educational advisors' knowledge of epilepsy

Participants in this study demonstrated their level of epilepsy knowledge by defining the condition and listing its clinical symptoms. Some of the individuals did, however, admit that witchcraft is what causes this condition. Therefore, despite little understanding of epilepsy as a medical disorder, our study showed that some misconceptions about epilepsy are still prevalent.

The following are some of the narratives:

'What I know it's a health condition, so I don't know how one becomes epileptic but rather, I know is that sometimes they are unconscious and have to sleep for a moment until it is still…. Then until they become okay, I know maybe they have to take medication to control it' **(**P1, M, 6yrs of experience**)**.

"I don't know anything about epilepsy I've just had that there is epilepsy so because in my family there Is no one with epilepsy and I have never seen anyone attacked by epilepsy in my life. But I've heard that it is a disease that has to do more with witchcraft that it affects you when you are bewitched" **(**P2, F, 15yrs of experience**). T**he following sub-themes emerged from this main theme: Health-related curable condition and Epilepsy is linked to witchcraft.

Sub-theme 1.1: Health-related curable condition

Participants in this study revealed that epilepsy is a health-related condition whereby an individual can just fall at any time without an incident and start to have seizures or become unconscious. Furthermore, explained that epilepsy can be cured when treated. Below are some of the narratives from the participants.

'What I can say is it's a part of a health condition or it's a disease which a human being, teacher or learner can fall without any incident or any disease it just falls it's what I know' **(**P4, F, 17yrs of experience**).**

'What I know it's a health condition, so I don't know how one becomes epileptic but rather I know is that sometimes they are unconscious and have to sleep for a moment' **(**P1, M, 6yrs of experience**)**

'Epilepsy is a disease that can be cured or is it a disease that they need to maintain and control. Is it a disease that is curable or controllable' **(**P2, F, 15yrs of experience**)**

Sub-theme 1.2: Epilepsy is linked to witchcraft

Some of the participants interviewed in this study elaborated that epilepsy is not an ordinary disease but it is a condition that is caused by witchcraft. According to some of the interviewed participants, witchcraft is the main cause of epilepsy. This means that an individual with epilepsy has been possessed by evil spirits or has been bewitched. Below are some of the narratives:

'From an African background everybody knows that you have been bewitched, they take you to witch doctors instead of going to hospitals for medication' **(**P1, M, 6yrs of experience**).**

'I know there is epilepsy but the community members take epilepsy as a witchcraft disease when it occurs because they don't hear anything from a person when epilepsy starts, or they didn't hear a child say am not feeling well am having a headache or stomach ache you will find out that they just fall sometimes they fall down sometimes they just fall asleep or they can ask something that you don't know as a different type of epilepsy' (P4, F, 17yrs of experience).

Theme 2: Benefits of including epilepsy in life skills education

The second theme that emerged from the study was the benefits of including epilepsy in life skills education. Participants in this study stated that including epilepsy in life skills education will have various benefits. There are stakeholders that are going to benefit from the inclusion of epilepsy in life skills education, such as learners, teachers, and the community at large. Below is the narrative that support these two.

'***I believe it will help learners because even other learners in the classroom, if there is a learner with the problem of epilepsy they will be guided that if this happens with your friend whether am not in the classroom as the teacher this is what you should do to assist your friend or maybe even if it's outside the class around the school when the other learner is attacked then they will be taught on how to assist the other learner or their friend'*** **(**P2, F, 15yrs of experience**).**

There are three sub-themes that emerged from theme 2 which are Benefits of epilepsy education for learners, Benefits of epilepsy education for teachers, and Benefits of epilepsy education for parents and the community.

Sub-theme 2.1: Benefits of epilepsy education for learners.

The study participants said that learners will be aware and have knowledge of epilepsy and how to manage an epileptic individual which will instil positive attitudes towards PLWE and skills on how to manage someone with epilepsy during epileptic attacks. This means that

instead of laughing at other learners during the epileptic attack they will be able to assist. The following are some of the narratives:

'The learners will know how to support other learners who are suffering from the condition, I think it's very crucial that even learners be taught about that disease so that they can be aware' **(**P5, F, 23yrs of experience**).**

'If there is a learner with the problem of epilepsy they will be guided that if an attack happens to him/her whether am not in the classroom as the teacher this is what you should do to assist your friend or maybe even if it's outside the class around the school when the other learner is attacked then they will be taught on how to assist the other learner or their friend instead of laughing to one another' **(**P2, F, 15yrs of experience**).**

Sub-theme 2.2: Benefits of epilepsy education for teachers

According to the participants in this study, it is very important for teachers to be trained or taught about epilepsy because they are the knowledge bearer, and they are the ones that transfer the knowledge to the learners in the classroom. Therefore, if they are taught about epilepsy they will be able to teach learners as well as assist learners living with epilepsy to be accepted by instilling knowledge, positive attitudes towards epilepsy as well as skills on how to manage PLWE during an epileptic attacks. Below are some of the narratives:

'It can assist them to have knowledge like myself I said if I had knowledge to assist that learner so that even teachers if they have information they will be able to assist the learners in their class and will also be able to teach learners how to assist an epileptic person and the learner will be able to assist others outside the school' **(**P3, M, 20yrs of experience**)**

'I think its very important that it should be included in the curriculum so that when teachers are dealing with learners in classrooms they need to deal with learners in totality and understand challenges and try to address the challenges and they will be able to assist other learners to understand the challenges also' **(**P2, F, 15yrs of experience**).**

Sub-theme 2.3: Benefits of epilepsy education for parents and the community.

In this study, it was revealed that even the parents and community at large will benefit by including epilepsy in life skills education because learners are the members of the community. In other words, teaching learners is teaching the community because the knowledge they will attain, they will be applied in the community where they live in. The following are some of the narratives from the participants:

'The very same children who are at school are the ones who are forming part of the community they take the information back to the community and their parents they tell them what was happening. The parents also learn from their children then it's of the practical importance of teaching the learners so they can take the information back home' **(**P5, F, 23yrs of experience**)**.

'Parents need to know this is how epilepsy happens, this is how you can attend to a child if you discover that your child is epileptic, go to the clinic do one two three you know…. For them to be aware that it's not being bewitched but it's part of some conditions that one can have although I don't know what causes epilepsy' (P1, M, 6yrs of experience)

Theme 3: Content for epilepsy education

Content for epilepsy education was one of the themes that emerged from this study. There are different contents that participants verbalized should be included as the content when teaching epilepsy in life skills. Participants expressed that in the curriculum of epilepsy the content may include crucial basic information to equip learners and teachers with the knowledge of epilepsy to have a positive attitude and skills on how to manage PLWE when they have an epileptic attack and what to expect on PLWE. Three sub-themes emerged from this theme which is an overview of epilepsy including definition, causes, signs, and symptoms, different types of epilepsy, and basic management of epilepsy.

Sub-theme 3.1: Overview of epilepsy including definition, causes, signs and symptoms

There is great importance in including an overview of epilepsy including its definition, causes, signs, and symptoms in life skills education because it is the basics of epilepsy that will build a strong foundation for learning. This means that an individual can confidently expand and start learning more advanced skills after having a foundation based on basic concepts. Below are some of the quotes from participants

'uhm as I said before they should be trained on what is epilepsy, what causes epilepsy, can epilepsy be contagious or it's hereditary all those things'. **(**P3, M, 20yrs of experience**)**

'Teachers should be trained on knowing what epilepsy is, what are the causes of epilepsy and how to help an epileptic person. These are the things that I think they need to know and be able to teach learners and implement it on epileptic people'. **(**P8, F, 16yrs of experience**)**

Sub-theme 3.2: Different types of epilepsy

The other content that participants suggested should be included in the curriculum of epilepsy in life skills education was the types of epilepsy. Further elaborated that knowing the types of epilepsy will assist learners to know what to do in different situations. Below are the narratives from the participants

'***I think being aware of the different kinds of diseases and the precautions and how to take care of people leaving with such diseases how does it affect the ones around the person and also the effect of also the one who is not having that disease all that information can help a lot'.*** (P5, F, 23yrs of experience)

'From grade 4 and above must learn much about the different kinds of epilepsy I don't know much but I know that the is a epilepsy where the learner can fall bite themselves or where they urinate themselves or something like that and there is epilepsy whereby the learner just lose their mind while we are teaching and just stare at you the other one they just fall asleep. So, from grade 4 they must know much about different types of epilepsy' (P4, F, 17yrs of experience)

Sub-theme 3.3: Basic management of epilepsy

Participants' perceptions regarding the content that should be included in the life skills curriculum also included the basic management of epilepsy. Since epilepsy poses a serious threat to the lives of PLWE, it is crucial that everyone possess sufficient knowledge, including understanding the management of epilepsy in case of epileptic attacks of different types of epilepsy. The participant narratives are as follows.

'***Life skills content that is going to be there needs to be including the care that needs to be provided when someone is having seizures, so they need to learn about the symptoms and seizures that they are getting and they also need to know what to do*** (P1, M, 6yrs of experience)

'***They should know how maybe it's the first aid that should be offered on an epileptic learner'*** **(**P1, M, 6yrs of experience**).**

Theme 4: Methods of teaching epilepsy in life skills education

For learners to know best about epilepsy or for learners to acquire knowledge from the content that has been suggested by the participants in this study, there should be taught through different methods of teaching. There are different effective methods of teaching that participants in this study revealed for better understanding of epilepsy. From these themes, the following sub-themes emerged: The use of videos of epileptic people, the use of

community awareness campaigns, the use of drama and stories and use of discussions about epilepsy.

Sub-theme 4.1: The use of videos of people living with epilepsy

The use of videos of people living with epilepsy was one of the effective teaching methods that participants in this study suggested. It was also revealed that learners learn more easily by watching interesting videos therefore, there should be animated videos showing how PLWE are taken care of during epileptic attacks. Participants in this study believe that when children are watching these videos as a way of teaching, they will be able to have skills on how to manage epileptic attacks and won't forget them easily. The following are some of the narratives

'You know now we are in Fourth Industrial Revolution now so there are videos to accommodate the person so that they can see it practically' **(**P1, M, 6yrs of experience**)**

'You can show them the video of epilepsy or a picture of people with epilepsy and aging they must have a clear knowledge about what kind of a disease is what we should include in the foundation phase' (P4, F, 17yrs of experience)

Sub-theme 4.2: The use of community awareness campaigns

Making use of the community awareness campaign was another suggested method of teaching by participants. Below are some of the narratives

'They need to conduct advocacy campaigns even to other parents who are not yet affected so that they understand that you don't apply for this situation it just came and you don't even know how it came so we need to support the families who are already affected' **(**P2, F, 15yrs of experience**).**

'I think they should be trained on what epilepsy see how to treat people with epilepsy and awareness of epilepsy in the community is very important so that majority of the people can have knowledge of this condition **(**P6, F, 20yrs of experience**)**.

Sub-theme 4.3: The use of drama and stories

Participants in this study revealed that if learners are involved in storytelling and acting of drama as a method of teaching they will be able to have knowledge and skills on how to take care of PLWE during the attacks. In other words, involving learners in dramas for epilepsy is an easy method to disseminate knowledge. Below are some of the narratives:

'Dramatization or a story that can assist am talking about the young one, they love pictures and listening to stories I think that can assist' **(**P3, M, 20yrs of experience**)**

'We can use pictures of people with epilepsy and tell them stories of people with epilepsy yea I think pictures and stories will do and making them act the drama that is epilepsy-related will make them not forget because they will be involved' **(**P6, F, 20yrs of experience**)**.

Sub-theme: 4.4: The use of discussions about epilepsy

The last method of teaching that has been suggested by participants in this study was the use of discussion sessions about epilepsy. According to the participants in this study, discussion is very important as a method of teaching because it helps learners to understand a phenomenon better because instead of just receiving knowledge, discussion aids pupils in processing it. Below is the narrative

'I think when there is discussion, it can serve as a method pf teaching whereby I think learners are able to be involved because sometimes when we are using other methods which is one way by teaching learners without them participating learners return back home with the knowledge they came with about epilepsy. Epilepsy being taught at schools does not mean that it's not spoken about at home it might be talked about at home in terms of reality. Question and answer and discussion I think those are the most important methods of teaching learners so that learners can be aware and also be able to share their views' (P8, F, 16yrs of experience)

DISCUSSION

In this study, life skills educational advisers from Mpumalanga and Limpopo provinces were questioned about the significance of teaching primary learners about epilepsy as part of their life skills education. This was done with the perception that since life skills educational advisors are curriculum developers, may have a better understanding of the need for the inclusion of epilepsy within life skills education. Participants in this study revealed that educating epilepsy in life skills at a younger age is very important because this will instil knowledge and understanding while increasing positive attitudes and reducing stigma and misconceptions. There is still unclear information about epilepsy, as some know epilepsy as a medical condition that can be manageable, and others know epilepsy as a sacred disease caused by witchcraft, mystery, possessed by evil spirits or calling from ancestors. The different understanding of epilepsy provides the need to include epilepsy in life skills so that learners, teachers, and community members become knowledgeable about epilepsy and its management thereof. Musekwa et al; Adewumi et al; Murugan et al, [18,19,20] supported that even though some people are aware of epilepsy, not all know and understand it and many still portray negative attitudes, stigma, and misconceptions towards PLWE. This means that it is epilepsy lessons in life skills education that may assist individuals in having a better understanding of epilepsy

and thereafter have a positive attitude toward PLWE [8,9,21,22]. Inclusion of epilepsy in primary school life skills education will benefit different stakeholders.

This study emphasizes that including epilepsy lessons in primary school life skills education will benefit learners, teachers, and the community. Primary school learners and teachers will benefit from the inclusion of epilepsy in life skills education because they will have knowledge and understanding of how to identify a learner with epilepsy and how to attend them during seizures instead of laughing, discriminating and stigmatising them. Furthermore, this will ensure conducive environment for PLWE at school instead of increment of PLWE school dropouts. Studies reported a high dropout rate of learners with epilepsy due to stigma, discrimination, feeling of being left out, and misconceptions [23,24]. Furthermore, it has been revealed that stigma related to epilepsy is caused by a lack of awareness about epilepsy [23,24]. Therefore, there is a need for epilepsy lessons to be included in primary school life skills education to tackle the PLWE dropout rate by reducing stigma.

Epilepsy challenges do not only affect learners with epilepsy at school, PLWE in the community are ignored, stigmatised, and excluded from a range of opportunities, including marriage, education, leadership positions, and property succession [25,26]. This inclusion will help learners, teachers, and community members to acquire the necessary skills required to respond to and manage individuals living with epilepsy during seizures and this will help PLWE to be confident and feel important. According to Kaddumukasa et al [27], the misconceptions and stigma regarding epilepsy can be reduced by instilling epilepsy-related education in individuals. Furthermore, it is through life skills education on epilepsy that an individual can acquire skills for life such as knowledge and understanding, values and attitudes, and skills on how to manage PLWE during seizures [8].

Life skills educational advisors further indicated that there should be specific content that must be presented to meet the goal of equipping primary school learners with life skills, and the life skills curriculum should include information about epilepsy. The content that may be included in life skills education is basic health education about epilepsy such as the definition of epilepsy, signs and symptoms, types of epilepsy, and basic management of epilepsy. A study conducted in China revealed that educating learners with basic health education results in the learners having knowledge and positive behaviours toward a certain disease [28]. Participants in this study also revealed that instilling skills for life in primary learners is not only by including specific content in their life skills program rather it must be strategic.

Life skills educational advisors illustrated that for learners to acquire the skills of life regarding epilepsy, different teaching methods should be utilized and the methods of teaching that may be utilized are the use of videos of epileptic people, the use of drama and stories, and involving

learners in discussions about epilepsy. According to Narita et al and Alamri et al, [29,30], knowledge alone regarding epilepsy might not change people's attitudes toward epilepsy. Furthermore, the results from the study showed that individuals who encountered PLWE were the ones that had a better understanding and positive attitude toward epilepsy [29]. Therefore, it is believed that exposing learners to drama lessons and video lessons will equip learners with skills of life such as values and attitudes rather than only using the traditional method of teaching them to acquire knowledge. Chakraborty et al; Shafer et al, [10,31] support that video lessons, drama lessons, storytelling, and discussions will not only assist learners in having knowledge and understanding, positive values and attitudes but will also equip learners with skills on how to manage individual living with epilepsy during seizures.

Given the findings of this study, there is a need to include epilepsy lessons in life skills education for primary school learners and teachers because through this education the community will be aware of epilepsy and how to attend and manage PLWE. Furthermore, the skills of life that the learners may acquire from epilepsy education may assist them in how to care for their fellow learners thus, reduce the number of PLWE learners dropping out. It is believed that it is through educating learners practically that can reduce the misconceptions and stigma of epilepsy towards fellow learners because learners will be involved during teaching and learning. The findings of this study may assist the Department of Education in promoting inclusive education. Therefore, the rate at which epileptic learners drop out of school because of stigma could be reduced. The Department of Education may also revise the policies to include epilepsy in life skills education for primary learners. Therefore, PLWE, community members, teachers, and learners may be equipped with skills for life which are knowledge and understanding, values and attitudes, and skills on how to manage epilepsy.

CONCLUSION AND RECOMMENDATIONS

The study's goal was to learn how life skills educational advisers in the provinces of Limpopo and Mpumalanga perceive the inclusion of epilepsy lessons in life skills for primary school learners and teachers. Four themes emerged from the study which were Life skills educational advisors' knowledge of epilepsy, the benefits of including epilepsy in life skills education, content for epilepsy education, and methods of teaching epilepsy. This study showed that teaching about epilepsy would improve learners' life skills through knowledge and understanding of epilepsy, values and attitudes, and related response and management skills toward epilepsy through different teaching methods revealed in the study.

Therefore, it is recommended that guidelines be established to make it easier to integrate epilepsy courses into life skills education for primary learners and teachers to better prepare the learners and teachers. Additionally, this recommendation will give learners and teachers

the knowledge and abilities to deal with PLWE during seizures. Because teachers and learners are a member of the community, when they are equipped with epilepsy knowledge and understanding, everyone in the community will benefit, including them.

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ARTICLE 3

The title of this article is "Incorporation of Epilepsy into Life Skills Education: Perceptions of Primary School Learners in Mpumalanga and Limpopo Province—A Qualitative Exploratory Study" focuses on exploring the perceptions and views of primary school learners regarding the necessity of including epilepsy education in life skills curriculum. The research questions addressed in this study are as follows: Firstly, it investigates the perceptions and views of primary school learners concerning the need for including epilepsy education in life skills education. Secondly, it aims to identify the important life skills elements related to epilepsy that the learners would like to learn. By examining the perspectives of primary school learners in Mpumalanga and Limpopo provinces, this article provides valuable insights into the inclusion of epilepsy education in life skills programs, offering guidance on the essential aspects of epilepsy that should be covered to ensure a comprehensive and relevant curriculum for the learners.

INCORPORATION OF EPILEPSY INTO LIFE SKILLS EDUCATION: PERCEPTIONS OF PRIMARY LEANERS IN MPUMALANGA AND LIMPOPO PROVINCE-A QUALITATIVE EXPLORATORY STUDY

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(See **Annexure I$_3$** for Author Guidelines)

Corresponding Author: Thendo Gertie Makhado, Email- Gertie.makhado@univen.ac.za

ABSTRACT

Abstract: Providing education on epilepsy is crucial as it helps individuals acquire the necessary knowledge and skills to effectively manage seizures while also reducing the stigma and misconceptions surrounding the condition. The aim of this research is to examine how learners perceive the integration of epilepsy education into life skills training. A descriptive-exploratory design was utilized for the study. The research took place in the provinces of Limpopo and Mpumalanga, located in South Africa, where primary schools located in chosen rural communities were chosen for the research. Six focus group discussions were conducted with learners in grades 4 to 7 learners aged 9 to 14 years. Each group comprised of six learners, resulting in a total of 36 individuals who satisfied the inclusion criteria. Data was collected from August to November 2022. Semi-structured interviews were utilized to collect data until saturation was reached. The collected data was analysed with the assistance of ATLAS.ti. The study's results underscore the significance of incorporating epilepsy education into life skills curriculum at the primary school level, as revealed by two prominent themes that emerged: firstly, the reasons provided by students for the integration of epilepsy education into life skills training., and secondly, the preferred teaching methodologies for epilepsy education within the life skills curriculum as identified by learners. Trustworthiness and Ethical consideration were ensured. It is recommended that there should be the development of the epilepsy life skills guidelines to enhance the well-being and academic performance of learners with epilepsy in primary schools in Mpumalanga and Limpopo provinces.

Keywords: Learners, life skills, epilepsy, education, inclusion, perceptions

1. INTRODUCTION

Around 50 million people worldwide are thought to have epilepsy, which is a brain condition that is quite common and is defined by the occurrence of seizures [1]. Epileptic seizures can persist for several minutes and are distinguished by sudden falls, blank expressions, or involuntary twitching motions. It has been documented that the highest rate of epilepsy is among children, especially in the first years of life until the age of 10 years [2]. This was further supported by the study conducted by Minardi et al. [3] which revealed that a high incidence of epilepsy occurs at the earlier stages of life, from birth to 12 years. According to Wilmshurst et al. [4], It seems that epilepsy is most prevalent during childhood, specifically in children aged 6 to 12 years residing in rural regions of Kenya, with an incidence rate of 187 per 100,000 per year. The authors also noted that the proportion of epilepsy cases is higher in African children compared to other regions. This is consistent with findings from a study conducted in South Africa, which revealed that epilepsy is more common in Sub-Saharan Africa than in other continents [5]. In that study, Ackermann et al. [5] reported that approximately 51% of children in the study population had epilepsy. Although the prevalence of epilepsy in children varies across different countries and regions, it remains a significant public health concern world-wide. The World Health Organization estimated that approximately 10 million children worldwide have epilepsy, with an incidence rate of 50 per 100,000 children per year [6]. People living with epilepsy (PLWE) worldwide face different challenges because of the nature of the condition. Musekwa et al. [7]; Makhado et al. [8]; Yeni et al. [9], reported that PLWE feels discriminated against and stigmatized, which is mainly caused by misconceptions about epilepsy.

The adverse impacts of stigmatisation and discrimination against people living with epilepsy (PLWE) may consist of exclusion from social circles, reduced self-confidence, deteriorating mental health, reduced quality of life, exacerbation of seizures, a tendency to conceal their condition, and an increased likelihood of non-compliance. [10]. This was supported by World Health Organisation [11], that PLWE may not seek healthcare because of fear of being identified. This means that because epilepsy occurs mostly in the early years of life, children living with epilepsy may suffer the negative effects of stigmatization. These children living with epilepsy are school learners in different schools and may drop out of school to isolate themselves as a result of stigmatisation and discrimination because schools have been recognized as one of the main places of stigmatization [12]. Additionally, research has shown that students with epilepsy are leaving schools because they feel alienated [13]. Furthermore, epilepsy can negatively affect children's quality of life, resulting in social isolation, stigmatization, and psychological distress [9]. Epilepsy can have a significant impact on children's academic performance, quality of life, and social functioning, leading to academic

failure and reduced educational and employment opportunities later in life [14]. Studies have shown that children with epilepsy are at increased risk of academic difficulties, such as lower academic achievement, decreased school attendance, and higher rates of grade retention and dropout [13,15–17].

The main cause of discrimination and stigmatisation of PLWE is the lack of knowledge regarding epilepsy [7,18,19]. Therefore, it is believed that education about epilepsy from the primary school level may decrease this stigma, and perhaps the level at which learners living with epilepsy drop out because of feeling discriminated against may decrease. It is paramount that epilepsy should be taught starting from the primary school level because this is the age at which epilepsy is most prevalent [2]. This study is important because it helps to advance knowledge and understanding in a particular field, and can inform policy and practice. In the case of epilepsy education, there is currently no known study published that focuses on teaching young learners about epilepsy in order to promote positive attitudes towards individuals living with epilepsy, which in turn can reduce stigma. This highlights the need for research in this area. The objective of the present research is to explore how students perceive the integration of epilepsy education into life skills training, which can help inform the development of effective educational programs and policies aimed at reducing stigma and promoting positive attitudes towards people with epilepsy. This underscores the importance of this study in contributing to the existing body of knowledge on epilepsy education and its potential impact on reducing stigma and improving the lives of people with epilepsy.

2. METHODS

2.1. Study design

The study employed a descriptive-exploratory research design to investigate the perceptions of learners on the necessity of integrating epilepsy into life skills education.

2.2. Study setting

The study was conducted in the South African provinces of Mpumalanga and Limpopo, which are located in the eastern and far northern regions of the country, respectively. Mpumalanga shares borders with Swaziland and Mozambique, while Limpopo shares borders with Zimbabwe, Botswana, and Mozambique. Despite the significant geographic distance between the two provinces, the researchers selected them because of the diverse population groups residing in these areas. As they are geographically and culturally related, these provinces have the most varied populations among all the provinces in South Africa. Although there has been an improvement in the accessibility of basic services in Limpopo and Mpumalanga provinces, there are still noticeable differences between urban, peri-urban, and rural areas.

The provinces have predominantly rural areas with limited healthcare services. Javier [20] reported that Mpumalanga province has an unemployment rate of 35.2%, while Limpopo province's unemployment rate is at 30.4%. Overall, both provinces have a predominantly rural population and are characterized by significant disparities in access to healthcare and basic services, which can affect their socioeconomic status. Based on this data, the re-searcher identified this population as a population of interest and will select the study sample from this population.

2.3. Population

The participants of this study were learners from the provinces of Limpopo and Mpumalanga. It is crucial to comprehend the viewpoints of these learners concerning the integration of epilepsy lessons into life skills education since they are the intended beneficiaries of such teaching. The goal of this research is to establish guidelines for incorporating epilepsy into life skills education, hence the perspectives of these students hold significant importance.

2.4. Sampling

2.4.1. Selection of provinces and rural communities

The present research, which forms part of the GladAfrica Epilepsy Research Project (GERP), was conducted in the pre-selected rural regions of Limpopo and Mpumalanga. The settlements were selected using purposive sampling to account for cultural diversity. In the province of Limpopo, rural areas were selected in Malavuwe/Nweli (VhaVenda), Mtititi (VaTsonga), and Bochum (Pedis). Clara and Acornhoek (VaTsonga), Jerusalem (Swati), and Kwaggafontein are the selected rural settlements in the province of Mpumalanga (Ndebele).

2.4.2. Sampling of the schools

The study intentionally selected all public primary schools situated in the chosen rural communities of Limpopo and Mpumalanga province in South Africa. Only schools that agreed to take part in the research were included in the study.

2.4.3. Sampling of learners

The study utilized purposive sampling to choose learners from grades 4 to 7 in public primary schools to participate, based on the judgment that these students have a better comprehension of the necessity of epilepsy education at this stage. The study targeted primary school students in grades 4 to 7, including those with physical disabilities, who attend public schools in the selected communities. The researchers assumed that learners within this age range would have a solid understanding of the study subject, and their ages ranged from 9 to 14 years. This approach aimed to ensure equal opportunities for all students, including those

who repeated classes. However, only learners who provided their consent were considered eligible to participate.

2.4.4. Sample size

According to Botma et al. [21], at least six to eight participants are ideal for a focus group to discourage feelings of overcrowding and promote discussion of differences and similarities. The study involved six focus group discussions held in primary schools located in selected rural communities within Mpumalanga and Limpopo Province. In order to cover all cultural groups, a total of six focus groups were chosen. Each focus group comprised six learners from grades 4 to 7. The total number of learners who participated in this study was 36 and all met the inclusion criteria, and the size was determined by data saturation.

2.5. Pre-test

The purpose of pre-testing was to ensure that the open-ended questions in the study were clear and easily comprehensible and to assess the research's feasibility, as recommended by Hurst [22]. The preliminary testing consisted of multiple stages, which included questioning five primary school students from different communities who were not part of the study to ensure that the questions were comprehensible. The time it took to answer the open-ended questions was observed to determine if it was reasonable, and any challenging or confusing questions or terms were removed from the semi-structured interview guide. Furthermore, the range of responses for each question was evaluated to ensure that it was sufficient and could provide the required information. All questions were confirmed to have been answered, and adjustments were made to any necessary revisions. Any inaccuracies identified in the research process or instrument were corrected before the primary research was conducted.

2.6. Data collection

The researcher chose to conduct focus group discussions with learners from selected rural communities' primary schools located in Mpumalanga and Limpopo Provinces. as it is a suitable method for obtaining multiple perspectives on a specific topic [23]. Data was collected from August to November 2022, and only learners who provided written consent, and whose parents also provided written assent, were included in the study. The focus group discussions were conducted in a quiet, empty classroom provided by the primary schools. During the break time between the focus group discussions, learners were given time to play games to refresh their minds. Prior to the focus group discussions, the researcher engaged in small talks to create a relaxed atmosphere for the participants [21].

The focus group discussions were directed using a semi-structured interview guide that contained sequenced open-ended questions [21]. The participants were informed about the

study's objectives, expectations, and the fact that they could withdraw from the study without any consequences before the discussions commenced. The interviewer presented all the questions in the interview guide, covering various topics such as the learners' views on epilepsy, the significance of integrating epilepsy into life skills education, the crucial life skills aspects related to epilepsy, and the teaching techniques that could be employed while incorporating epilepsy into life skills education. The focus group discussions were flexible and allowed participants to move in the direction that they deemed important. The researcher took precautions to maintain focus on the subject in a non-threatening way, and participants were assured of group privacy. The researcher utilized techniques such as asking, clarifying, contemplating, and paraphrasing to encourage participants to speak freely and provide in-depth descriptions of the phenomenon. Field notes were made for observations that could not be captured on audiotapes, such as non-verbal cues, interview settings, and subjective sensations.

2.7. Data analysis

The researcher employed the notice-collect-think (NCT) analytical process to analyze the data, utilizing the ATLAS.ti software. The software was used as a tool to support the fundamental stages of the analytical process, rather than solely relying on it for analysis [24]. After identifying themes during the analysis, they were finalized and grouped into columns based on their similarity. To ensure the trustworthiness of the analysis, an independent co-coder was responsible for analysing the raw data. The re-searcher and co-coder then engaged in an electronic meeting to compare their independently identified categories.

2.8. Measures to ensure trustworthiness

Ensuring trustworthiness is an essential consideration in qualitative explorational research. The measures to ensure trustworthiness that were followed in the current research were dependability, conformability, credibility, and transferability [25]. To enhance the credibility of the study, the researchers conducted in-depth interviews with participants until they reached data saturation [26]. To ensure dependability in the study, an audit trail was maintained, and all researchers' notes, transcripts, and data were saved for future reference. Moreover, participants were provided with the personal and professional details of the researchers, so that they could contact them if they had any queries or needed further clarification [21].

Confirmability was guaranteed through authors' review of the study to ensure the accuracy of information presented based on collected data. To ensure replicability, a second expert in the same field reviewed and contrasted the data collected, and the researcher and the independent co-coder compared their independently developed codes to reach a consensus, as mentioned by Burns and Grove [25]. By providing a detailed description of the research

design, data collection methods, and data analysis technique, the transferability of the study was ensured [21].

2.9. Ethical considerations

After receiving approval from the Human and Clinical Trial Research Ethics Committee at the University of Venda for ethical considerations (SHS/19/PH/37/2101), the researchers received authorization to undertake the study from the Department of Basic Education in the provinces of Limpopo and Mpumalanga, as well as by the districts, circuits, and principals of the selected schools. Prior to the start of the interview sessions, informed written consent was obtained from the legal guardian/parents of each participant. Participants were provided with detailed information about the possible risks and benefits associated with the study and were asked for their consent before participating in the study. Legal guardians/parents and participants were made aware that they had the right to withdraw from the study at any time without facing any consequences. Throughout the study, anonymity and confidentiality were maintained, and participation was completely voluntary.

3. RESULTS

In this study, two main themes and nine sub-themes were identified.: Learners' reasons for integration of epilepsy education into life skills training and Learners' teaching method recommended for epilepsy in Life skills education. A summary of each theme's sub-themes is included in the description in Table 1.

Table 1 Themes and Subthemes

Theme	Sub-Theme
1. Learners' reasons for the integration of epilepsy education into life skills training.	1.1. Empowering self and others 1.2. Protecting self and others (prevention of epilepsy) 1.3. Learning about the causes, treatment and how to help others with epilepsy 1.4. Learning how to accept others with epilepsy. 1.5. Feeling confident to help others
2. Learners' recommended teaching methods for epilepsy in life skills education	2.1. Visual learning 2.2. Kinesthetic learning 2.3. Learning through practical demonstrations 2.4. Repetitive learning

3.1. Theme 1: Learners' reasons for the integration of epilepsy education into life skills training

The first theme that emerged from this study was the reasons for including epilepsy in life skills education which were given by the participants.

These reasons underscored the importance of incorporating epilepsy into life skills education.

The following sub-themes emerged:

3.1.1. Sub-theme 1.1: empowering self and others

The results of this study revealed that one of the reasons why epilepsy should be included in life skills education is the need to empower self and others. Participants in this study have elaborated that learning about epilepsy at schools during life skills education will help them to be empowered with knowledge and empower others in the community about epilepsy. the following narratives emerged:

'***So that we can know about the illness. And that even at home will be able to teach people about it.'*** (Participant C, Focus group 1)

'Because it might happen in your family and you can be able to tell them that we were taught about this and what it does.' (Participant B, Focus group 2)

'***Because it happens that… Its important because if it happens at home, you'll be able to tell your parents what you were taught and how they can deal with it.'*** (Participant F, Focus group 2)

'***Because if someone has it we will be able to tell because we will have the knowledge that if it happens we will know it is the disease.'*** (Participant D, Focus group 3)

3.1.2. Sub-Theme 1.2: Protecting self and others (prevention of epilepsy)

According to study participants, it is vital to prevent epilepsy since they indicated that when they are informed about the condition, they would be able to know how to do so by safeguarding others as well as themselves. The following narratives emerged from this study:

'So that we can know the causes and how we can protect ourselves from it.' (Participant F, Focus group 1).

'So we can know the causes and what is supposed to be done when someone is in danger.' (Participant A, Focus group 1)

'I would love to know how to prevent it.' (Participant A, Focus group 3)

'We want to know if a person with epilepsy should go to school and play with others.' (Participant F, Focus group 6)

3.1.3. Sub-theme 1.3: learning about the causes, treatment and how to help others with epilepsy

Interviewed participant also stated that the reason they would like epilepsy to be included in life skills education from primary schools is that it will help them to have knowledge regarding the causes, treatment and how to assist others with epilepsy when they have seizures. The quotes that are following emerged:

> ***'Yes it is important so that we know exactly what is the cause of it and how can we assist other people to also have knowledge about it.'*** (Participant A, Focus group 4)
>
> ***'So that when you see someone having a fit in the streets, you're able to assist them.'*** (Participant E, Focus group 1)
>
> ***'In the classroom, it's important because when we're taught about it and our friends have it, we can help them.'*** (Participant C, Focus group 2)
>
> ***'When we are taught about epilepsy our friends that has it will feel safe when we are together because we will know how to care for them.'*** (Participant A, Focus group 6)

3.1.4. Sub-theme 1.4: Learning how to accept others with epilepsy

One of the reasons explored by participants in this study is the capacity to recognize that others have a right to exist as their own distinct individuals. This indicates that participants recognize the importance of being taught epilepsy in life skills since it may enable them to accept these people for who they are. Hereunder are the narratives:

> ***'People need to know what to do when it starts and to know the symptoms and it will decrease discrimination.'*** (Participant E, Focus group 1)

'It means we will grow up knowing what it is, how to assist a person with epilepsy. so we can make friends and always accommodate them because we know.' (Participant E, Focus group 4)

'We will be able to help others who may have it and also help their families to understand it. We will stop laughing at them because we will know what it is.' (Participant D, Focus group 5)

3.1.5. Sub-theme 1.5: Feeling confident in helping others

Participants stated that they might not only acquire knowledge from epilepsy education, but they will also acquire skills on how to help a people living with epilepsy when they are having seizures. It is elaborated by these results that they will be able to help them with confidence because they would have been taught about it. Narratives that emerged are as follows:

'Because we will know if someone falls for us how to assist and we will have the confidence to play with a person with epilepsy because we will know how to assist when they fall.' (Participant B, Focus group 4)

'We will know how to take care of a person with it in our class and bring her back to school because no one will laugh at her anymore because we will also have confidence of helping her if she falls.' (Participant C, Focus group 5)

3.2. Theme 2: Learners' recommended teaching methods for epilepsy in life skills education

There are different recommendations that participants in this revealed in this study as a better way of teaching epilepsy in life skills education. Participant have recommended these teaching methods because they perceive it at the best possible ways since they are the recipient to epilepsy education. The following sub-themes emerged: Visual learning, Learning through practical demonstrations, Repetitive learning, kinesthetic learning, and other ways of learning about epilepsy.

3.2.1. Sub-theme 2.1: Visual learning

Participant revealed that they might learn better if they are being taught through visual method of teaching. The visual method of teaching is whereby teachers display pictures, watching videos of cartoons that display a person with epilepsy and how they are assisted. Participant further stated that it might not be easy for them to forget things that they saw. The following are the narratives that emerged:

'I would want to see it being played like cartoons we watch so that we don't forget.' (Participant C, Focus group 4)

'I would like to watch videos when people with epilepsy are assisted when they have fallen.' (Participant F, Focus group 6)

'I would like to watch it as a video so that I practice it in class with others, that way I will be condent that when someone falls, I will do what I saw on the video.' (Participant D, Focus group 5)

'Sometimes there should be books of pictures about epilepsy because we love pictures we will read every day. And teachers should give us chance of teaching one another.' (Participant B, Focus group 4)

3.2.2. Sub-theme 2.2: Kinaesthetic learning

Participants in this study have advocated kinaesthetic learning because of its capacity to connect the learning process to physical activity. They continued by explaining that in order for students to learn about epilepsy properly, teachers must have them play in a drama that is connected to the condition. This will help them retain the information and be able to practice it when the situation arises. The following narratives emerged:

'***The teacher have to teach us again and again and make us act the drama of assisting a person with epilepsy so that we are sure sure we can assist even when the teacher is not in class.'*** (Participant E, Focus group 4)

'***After taking notes the teacher can make us sing it. Or create a song of epilepsy because we love music.'*** (Participant B: Focus group 5)

'***Show us a person acting to have it and we will understand what it is like to have epilepsy.'*** (Participant F, Focus group 3)

3.2.3. Sub-theme 2.3: Learning through practical demonstrations

Participants also recommended that learning through practical demonstrations can be another way that they can understand this condition well and how to assist people living with epilepsy especially when they have seizures. Furthermore, illustrated that when a teacher is demonstrating, it will give them skills on how to apply it in real situations. Quotations that emerged are as follows:

> ***'I want them to show an example and come and stand in front of us and show us what is happening and how we can help someone.'*** (Participant A, Focus group 3)
>
> ***'I think they should also bring nurses in our schools to teach us this. So that teachers also can learn and teach us.'*** (Participant A, Focus group 4)
>
> ***'Ani when someone has epilepsy they bubble, that means if they use bubble and show us how to treat them as a demonstration.'*** (Participant F, Focus group 3)

3.2.4. Sub-theme 2.4: Repetitive learning

Repetition is one of the learning methods that participant revealed in this study stating that it can be effective if they are taught every day about epilepsy and as well be questioned about what they have learned. The following narratives emerged:

'I would like to be taught every Monday to Friday when going to school and to be taught in the morning before we start with our classes.' (Participant F (enthusiastically), Focus group 2)

'There should be epilepsy lessons everyday so that we learn it every day.' (Participant D, Focus group 4)

'The teachers should teach us every day without getting tired. There should be a period for epilepsy.' (Participant B, Focus group 6)

4. DISCUSSION

Epilepsy has been known as a neurological condition that affects millions of people worldwide. It is a condition that is often surrounded by misconceptions and negative attitudes, particularly in developing countries Musekwa et al. [7]. The importance of educating learners about epilepsy in primary schools through life skills education is crucial in promoting awareness, understanding, and acceptance of epilepsy in society. This study interviewed learners located in the provinces of Mpumalanga and Limpopo to explore their perceptions of the integration of epilepsy in the curriculum of life skills education. as they are the recipients of the teaching.

The study found that learners recognized the need to teach epilepsy in life skills education, and illustrated reasons why epilepsy should be incorporated into the curriculum. Empowerment was a key theme, as learners believed that with epilepsy education, they could empower others by sharing their knowledge. Similarly, the study conducted by Higgins [27] shows how epilepsy specialist nurses contributed to supporting and empowering people living with epilepsy. therefore, it means that one can only be able to empower others when they have knowledge/specialised in an area of a specific phenomenon.

Furthermore, education about epilepsy can reduce stigma and discrimination and help learners accept others with epilepsy. The study also highlighted the importance of learners feeling confident to help others and protecting themselves and others from epilepsy. Similarly, O'Neill et al. [28] illustrated that being educated about onchocerciasis-associated epilepsy may reduce stigma and discrimination. It has been revealed that when learners are taught epilepsy, it will help them to know the causes, treatment and how to help others with epilepsy, learning how to accept others with epilepsy instead of discriminating them [29]. Makhado et al. [29] further stated that when learners are knowledgeable about epilepsy, they will even assist others at home, leaving the whole community knowledgeable about epilepsy, which

therefore decreases stigma related to epilepsy. The other reasons that emerged from this study were protecting self and others (prevention of epilepsy), learning how to accept others with epilepsy, and feeling confident to help others. These sub-themes are consistent with previous studies that suggest that education about epilepsy can empower individuals, promote awareness, understanding, and acceptance of epilepsy in society, and improve attitudes towards people with epilepsy [29–31].

The second theme that emerged from the current study pertained to learners' recommendations for teaching epilepsy in life skills education. Participants articulated their thoughts on the best methods of teaching epilepsy that would be memorable and enable them to assist individuals with epilepsy during seizures. Specifically, the participants recommended visual learning, kinesthetic learning, learning through practical demonstrations, and repetitive learning as the most effective teaching methods to be employed in life skills education when teaching epilepsy. These recommendations align with previous research studies that suggest incorporating diverse learning styles into teaching can improve learning and retention [29,32]. The use of visual aids and practical demonstrations can assist learners in comprehending and recollecting information, whereas kinesthetic learning can facilitate learners' ability to apply their knowledge in real-life scenarios.

5. CONCLUSIONS

To sum up, the results of this research underscore the significance of integrating epilepsy into life skills education within primary schools. Educating students about epilepsy can facilitate awareness, comprehension, and acceptance of epilepsy within society, and can also enhance attitudes towards individuals with epilepsy. Additionally, the study provides suggestions for teaching epilepsy in life skills education, which can improve the learning and retention process. These conclusions can aid in the creation of educational programs aimed at raising awareness and understanding of epilepsy within society. The researchers recommend the development of a special epilepsy textbook for primary schools to promote epilepsy awareness and understanding in society. Creating a specialized textbook on epilepsy for primary schools can play a crucial role in enhancing the educational interventions that aim to promote epilepsy awareness and understanding. The textbook can provide accurate information about epilepsy, its causes, symptoms, treatment, and ways to support people with epilepsy. It can also include stories of people with epilepsy, highlighting their challenges, strengths, and achievements to reduce stigma and promote empathy and inclusiveness.

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T.G.M.; writing—review and editing T.G.M., R.T.L. and M.S.M.; Supervision R.T.L. and M.S.M. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The sharing of data does not apply to this article because no new data were created or examined for the study.

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Article 4

The title of this manuscript is “A Conceptual Framework to Enhance Education on Life Skills Related to Epilepsy in Primary Schools" and it presents a comprehensive framework developed to improve the education and understanding of life skills related to epilepsy in primary schools. The paper utilises empirical data and research findings to construct this conceptual framework, aiming to provide a structured approach to addressing the educational needs surrounding epilepsy. The article discusses the importance of including epilepsy education in the primary school curriculum and highlights the key findings from previous studies. By conceptualising these findings, the paper offers a framework that outlines essential components for effective life skills education on epilepsy. This conceptual framework serves as a valuable resource for educators, curriculum developers and policymakers in designing and implementing comprehensive epilepsy education programs in primary schools.

A CONCEPTUAL FRAMEWORK TO ENHANCE EPILEPSY LIFE SKILLS EDUCATION IN PRIMARY SCHOOLS

Submitted to Journal as:

Thendo Gertie Makhado, Rachel Tsakani Lebese & Maria Sonto Maputle. A Conceptual Framework to Enhance epilepsy life skills education in primary schools of Limpopo and Mpumalanga province. *HEALTH SA GESONDHEID* **(Under Review)**

(See **Annexure I_4** for Author Guidelines)

Corresponding Author: Thendo Gertie Makhado, Email- Gertie.makhado@univen.ac.za

Abstract

Introduction: Education about epilepsy is crucial for reducing stigma, improving seizure management, and preventing school dropout. However, there is a lack of a conceptual framework for epilepsy education, particularly in primary schools, where every child's journey begins.

Aim: Therefore, this study aims to develop the conceptual framework to enhance epilepsy education in primary schools to mitigate stigma related to epilepsy from a young age.

Setting: The study was conducted in Primary schools of Limpopo and Mpumalanga provinces

Methods: The used a qualitative multi-methods approach for the empirical phase. The empirical phase was divided into two stages in which both stages employed exploratory-descriptive design. Data was collected from teachers, life skills educational advisors, and learners exploring their perceptions regarding the need to include epilepsy in life skills education for primary schools.

Results: The findings from the study revealed that there is a need to include epilepsy education in life skills education to increase learners' knowledge and understanding about epilepsy, promote values and attitudes, and enable learners to have skills to manage seizures.

Conclusions: The findings of the study were conceptualised to develop a conceptual framework to enhance epilepsy education in primary schools that is based on the three-legged stool model and Dickoff, James and Wiedenbach's practice-oriented theory. This conceptual framework is also aiming to instil Ubuntu philosophical values and attitudes towards epilepsy. This article highlights the importance of providing epilepsy education in primary schools since there is no conceptual framework focused on enhancing epilepsy education in South Africa.

Keywords: Conceptual framework, learners, life skills, education, primary schools

Introduction

Epilepsy is a chronic neurological disorder that is distinguished by recurrent seizures, affecting approximately 50 million people globally, with 80% living in low- and middle-income countries (WHO, 2017). Children with epilepsy face several challenges that affect their social, emotional and academic development, including stigmatisation, discrimination and social exclusion (Kirabira et al.,2020). Yeni et., 2018, suggested that insufficient knowledge about epilepsy can result in unfavourable attitudes towards individuals who have epilepsy. These negative attitudes can result in discrimination and isolation of people living with epilepsy (PLWE) due to misunderstandings about the condition. Research studies have identified several misconceptions surrounding epilepsy, including beliefs that it is caused by witchcraft or demons and that it is contagious (Nasif et al., 2021; Kissani et al.,2020; Makhado et al., 2023). Furthermore, other studies also suggest that misconceptions regarding epilepsy result from inadequate knowledge about epilepsy (Vetri et al.,2023; Anene-Okeke et al.,2020)

Syvertsen et al. (2020) reported many school dropouts, particularly among learners living with epilepsy. According to the literature, the primary cause of these learners leaving or discontinuing their school activities may be prejudice and loneliness stemming from misunderstandings and negative perceptions associated with epilepsy (Syvertsen et al., 2020; Kaddumukasa et al., 2021). This concurs with studies conducted globally, which indicate that most learners with epilepsy who discontinue their education do so due to the discrimination and stigma associated with epilepsy, primarily caused by a lack of epilepsy knowledge (Vetri et al.,2023; Anene-Okeke et al., 2020). Thus, it is crucial to improve the understanding of epilepsy to reduce the prevalence of myths and misconceptions associated with the condition (Musekwa et al., 2020).

Life skills education can be crucial in promoting the social and emotional development of children with epilepsy, enabling them to manage their condition and increasing their participation in society (Makhado et al., 2022; Makhado et al., 2023). In addition, providing education about epilepsy can also benefit learners without epilepsy by teaching them how to help during seizures and reduce negative attitudes and unfair treatment towards PLWE (Makhado et al., 2022). However, there are gaps in providing epilepsy life skills education in primary schools to primary learners and teachers. No known research in South Africa has been conducted on providing epilepsy education to primary school learners with the aim to reduce stigma and dispel misconceptions associated with the condition. Therefore, this paper presents a conceptual framework to enhance epilepsy life skills education in primary schools in Limpopo and Mpumalanga provinces.

This study develops a conceptual framework that is based on the three-legged stool model, which includes three key concepts and foundational support. Additionally, it draws upon Dickoff et al.'s (1968) practice-oriented theory to stress the significance of recognising each patient's specific needs and creating a personalised care plan. The proposed framework aims to enhance the knowledge and understanding of epilepsy among learners, teachers and parents and develop social, self-management advocacy and community engagement skills among children living with epilepsy. This conceptual framework is also based on *Ubuntu* philosophy (Nabudere, 2005), that emphasises the benefits of collaborating with educators to help learners develop life skills, including instructors and the importance of using a variety of teaching strategies to ensure effectiveness. *Ubuntu* values entail the interconnectivity of all individuals as well as the role of empathy and compassion in educational settings. In addition to advancing epilepsy education, the study emphasises how crucial it is to give young children in primary schools a solid foundation in life skills education built on *Ubuntu* philosophy like respect, acceptance, charity and kindness. Implementing *Ubuntu* philosophy into the classroom may foster a more welcoming and encouraging learning atmosphere that is advantageous to all learners.

Material and methods

The study employed a qualitative multi-method approach that used an exploratory-descriptive design to comprehensively examine the significance of incorporating epilepsy in life skills education. The study participants comprised teachers, life skills educational advisors (LEAs) and learners. Gathering rich, detailed data from multiple sources can provide a more comprehensive understanding regarding the need to include epilepsy in life skills education (Anguera et al., 2018; Morse et al., 2015). The study was conducted in the primary schools of Limpopo and Mpumalanga Provinces and was conducted in one phase that consisted of two stages then followed by the development of the CF. This included qualitative data collection from learners, teachers and LEAs.

Stage 1

In the initial stage of the empirical phase, an exploratory-descriptive design was employed to examine the viewpoints of advisors who specialise in life skills education and teachers on the importance of providing epilepsy education in life skills. The study aimed to determine if teachers and advisors who specialise in life skills better understood the need to provide epilepsy education in life skills. Thorough and partially structured interviews were carried out to gather data from teachers and LEAs, which were then analysed using ATLAS TI and the basic steps of the notice-collect-think (NCT) approach.

Stage 2

In the second stage of the empirical phase, an exploratory-descriptive design was employed. To investigate learners' views on the significance of acquiring knowledge about epilepsy as part of life skills education, focus group discussions were utilised to gather data from 36 learners, with six individuals in each group. The collected data was analysed using ATLAS TI and the basic steps of the notice-collect-think (NCT) approach.

The CF was crafted based on the findings of Qualitative initial studies. Dickoff et al.'s (1968) practice-oriented theory and three-legged stool model addressed the necessity of incorporating epilepsy education into life skills training for primary school learners. The Practice-Oriented Theory includes elements such as the agent, recipients, context, procedure, dynamics and terminus while the Three-legged stool model focuses on life skills education of epilepsy for learners in primary schools located in the provinces of Mpumalanga and Limpopo.,. Table 1 presents the methods used in the study.

Table 1: Qualitative multimethod design

Study design	**Stage1: Exploratory-descriptive Design**	**Stage2: Exploratory - descriptive Design**
Purpose	Explore perceptions of teachers and LEAs advisors regarding the need to include epilepsy in life skills education	Explore perceptions of learners regarding the need to include epilepsy in life skills education
Sample	Purposive sampling	Purposive sampling
Participants	Teachers and LEAs	Learners
Data Collection	In-depth semi-structured individual interviews	Focus group discussion
Sample Size	20 Primary school teachers 8 LEAs	Six focus group discussions which are equal to 36 primary school learners
Context	Primary schools for teachers Department of Education circuits of Mpumalanga and Limpopo provinces	Primary schools of Limpopo and Mpumalanga provinces
Data Analysis	Basic steps of notice-collect-think (NCT) and Atlas TI	Basic steps of notice-collect-think (NCT) and Atlas TI

Ethical consideration: The study was conducted with the approval of the Human and Clinical Research Ethics Committee University of Venda (SHS/19/PH/37/2101) and permission was granted by the Department of Education Limpopo and Mpumalanga provinces. Written informed consent and assent were obtained from all participants. Recordings during data collection were done prior to the approval by the participants and the issue of voluntary

participation was emphasised noting that they can withdraw at any time with no penalties. Privacy and confidentiality were maintained.

Results

The qualitative findings from phase 1 indicated that learners, teachers and LEAs recognised the necessity of including epilepsy education in life skills training. From the perspective of advisors who specialise in life skills education, there was a need to improve learners' knowledge of epilepsy, particularly regarding the fact that it is a health-related curable condition and to dispel myths about epilepsy being linked to witchcraft. In addition, epilepsy education content that covered an overview of epilepsy, different types of epilepsy and basic management of epilepsy were needed. The suggested instructional techniques used to teach about epilepsy as part of life skills education included using videos of people with epilepsy, community awareness campaigns, drama, stories and discussions about epilepsy.

Learners had numerous reasons for advocating for the inclusion of epilepsy education in life skills training. Some of these reasons included the desire to feel empowered and to help protect themselves and others, the aspiration to learn about the origins and treatment of epilepsy and the need to learn how to assist individuals with epilepsy with confidence. The learners also recommended certain teaching methods, such as visual and kinesthetic learning, practical demonstrations and repetitive instruction, as effective approaches to teaching epilepsy in life skills education.

From the teachers' perspective, there was a need to enhance their understanding of epilepsy, particularly its causes, myths, preventive measures and associated hazards, as well as to identify different types of epilepsy so that they can pass the knowledge to learners. Teachers recognised the importance of epilepsy education for learners, teachers, families and the community. They recommended various teaching methods, including awareness campaigns, games, demonstrations and discussions. Measures to ensure trustworthiness that included credibility, transferability and dependability were adhered to throughout the study.

Summary of findings

The table summarises the findings of a study on incorporating epilepsy incorporated into life skills training for teachers, learners and LEAs. The findings are presented in four main categories: Participants' knowledge of epilepsy, participants' perceptions regarding the significance of epilepsy inclusion in life skills education, participants' suggested approaches utilised to educate learners on epilepsy as part of life skills training and participants' perceptions regarding information to be encompassed in the life skills program of epilepsy.

Table 2: Summary of findings

Teachers' result
➢ The participants in the study demonstrated a solid grasp of the causes of epilepsy, as well as knowledge of preventative measures and the associated risks. Nonetheless, they also shared some misconceptions and false beliefs about epilepsy. ➢ Teachers reported that there is a need for epilepsy education to learners, teachers and the community. ➢ Participants suggested different methods of teaching epilepsy in life skills education, including awareness campaigns, games, demonstrations, pictures, pamphlets and engaging learners in discussions. ➢ Participants reported that information to be included in the epilepsy life skills program should cover the general overview of epilepsy, diet and self-care activities and management of epilepsy
Learners' results
➢ The viewpoints expressed by the learners regarding the importance of including epilepsy education in life skills training involve the idea that it will aid in empowering oneself and others, safeguarding oneself and others (preventing epilepsy), gaining knowledge about the causes, treatment and how to assist individuals with epilepsy, developing an acceptance of individuals with epilepsy and developing self-confidence to provide support to others. ➢ In the study, learners suggested various approaches that could be used to educate learners on epilepsy as part of life skills training such as visual learning, kinesthetic learning, practical demonstrations and repetitive learning.
LEAs' results
➢ LEAs had misconceptions about epilepsy, including believing it is a health-related curable condition linked to witchcraft. ➢ Participants acknowledged the benefits of including epilepsy education in life skills education for learners, teachers, parents and the community. ➢ Participants perceive that the content to be included in life skills epilepsy education should cover the overview of epilepsy, different types of epilepsy and basic management of epilepsy. ➢ Participants recommend different methods of teaching epilepsy in life skills education, including videos of epileptic people, community awareness campaigns, drama and stories as well as discussions on epilepsy.

Understanding the three-legged stool model and Dickoff's practice-oriented theory.

The conceptual framework is developed based on the three-legged stool model, which includes three crucial elements and a supporting base. Additionally, Dickoff et al.'s (1968) practice-oriented theory highlights the significance of comprehending the patient's requirements and the environment in which they receive care.

Three-legged stool model

The study employed the three-legged stool model, which consisted of three key concepts and foundational support (Tushar., 2017). A graphical representation of a three-legged stool is provided in Figure 1 to depict the interplay between the three pillars (Makhado et al., 2022). The three legs need to be present, of equal length and structurally sound and need to be placed on a firm foundation for the model to be effective and safe, following the analogy of a three-legged stool (Makhado et al., 2022).

The study utilised a life skills approach that relies on a three-legged model, wherein each leg have equal strength and serves as a robust foundation of support. The three legs are Knowledge and Understanding, Values and Attitudes, and Skills, which are crucial for developing life skills. It is emphasised that a firm foundation, an individual's self-esteem, is essential for these three legs to function effectively. Primary school teachers and LEAs play a significant role in strengthening this foundation by providing three core elements: educating learners about epilepsy for knowledge and understanding, encouraging exploration of values and attitudes to cultivate positive perceptions towards epilepsy and enabling the development of skills in managing epilepsy seizures and fostering proper social interactions.

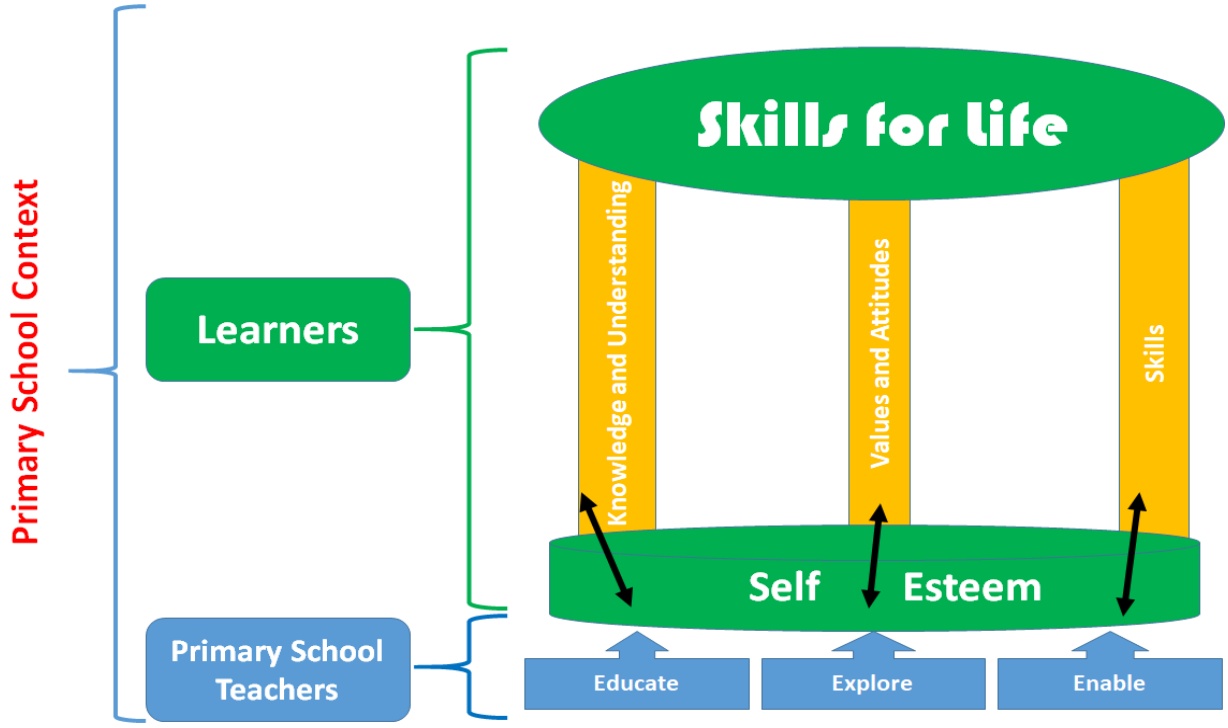

Figure 1: Three-Legged Stool Model (Makhado et al., 2022)

Dickoff's practice-oriented theory

The significance of considering the recipient's needs, the context of care and the teaching procedures related to epilepsy is emphasised in the theory proposed by Dickoff et al. (1968). These elements play a crucial role in ensuring favorable outcomes. The theory by Dickoff et al. (1968) comprises six components: agent, recipient, context, procedures, dynamics and terminus. In order to develop a functional conceptual framework based on these components, the following questions need to be addressed:

"Who or what performs the activity?" (agent)

"Who or what is the recipient of the activity?" (recipient)

"In what context is the activity performed?" (context)

"What is the endpoint of the activity?" (terminus)

"What is the guiding procedure, technique, or protocol of the activity?" (procedures)

"What is the energy source of the activity?" (dynamics)

Conceptualising research findings to construct a conceptual framework.

Dickoff et al.'s (1968) elements are integrated with the three-legged stool framework to develop a conceptual framework aimed at enhancing epilepsy education in life skills education. In this study, primary school teachers serve as the agents responsible for educating learners about epilepsy, while LEAs provide a curriculum that includes epilepsy education. The recipients are learners in primary schools located in the Limpopo and Mpumalanga provinces, which constituted the context. The guiding principles or procedures involve educating learners to achieve knowledge and understanding, explore their values and attitudes to foster positive attitudes towards epilepsy. Furthermore, it enables them to develop skills in managing seizures and interacting positively within their community. These procedures give rise to the desired outcome or terminus: to enhance epilepsy education in primary school for learners which may decrease the stigma and misconceptions associated with epilepsy and equip learners to assist during seizures. The energy source for the activity/interactions between the agents and recipients within the context is facilitated by various forms of support, including continuous training, collaboration motivation and support and supervision of primary school teachers. This is supported by Mboweni et al., 2019 who described the dynamics as the support system to enhance the procedures.

Three pillars of the stool

The study is structured around three fundamental concepts, which are the building blocks for life skills education. These three pillars are Knowledge and understanding, Values and attitudes, and Skills.

Insufficient knowledge about epilepsy has been identified as a major cause of discrimination and misconceptions, leading to stigma and high dropout rates among school learners (Musekwa et al., 2020; Kwon et al., 2022; Nurjannah et al., 2020). Several studies have demonstrated the crucial role of epilepsy education in combating these misconceptions and misunderstandings (Kaddumukasa et al., 2021; Iannone et al., 2020). The outcomes of this study align with those discoveries, underscoring the necessity of epilepsy education for primary schools' learners in the provinces of Limpopo and Mpumalanga. To address this need,

LEAs (agents) plan to incorporate epilepsy education into life skills curriculum, which can enable primary school teachers (agents) to educate learners (recipients) and improve their knowledge and understanding of epilepsy in primary schools of Limpopo and Mpumalanga provinces (Context).To ensure that all three legs of the stool are equally strong, primary school teachers must promote positive values and attitudes towards epilepsy among learners. This involves exploring learners' values and attitudes towards epilepsy and helping them develop appropriate values and attitudes to better comprehend individuals with epilepsy. Therefore, it is crucial for primary school teachers to incorporate *Ubuntu* philosophical values in the classroom to foster a welcoming and encouraging atmosphere in which learners feel free to explore their values and attitudes toward epilepsy.

The last leg of the stool is supported by teachers who use an enabling approach in small-group settings to enhance learners' understanding of epilepsy, their ability to handle seizures and their social interactions with individuals living with epilepsy. Teachers can use various teaching methods, such as videos of epileptic people, discussions about epilepsy and visual or kinesthetic learning, to achieve this goal. Furthermore, practical teaching methods such as drama acting or other forms of active learning may enable learners to acquire skills to manage epileptic seizures. To achieve the desired terminus of enhancing epilepsy education with the aim of reducing stigma and misconceptions associated with epilepsy, various forms of support, including continuous training, collaboration and supervision of primary school teachers are necessary as the dynamics. The guiding principles and procedures used to achieve these outcomes, which are educating, exploration and enabling, serve as a strong foundation of self-esteem, essential for effectively implementing the epilepsy education program within the conceptual framework.

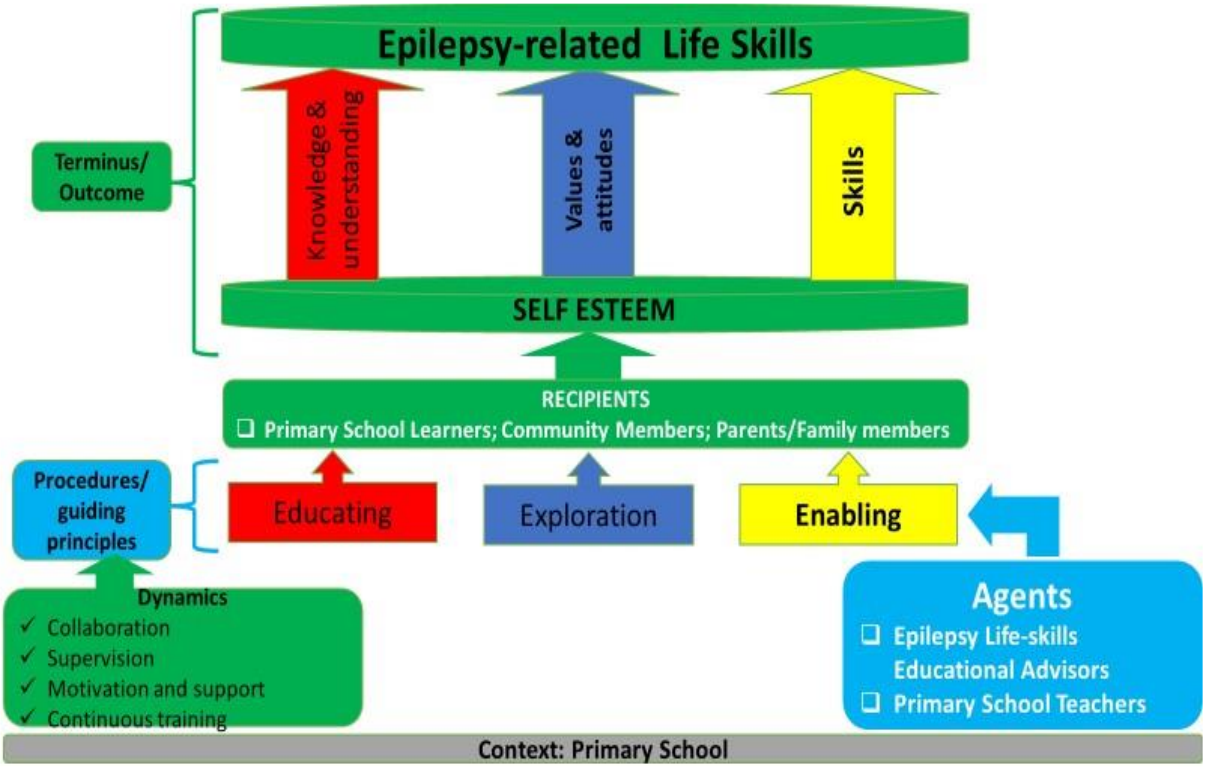

Figure 2: Conceptual Framework to Enhance Epilepsy Life Skills Education in Primary Schools

Discussion

The three-legged stool conceptual framework emphasises the significance of creating a solid foundation based on personal self-esteem, which can be improved through three components, namely, educating learners about epilepsy, exploring values and attitudes towards epilepsy and enabling learners to develop skills and appropriate social interaction related to epilepsy. The researcher incorporates *Ubuntu* philosophy to further solidify this conceptual framework. The *Ubuntu* ideology places a strong emphasis on the connectivity of all individuals as well as the value of compassion and empathy in educational environments. A more comprehensive and inclusive approach to epilepsy education might be developed by incorporating these ideals into the conceptual framework.

It would be up to primary school teachers and LEAs in the provinces of Limpopo and Mpumalanga to develop and provide an epilepsy education curriculum to their learners. Teachers would employ numerous teaching methods and strategies such as illustrations, dialogues, role-playing and simulations, to guarantee learners had a complete understanding of epilepsy. Learners would actively engage with the subject taught by their teachers and take part in classroom activities. With an emphasis on respect, acceptance, compassion and

kindness, the goal of epilepsy education in life skills is to examine and improve learners' values and attitudes regarding epilepsy.

In the primary school setting, teachers and students can collaborate to create a learning environment that is inclusive and supportive. The integration of Ubuntu philosophies can encourage a more community-oriented and collaborative approach to epilepsy education. This can be achieved by encouraging educators to collaborate with community members, including traditional healers and medical professionals, to promote a more comprehensive understanding of epilepsy and its management. Additionally, emphasising the values of respect, acceptance, compassion and kindness can help reduce the stigma and misconceptions surrounding epilepsy and foster a more supportive environment for all students.

Conclusion

The three-legged stool and Dickoff's conceptual model can be combined with the *Ubuntu* philosophy to create a more thorough and inclusive approach to epilepsy education, one that emphasises knowledge and understanding, exploring values and attitudes, and developing skills and social interaction related to epilepsy.

Implications of the study

The proposed study offers a conceptual framework that aims to improve the teaching of epilepsy life skills in primary schools. Its implications include raising awareness of epilepsy, lowering stigma, improving seizure management skills, improving support for individuals and their families, and developing the field of epilepsy education. In order to assure effectiveness, this framework highlights the value of incorporating teachers and life skills educational consultants as well as using a variety of instructional methods. The incorporation of Ubuntu ideals can also increase the theoretical foundation for epilepsy teaching, encouraging a more comprehensive and inclusive approach. Learners can gain a deeper awareness of epilepsy and its effects on people and communities by highlighting the connectivity of all people as well as the value of empathy and compassion in educational environments. The findings could have an effect on general education as well as epilepsy education. Teachers may foster a more inclusive and supportive learning environment for all children, regardless of their background or skills, by encouraging values like respect, acceptance, compassion and kindness. By putting out a fresh conceptual framework that can be improved based on input from teachers, life skills educational consultants and learners, the study contributes to the field of epilepsy education. By using this framework, communities can better serve people with epilepsy and their families, thereby lowering the social and psychological impacts of epilepsy.

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ARTICLE 5

The title of this article is "Development and Validation of Epilepsy Life Skills Guidelines for Primary School Learners and Teachers in Limpopo and Mpumalanga Provinces". It focuses on the development and validation of guidelines for epilepsy life skills education in primary schools. The study utilizes empirical data and builds upon the previously developed conceptual framework to create these guidelines. The process of guideline development involves adapting and modifying the World Health Organization's guideline development guide, which incorporates the PICO (Population, Intervention, Comparison, Outcome) and GRADE (Grading of Recommendations Assessment, Development, and Evaluation) methods to form evidence-based recommendations. The guidelines aim to provide a structured and comprehensive approach to teaching life skills related to epilepsy in primary schools. The article discusses the importance of these guidelines in enhancing the education and understanding of epilepsy among learners and teachers in Limpopo and Mpumalanga provinces. The validation process involves obtaining feedback and input from various stakeholders, including educators, caregivers of people living with epilepsy, and curriculum advisors, to ensure the relevance and effectiveness of the guidelines. Overall, this article highlights the significance of evidence-based guidelines in promoting quality education on epilepsy life skills and contributes to the development of inclusive and supportive learning environments for primary school learners and teachers.

DEVELOPMENT AND VALIDATION OF EPILEPSY LIFE SKILLS GUIDELINES FOR PRIMARY SCHOOL LEARNERS AND TEACHERS IN LIMPOPO AND MPUMALANGA PROVINCES

Submitted to Journal as:

Thendo Gertie Makhado, Rachel Tsakani Lebese & Maria Sonto Maputle. Development and validation of Epilepsy Life Skills Guidelines for Primary School Learners and teachers in Limpopo and Mpumalanga Provinces. *Children* **(Under review)**

(See **Annexure I_3** for Author Guidelines)

Corresponding Author: Thendo Gertie Makhado, Email- gertie.makhado@univen.ac.za

Abstract

Epilepsy is a disorder that disturbs nerve cell activity in the brain, resulting in seizures. It was noted that it occurs mostly in children, especially at the age of primary school level, and could result from a genetic condition. The aim of this study was to develop and validate life skills education guidelines for primary school learners of Limpopo and Mpumalanga provinces in South Africa to educate them about epilepsy with the aim of reducing stigma and discrimination towards people with epilepsy. The guidelines were developed by adapting the World Health Organization (WHO) guideline development guide, which included the formulation of PICOS (Population, Intervention, Comparison, Outcome, Study design) questions, conducting a systematic review of the literature, and using GRADE (Grading of Recommendations Assessment, Development, and Evaluation) to develop evidence-based recommendations. The recommendations that informed the guideline development were that epilepsy education should be included in the primary school life skills curriculum to improve learners' understanding, attitudes, and skills related to epilepsy. This epilepsy education should be tailored to the needs of primary school learners and cover topics such as seizure recognition, management, medication, and coping strategies. Collaboration between healthcare providers, educators, and policymakers is crucial to developing culturally appropriate and evidence-based epilepsy education guidelines. Teachers and healthcare providers should also receive training on how to support learners living with epilepsy. The resulting guidelines provide clear and concise guidance on epilepsy education in life skills for primary school learners, caregivers, and teachers. The guidelines are expected to improve the quality of epilepsy life skills education and contribute to the overall well-being and inclusion of learners with epilepsy in Mpumalanga and Limpopo provinces, South Africa.

Keywords: Development, Epilepsy, Educational program, guidelines, life skills, primary school learners.

Introduction

People of all ages, including children, are impacted by the neurological condition known as epilepsy. Aaberg (2017) reports that 1 in 150 children is diagnosed with epilepsy internationally, while Thijis (2019) estimates that 50 million people worldwide suffer from the ailment. According to Lystad (2022), children with epilepsy experience unique difficulties, especially in their social and academic lives. These difficulties might severely impact their general well-being and academic success. Studies have shown that people livng with epilepsy are more likely to experience social isolation, reduced opportunities for employment and education, increased psychological distress and anxiety (Clifford, 2023; Mayor, 2022). Stigma and discrimination can also lead to delays in seeking medical care and treatment and reduced adherence to treatment regimens (Braga, 2020; World Health Organization, 2014). Although there is no known cure for epilepsy, effective management of the condition can significantly enhance the quality of life of those affected.

Studies revealed that epilepsy is given less attention compared to other chronic conditions in terms of education and this condition is associated with stigma, misconceptions and discrimination that is contributing to school dropouts (O'Neill et al., 2019; Ackermann et al., 2019). Since there is high incidence of epilepsy in Sub-Saharan Africa (SSA), one of the study that has been conducted in SSA revealed that learners living with epilepsy were dropping out and sometimes missing the classes due to perceived stigma from the classmates (Fitts et al., 2019). This means that there is a necessity to bridge the gap of lack of epilepsy education starting from primary schools to mitigate stigma related to epilepsy from young age

Several countries such as India, Bolivia, and Pakistan, have addressed the stigma and discrimination associated with epilepsy through various initiatives, including educational programs and public awareness campaigns (Mogal et al., 2020; Cicero, 2020; Goel, 2014). Recent research in South Africa has suggested that epilepsy should be covered in primary school life skills curriculum. Doing so may help educate learners about the condition at a young age and lessen stigma, misunderstandings and discrimination (Makhado et al., 2023). Additionally, it was found that teaching epilepsy in schools may help spread knowledge and awareness to the broader community through learners, potentially reducing misconceptions and stigma related to epilepsy (Makhado et al., 2023).

The prevalence of stigma and discrimination associated with chronic illnesses such as HIV, mental illness, and diabetes mellitus has led to the development of educational programs aimed at reducing these negative attitudes. Studies suggests that insufficient knowledge about the nature of these conditions contributes to stigmatisation (Abdu et al., 2016; Beerappa et al., 2017; Papish et al., 2013). And it was evident that these educational interventions decreased

the stigma and discrimination surrounding these chronic conditions (Papish et al., 2013). Considering this, it is hypothesized that the development and implementation of epilepsy life skills guidelines may be effective in mitigating stigma and discrimination associated with this particular chronic illness, as has been demonstrated in the case of other chronic conditions.

This research paper aims to establish guidelines for epilepsy life skills education specifically designed for primary school learners and teachers in the Limpopo and Mpumalanga provinces. To develop these guidelines, the researcher adapted the World Health Organization's guidelines guide (WHO, 2014), which incorporates the Population, Intervention, Comparison, Outcome, and Study design (PICOS) framework and the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology.

Materials and methods

This study is a component of the third phase of a broader research project that aims to create a life skills education guideline for epilepsy in primary schools in Limpopo and Mpumalanga provinces. The primary objective of this guideline is to mitigate the stigmatisation and misconceptions surrounding epilepsy within the community. Phase 1 employed a qualitative multimethod research approach, with stages 1 and 2 of the empirical phase employing an exploratory-descriptive study design. The study focused on the perceptions or views of primary school teachers, life skills educational advisors, and learners regarding the need to include epilepsy in life skills education. The feasibility of the study was assessed through pre-testing to ensure that the central questions were clear enough and understandable.

Data were collected through individual interviews with life skill educational advisors and teachers and focus group discussions with learners in the sampled primary schools in Limpopo and Mpumalanga provinces. Trustworthiness was achieved by enhancing credibility, dependability, conformability, and transferability. The data were analyzed using ATLAS. ti, following the basic steps of notice-collect-think (NCT) analysis.

The preliminary results included three main themes: the advantages of incorporating epilepsy education, the proposed content in epilepsy education and the recommended teaching methods for integrating epilepsy education into life skills instruction.

Table 1: Preliminary results

STAGE 1 RESULTS (Teachers' perceptions) Makhado et al., 2023a
Participants' knowledge about epilepsy
Participants' perspectives regarding the Importance of epilepsy inclusion in life skills education
Participants' suggested method of teaching epilepsy in life skills education
Participant perspectives regarding information to be included in the epilepsy life skills program

STAGE 1 RESULTS (Life skills educational advisors' perceptions) Makhado et al. (In press)
Life skills educational advisors' knowledge of epilepsy
Benefits of including epilepsy in life skills education
Content for epilepsy education
Methods of teaching epilepsy in life skills education
STAGE 2 RESULTS (Learners' perceptions) Makhado et al., 2023b
Learners' reasons for the integration of epilepsy education into life skills training.
Learners' recommended teaching methods for epilepsy in Life skills education

The outcomes of the first two stages were used to develop a conceptual framework in phase 2 and have demonstrated a need for incorporating epilepsy education into life skills instruction. Furthermore, the conceptual framework served as the basis for development of epilepsy life skills guidelines for Limpopo and Mpumalanga provinces.

This paper adapted WHO (2014) guideline development guide to develop guidelines for a specific health intervention. Guideline development is a systematic and rigorous process involving a series of steps to provide evidence-based recommendations to healthcare practitioners and policymakers. The guideline development process typically involves identifying the need for the guideline, formulating the questions that the guideline will address, conducting a systematic review of the relevant evidence, and formulating recommendations based on the quality of the evidence. The guideline development process adhered to a systematic approach, detailed as follows.

1. **Identify the need for the guidelines and establish the guidelines topic.**

The World Health Organization (WHO, 2014) aims to develop guidelines in an objective and transparent manner, taking into account the best available evidence and stakeholders' values and preferences. To develop epilepsy life skills guidelines, the researcher conducted interviews with primary school learners, life skills educational advisors and teachers to determine the need for including epilepsy in life skills education. The results showed that including epilepsy in life skills education is necessary (Makhado et al., 2022; Makhado et al., 2023), and a conceptual framework was developed to assist in the guideline development process. The conceptual framework that was developed highlighted the importance of establishing a strong base centered around individual self-esteem. This can be enhanced through three key elements: educating individuals about epilepsy, exploring their values and attitudes regarding epilepsy and empowering them to acquire skills and engage in suitable social interactions regarding epilepsy. Furthermore, participants emphasized the importance of using various teaching methods to increase knowledge and understanding of epilepsy, promote positive values and attitudes and develop skills to manage seizures. Therefore, the

guidelines should reflect these aspects and provide guidance on the most effective teaching methods to achieve these objectives.

According to the study's findings, it is essential to teach primary school learners about epilepsy in life skills to raise awareness of the ailment and eradicate common misconceptions about it. The promoters of the study oversaw the creation of the life skills guidelines, which focused on the topic of **"*Development and validation of Epilepsy Life Skills Guidelines for Primary School Learners and Teachers in Limpopo and Mpumalanga Provinces*."** The guidelines are expected to provide a foundation for teaching epilepsy in life skills education in primary schools located in Mpumalanga and Limpopo province. This, in turn, will improve awareness and understanding of epilepsy.

2. **The scope of the guideline**

According to WHO (2014), scoping of guidelines is the process that involves establishing the specific content and details that will be covered by the guidelines. The researcher determined the scope of the epilepsy life skills guidelines for primary school students and teachers by utilizing the findings from empirical research. The guidelines were designed to target primary school learners in Limpopo and Mpumalanga provinces, focusing on reducing the stigma associated with epilepsy and promoting epilepsy awareness from an early age among primary school learners. The following questions guided the search for data and assisted in formulating potential recommendations.

- What are the benefits of including epilepsy in life skills education for primary school learners?
- What content should be included in epilepsy education for primary school learners?
- What teaching methods would most effectively deliver epilepsy education to primary school learners?

3. **Formulation of questions**

The conceptual framework that was devised provided guidance for the creation of the PICOS model, which seeks to enhance the instruction of epilepsy life skills within primary school settings. The implications of implementing this model encompass various objectives, including increasing knowledge and awareness about epilepsy, reducing social stigma associated with the condition, improving the management of seizures, enhancing support systems for individuals and their families and advancing the field of epilepsy education. These objectives can be achieved through the implementation of three core components, namely educating learners about epilepsy, exploring values and attitudes towards epilepsy and facilitating the development of skills and appropriate social interactions pertaining to epilepsy.

The researcher employed the PICO framework to formulate questions to guide the systematic search for evidence. The PICO framework is a commonly used tool in evidence-based research that helps to clarify the critical components of a research question, including the population of interest, the intervention being studied, the comparator group, the outcomes being measured and the study design. The PICOS is described hereunder.

- **Population**

Refers to the individuals or patients who will be the subject of the intervention or the recommended course of action.

The population of interest is primary school learners, which includes both males and female in grades 4-7, and aged between 9-11 years. These are the critical years of development for children and are considered an opportune time for imparting knowledge, values, and skills related to epilepsy (Makhado et al., 2022). The other population of interest is the primary school teachers, including both males and females and those who teach life skills from grades 4-7.

- **Intervention**

Refers to the course of action or therapy that the guideline will advise. The intervention being studied is epilepsy life skills education program through educating, exploration and enabling. This program includes teaching strategies to improve knowledge and understanding of epilepsy, values and attitudes towards epilepsy and skills related to recognizing and responding to seizures.

- **Comparator**

Comparator refers to the alternate therapies or interventions that will be compared to the guideline's suggested intervention (WHO, 2014). The comparator group in this study is either normal education or a control group that did not receive the epilepsy life skills education program. Normal education refers to the standard curriculum provided to primary school learners without additional intervention or modification. On the other hand, a control group is a group of primary school learners who did not receive the epilepsy life skills education program but received a placebo or no intervention.

- **Outcome**

Refers to the result or results that which will be evaluated to determine whether the suggested intervention was effective. The outcomes being measured in this study are knowledge and understanding of epilepsy, values and attitudes towards epilepsy and skills related to recognizing and responding to seizures. These outcomes are important for assessing the

effectiveness of the epilepsy life skills education program and its impact on improving the quality of life for primary school learners with epilepsy.

- **Study design**

Refers to the kind of study design that will be utilized in the review or formulation of guidelines. The review included studies using randomized controlled trials (RCT) or quasi-experimental designs.

The formulated PICO question was “Among primary school learners and teachers, does an epilepsy life skills education program through educating, exploration, and enabling, compared to normal education or a control group, improve knowledge and understanding of epilepsy, values and attitudes towards epilepsy and skills related to recognizing and responding to seizures?” Figure 1 indicates the PICO model utilized to formulate the question.

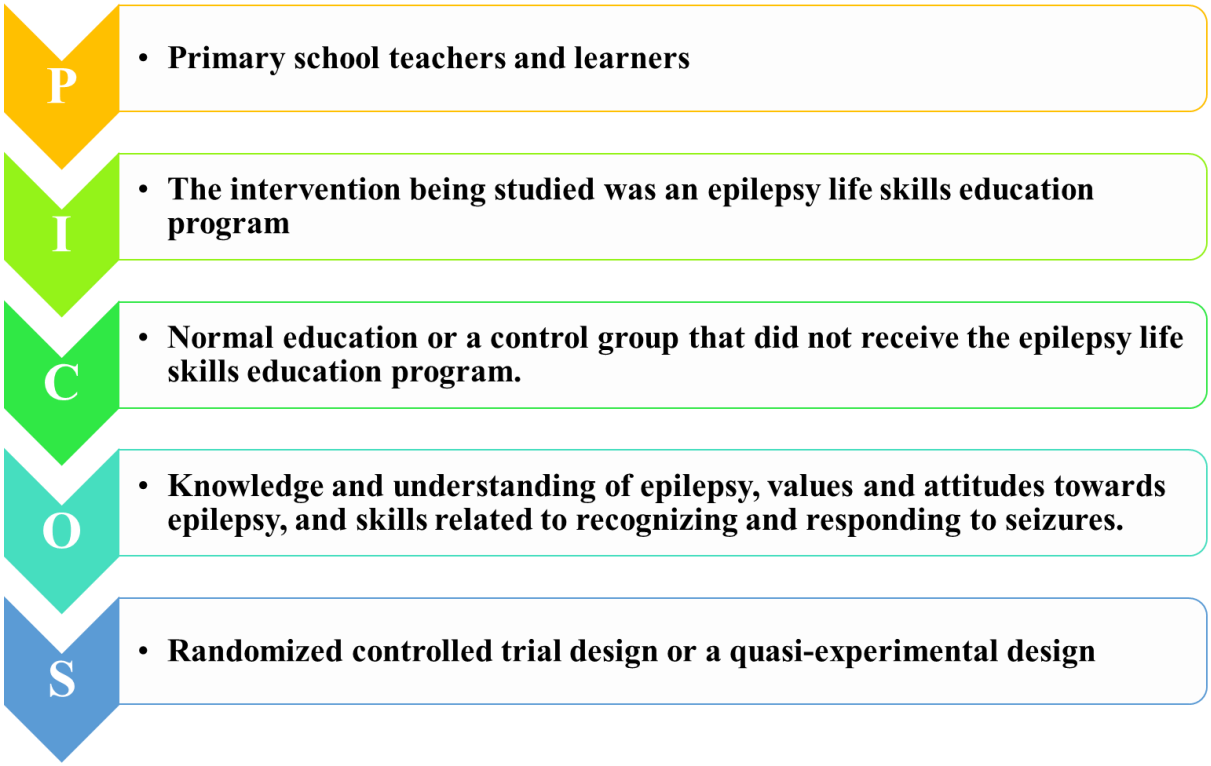

Figure 1: WHO (PICOS) model on formulating the question.

4. **Evidence retrieval and synthesis**

It is imperative to comprehensively review the literature and evidence about the phenomenon being studied to establish a reliable guideline. This assertion is supported by the World Health Organization (WHO, 2014), which underscores the importance of thoroughly investigating the existing body of knowledge related to the research topic**.** Therefore, **t**he systematic review was conducted based on the PICOS question. The systematic review revealed strong

evidence that epilepsy life skills education programs are effective in improving knowledge and understanding of epilepsy (Aldraje & Jasim, 2021; Sulena et al., 2023; Mecarelli et al., 2014, 2015; Goel et al., 2014), values and attitudes towards epilepsy (Martiniuk et al., 2007; Abou Khaled et al., 2020; Brabcová et al., 2013; Brabcová et al., 2017), and skills related to recognizing and responding to seizures among primary school learners (Eze et al., 2015). It was further recommended that healthcare providers, educators, and policymakers should consider incorporating epilepsy life skills education programs into primary school curricula to reduce stigma and improve the quality of life for people living with epilepsy (Aldraje and Jasim, 2021; Martiniuk et al., 2007; Abou Khaled et al., 2020; Sulena et al., 2023; Brabcová et al., 2017a; Mecarelli et al., 2015; Mecarelli et al., 2014; Brabcová et al., 2017b; Eze et al., 2015; Goel et al., 2014; Brabcova et al., 2013). However, further research is needed to determine these interventions' most effective content, duration, and delivery method.

5. Evidence assessment

When conducting a systematic review to develop guidelines, it is crucial to evaluate the quality of evidence gathered and synthesized. To assess the quality of evidence, the researcher in this study utilized the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach as recommended by the World Health Organization (WHO, 2014). This approach involves assessing the quality of evidence and developing recommendations based on the retrieved articles. The GRADE approach categorizes evidence into four levels: high, moderate, low, or very low.

WHO (2014) emphasizes that the quality of evidence depends on the study's design, with randomized controlled trials being considered high-quality evidence, while evidence from observational studies is given a lower rating. The systematic review included interventional studies (randomized controlled trials) and quasi-experimental studies. When evaluating the quality of evidence using the GRADE approach, five factors are considered: risk of bias, imprecision, directness, consistency, and reporting bias (WHO, 2014). These factors can affect the quality of evidence and the strength of the recommendations made in the systematic review.

In summary, the GRADE approach is a rigorous method for evaluating the quality of evidence and developing recommendations based on the findings of a systematic review. By considering the study design, risk of bias, inconsistency, indirectness, and reporting bias, the GRADE approach provides a comprehensive assessment of the quality of evidence, which can help guide decision-making and inform practice.

Indirectness is an essential aspect of assessing the quality of evidence in systematic reviews. It refers to the degree to which the population, intervention, comparator, and study outcomes

match the PICO question (WHO,2014). Indirectness was assessed based on the relevance and applicability of the study results to the PICO question. If a study did not address the PICO question directly or if the population, intervention, comparator, or outcomes substantially differed from those specified in the PICO question, the study was considered indirect.

Imprecision is another crucial aspect of assessing the quality of evidence. It refers to the degree of uncertainty in the results due to small sample sizes or wide confidence intervals (WHO,2014). Imprecision was assessed based on the precision and variability of the estimates across studies. Studies with small sample sizes or wide confidence intervals were considered imprecise and were assigned a lower evidence grade.

Reporting bias refers to the selective reporting of outcomes, such as publication or outcome reporting bias. Reporting bias was assessed based on the completeness and transparency of reporting the study results (WHO, 2014). If a study did not report all relevant outcomes or selectively reported outcomes that favoured the intervention, it was considered to have a reporting bias. Such studies were assigned a lower grade of evidence, as they may overestimate the intervention's effect size. The following table indicates the studies that were assessed for quality of evidence using the GRADE approach.

Table 2: GRADE Grading of recommendations, assessment, development and evaluation) for articles included in the systematic review.

Studies included in the systematic review	Knowledge and Understanding of Epilepsy	Values and Attitudes Towards Epilepsy	Skills related to Recognizing and Responding to Seizures
Aldraje AJ, Jasim AH. (2021)	Low quality	Low quality	Low quality
Martiniuk AL, Speechley KN, Secco M, Campbell MK, Donner A. (2007)	High quality	Moderate quality	Moderate quality
Abou Khaled KJ, Ibrahim MI, Moussa RF. (2020)	Moderate quality	Moderate quality	Low quality
Brabcová D, Kohout J, Weberová V, Komárek V. (2017)	Moderate quality	Moderate quality	Low quality
Mecarelli O, Messina P, Capovilla G, Michelucci R, Romeo A, Beghi E, De Simone R, Cerquiglini A, Vecchi M, Boniver C, Monti F. (2015)	Moderate quality	Moderate quality	Low quality
Mecarelli O, Messina P, Capovilla G, Michelucci R, Romeo A, Beghi E, De Simone R, Lucibello S, Ferrari A, Vecchi M, de Palma L. (2014)	Moderate quality	Moderate quality	Low quality

Brabcová D, Kohout J, Weberová V, Komárek V. (2017)	Moderate quality	Low quality	Low quality
Eze CN, Ebuehi OM, Brigo F, Otte WM, Igwe SC. (2015)	Moderate quality	Low quality	Low quality
Goel S, Singh N, Lal V, Singh A. (2014)	Moderate quality	Moderate quality	Low quality
Brabcova D, Lovasova V, Kohout J, Zarubova J, Komarek V. (2013)	Low quality	Moderate quality	Low quality

The overall quality of evidence indicates how confident one can be in the findings of the studies included in the systematic review. A high quality of evidence means we can have a high degree of confidence in the findings, while a low quality of evidence means less confidence.

Knowledge and understanding of epilepsy

In this case, there is a high quality of evidence for knowledge and understanding of epilepsy based on one study, moderate quality was evident (n=7) and only two studies showed low quality which was based on the small sample size of the selected studies. This means the possibility of improving knowledge and understanding of epilepsy by education intervention is moderate to high. Researchers can be confident that epilepsy education programs enhance knowledge and understanding of epilepsy among primary school learners and teachers.

Values and attitudes towards epilepsy

According to GRADE, values and attitudes towards epilepsy and skills related to recognizing and responding to seizures were found to be mostly of moderate to low quality. This means that the degree of confidence in the findings is moderate. However, there are limitations to the evidence that needs to be considered. In the studies that were included, the limitations included the lack of a comparator.

Skills related to recognizing and responding to seizures

The studies that were reviewed in the systematic review were graded, and the aspect of skills related to recognizing and responding to seizures was rated from moderate to low. Even though studies included in the systematic review were rated as moderate to low quality on skills related to recognizing and responding to seizures, there is a compelling rationale for including them in the analysis. Firstly, it is essential to acknowledge that studies with low ratings can still provide valuable insights and contribute to the overall evidence base (Moola et al., 2020). Secondly, it is possible that including studies with lower ratings can help identify

potential areas of weakness or inconsistency in the literature, which can inform future research efforts (Higgins & Green, 2011).

Overall, the quality of evidence suggests that there is some evidence to support the effectiveness of epilepsy education programs in improving knowledge and understanding of epilepsy, values and attitudes towards epilepsy and skills related to recognizing and responding to seizures. Still, more high-quality research is needed to confirm these findings.

Results

6. Developing recommendations

The systematic review that utilized the PICOS framework has yielded several key recommendations based on the evidence gathered from the included studies. These recommendations inform the development of epilepsy life skills guidelines.

- Epilepsy education should be incorporated into primary school curricula in life skills subject to improve knowledge and understanding of epilepsy, values and attitudes towards epilepsy and skills for recognizing and responding to seizures among primary school learners.
- Epilepsy education in life skills should be tailored to the needs of primary school learners. They should include information about epilepsy, seizure recognition and management, medication management, first aid and coping strategies.
- Epilepsy education should be delivered in various settings, including classrooms, hospitals, and community centres, and by trained educators or healthcare providers.
- Healthcare providers, educators, and policymakers should work together to develop and implement epilepsy life skills education that is evidence-based and culturally appropriate.
- Future research should identify the most effective content, duration and delivery method for epilepsy education in life skills among primary school learners.
- Primary school teachers and healthcare providers should receive training on epilepsy and how to support students with epilepsy, including providing appropriate accommodations and support during seizures.
- Families of primary school learners with epilepsy should be involved in developing and implementing epilepsy education in life skills to ensure that it meets their needs and address their concerns.

The recommendations are consistent with the research outcomes conducted during phase 1: Stages 1 and 2 of the primary study (Makhado et al., 2022a; Makhado et al., 2022b; Makhado

et al., 2023.). These research stages aimed to explore the attitudes and viewpoints of different groups, including learners, teachers and life skills advisors, regarding integrating epilepsy into life skills education.

7. **Writing of epilepsy life skills guidelines**

Incorporation of epilepsy education into primary school curricula in life skills:

Education Specialists and Department of basic Education (DBE) policymakers should ensure that epilepsy education is incorporated into the school curricula in life skill subject. This will help to improve knowledge and understanding of epilepsy, values and attitudes towards epilepsy and skills related to recognizing and responding to seizures among primary school learners.

Actions to fulfil the recommendation:

- Education Specialists, DBE policymakers and other stakeholders should work together to develop guidelines that provide clear recommendations and guidance for integrating epilepsy education into primary school curricula in life skills. These guidelines should outline the objectives of epilepsy education in life skills, the age-appropriate content and the necessary resources for implementation.
- DBE and other stakeholders should allocate resources and support schools in implementing the incorporation of epilepsy education in life skills. These resources may include funding, teacher development and necessary materials and equipment.
- To ensure the successful achievement of objectives and the effective enhancement of knowledge, attitudes, and skills related to epilepsy, it is imperative for DBE, other stakeholders and policy makers to actively monitor and evaluate the implementation of integrating epilepsy education within the life skills curriculum in primary schools.

Tailoring of epilepsy education in life skills:

Epilepsy education in life skills should be tailored to the needs of primary school learners. This education should include information about epilepsy, seizure recognition and management, medication management, first aid and coping strategies.

Actions to fulfil the recommendation:

- Education specialists, DBE policy makers and other stakeholders should develop age-appropriate content for epilepsy education in life skills. This content should be tailored to primary school learners' cognitive abilities and developmental stages.

- Epilepsy education in life skills should be inclusive of the cultural and linguistic diversity of primary school learners. Educators should be aware of their learners' cultural and linguistic backgrounds and incorporate this knowledge into the design and delivery of the epilepsy education. Moreover, this curriculum should be inclusive and embrace learners with disabilities.
- Educators and healthcare providers should receive training on how to tailor epilepsy education in life skills to meet the needs of primary school learners. This training should focus on the development of culturally appropriate and inclusive content, the use of appropriate teaching strategies and the use of proper language.

Delivery of epilepsy education in life skills:

Epilepsy education in life skills should be delivered in various settings, including classrooms, hospitals, and community centres using different teaching methods. Trained educators and/or healthcare providers should deliver this education.

Actions to fulfil the recommendation:

- Educators and healthcare providers should develop various appropriate inclusive teaching strategies for epilepsy life skills education (leaving no one behind). These methods can include classroom-based teaching, interactive workshops, online learning, and community-based education. The other teaching methods may be the use of drama, video, and simulation.
- Educators and healthcare providers in the context of epilepsy education should include the incorporation of Ubuntu philosophical values, such as honesty, trust, compassion, kindness, respect, and love, into their teachings. The ultimate goal of this approach would be to cultivate a culture of acceptance, empathy, and care among primary school learners.
- Educators and healthcare providers should receive training on delivering epilepsy life skills education effectively in different settings. This training should focus on developing appropriate teaching strategies for different settings, using appropriate technology and managing different types of learners.
- Educators and healthcare providers should train the community about epilepsy and encourage community participation in delivering epilepsy life skills education. This community participation can include the involvement of community-based organizations, local leaders, traditional healers, and people with epilepsy who can provide personal experiences and insights to the learners.

Development of Evidence-Based and Culturally Appropriate Education:

Healthcare providers, educators and DBE policymakers should work together to develop and implement epilepsy education in life skills that is evidence-based and culturally appropriate.

Actions to fulfil the recommendation:

- Researchers should conduct studies to evaluate the effectiveness of epilepsy education in life skills. This research can include randomized controlled trials, pre- and post-education evaluations and qualitative studies.
- Healthcare providers, educators and policymakers should consult with community members and stakeholders to ensure that epilepsy education is culturally appropriate. This can include engaging with people with epilepsy, families affected, and community organizations to gather input and feedback on the programs.
- Healthcare providers, educators and DBE policymakers should establish partnerships to develop and implement evidence-based epilepsy education. These partnerships can facilitate the sharing of knowledge, resources and expertise to ensure that epilepsy education is effective and sustainable.

Future research on epilepsy education:

Future research should identify the most effective content, duration and delivery method for epilepsy education in life skills among primary school learners.

Actions to fulfil the recommendation:

- It is crucial for funding agencies to allocate sufficient resources to support research endeavours focused on epilepsy education in life skills. This funding plays a pivotal role in facilitating the evaluation of the effectiveness of incorporating epilepsy education within the context of life skills.
- Universities, healthcare providers, educators, DBE policymakers and funding agencies should collaborate with other stakeholders to identify research gaps and priorities. This collaboration can facilitate the development of research agendas that address the most pressing questions related to epilepsy education in life skills.
- Researchers and other stakeholders should disseminate research findings to inform the development and implementation of epilepsy education in life skills. This can include publishing articles in academic journals, presenting findings at conferences, and sharing information through online platforms and social media.

Training for Primary School Teachers and Healthcare Providers:

Primary school teachers and healthcare providers should receive training on epilepsy education and how to support learners with epilepsy, including providing appropriate accommodations and support during seizures.

Actions to fulfil the recommendation:

- Healthcare specialists, Department of Social Development, epilepsy specialists, and education specialist should develop training programs for primary school teachers and other healthcare providers on epilepsy. This training should cover the basics of epilepsy, seizure recognition and management, medication management, first aid and how to accept learners with epilepsy.
- The training program should encompass the provision of guidance to educators on how to appropriately request exam exemptions and make necessary accommodations for students with epilepsy who may experience seizure episodes during examinations.
- Accreditation or certification should be granted to primary school teachers and healthcare providers who have undergone specialized training on epilepsy, demonstrating their knowledge and proficiency in dealing with this condition.
- Primary school teachers and healthcare providers should receive continuous professional development opportunities to ensure that they are up to date on the latest research and best practices related to epilepsy management.
- Primary school management teams and DBE policymakers should encourage schools to implement epilepsy management plans. These plans should include guidelines for responding to seizures and ensuring that appropriate support is available to learners with epilepsy.

Involvement of Families in epilepsy education development and implementation:

Families of primary school learners with epilepsy should be involved in developing and implementing epilepsy education in life skills to ensure that it meets their needs and address their concerns.

Actions to fulfil the recommendation:

- Educators should establish partnerships with families of primary school learners with epilepsy. This can include engaging with families to gather input and feedback on epilepsy education in life skills.
- Educators should consult with families to identify their needs and concerns related to epilepsy education in life skills. This can include soliciting feedback on the content and delivery methods.

Validation of the developed guidelines

Validation is the process of ensuring that a guideline is accurate, reliable and based on strong evidence. The rationale for doing validation is to ensure that the guideline is trustworthy, and the recommendations are safe and effective for the target population. The process of validation typically involves reviewing the quality of evidence and ensuring that the recommendations are based on the best available evidence.

WHO (2014) emphasizes the importance of reviewing developed guidelines by experts before their implementation to ensure that they are feasible, evidence-based, and applicable to the target population. Additionally, the review process should be transparent to assess the guidelines' quality and identify any gaps before their implementation (WHO,2014).

To achieve this, the researcher employed the e-Delphi technique to conduct validation because it is a structured communication method that seeks to achieve a convergence of opinions among a group of experts and was used to reach a consensus among the group members (Botma et al., 2022). The e-Delphi technique was selected due to its capacity to gather individual perspectives on the guidelines without being influenced by other opinions, as would occur in a group setting using online platform.

- **Sampling technique**

The Delphi technique serves to enhance the comprehensibility and substantiation of outcomes obtained through surveys, focus groups and interviews (Botma et al., 2022). Therefore, a group of experts was selected using purposive sampling and it included primary school teachers, special school teachers, educational specialists, curriculum advisors, people living with epilepsy, health promotion officers, and caregivers of people with epilepsy. These experts, totalling 14, represented the provinces of Mpumalanga and Limpopo. For equal representation, effort was made to have seven experts for each province.

- **Data collection**

Upon the conclusion of guideline development, supervisors conducted an assessment of the guidelines and the researcher employed telephonic communication to engage specific experts. The purpose was to elucidate the study's objectives, disseminate the results obtained from the empirical phase, solicit consent from the experts to partake in the validation process and apprise them of the anticipated contributions. Subsequently, via email, each expert received the finalized guideline, a consent form, and an open-ended self-administered questionnaire. Table 2 shows the data collection tool.

Table 3: Data collection tool

QUESTIONNAIRE: VALIDATION OF GUIDELINES We value your subjective opinion regarding the developed guidelines. Please answer each question in the questionnaire based on your assessment of accuracy, clarity, relevance, comprehensiveness, flexibility, acceptability and overall quality.								
SECTION A: ACCURACY								
QUESTION	YES	NO	COMMENT					
1. To what extent do you believe the guidelines accurately reflect current knowledge and evidence in epilepsy education? Rate from 1-5 and substantiate			1	2	3	4	5	
2. Are there any specific statements or recommendations that you find inaccurate or unsupported by evidence? Please provide details.								
SECTION B: CLARITY								
1. How clear and understandable are the guidelines in terms of language and presentation?								
2. Are there any areas or statements that you find confusing or unclear? If yes, please provide examples.								
3. Is the guideline free from ambiguity?								
SECTION C: RELEVANCE								
1. Do you believe that the guidelines address the important aspects and challenges of epilepsy education in primary schools?								
2. Are the guidelines evidence-based?								
3. Are there any crucial areas or topics that you think should be included but are missing from the guidelines? Please elaborate.								
SECTION D: COMPREHESIVENESS								
1. Do you feel that the guidelines cover a wide range of relevant topics and considerations related to epilepsy life skills education?								
2. Are there any specific areas that you believe should be further expanded or elaborated upon?								
SECTION E: Flexibility								
1. Do you think the guidelines offer enough flexibility to accommodate different educational settings and diverse learner needs?								
2. Are there any suggestions you have to enhance the flexibility of the guidelines?								
SECTION F: ACCEPTABILITY								
1. How acceptable do you find the guidelines to be in terms of feasibility and practicality for implementation in primary schools?								
2. Are there any recommendations that you consider impractical or difficult to implement? Please provide examples.								
SECTION G: GENERAL ASSESSMENT								
1. On a scale of 1 to 5, how would you rate the overall quality and usefulness of the guidelines			1	2	3	4	5	
2. Do you have any general comments or feedback regarding the guidelines that have not been covered in the previous questions?								

The primary objective of the validation process was to determine whether the guidelines were clearly and precisely developed, feasible, evidence-based, and free from ambiguous words. After the presentation, each expert was given an open-ended questionnaire to rate the guidelines independently without influencing the opinions of others. The experts were given a week to review the and guidelines and send the questionnaire of the first round back.

3. Analysis

Demographic characteristics

Fourteen experts from Limpopo and Mpumalanga provinces participated in guideline validation. Out of the fourteen experts, nine were female, while the remaining five were male. The educational background of these experts varied, encompassing both degrees and diplomas. In terms of age, the experts ranged from twenty-five to sixty-four years old. For a detailed overview of the demographic characteristics of the experts involved, please refer to Table 3.

Table 4: Demographic characteristics

Demographics		Frequency (N=14)	Percent
Gender	Male	5	36%
	Female	9	64%
Age	25-30	2	14%
	31-49	8	57%
	50-64	4	29%
Level of Education	Degree/	5	36%
	Diploma	9	64%
Job Title	Caregivers of PLWE	2	14.3%
	Teachers	3	21.4%
	Curriculum advisors	1	7.1%
	Special school teachers	4	28.6%
	Educational Specialist	1	7.1%
	Health promotion officers	2	14.3%
	PLWE	1	7.1%
Total		14	100%

- **Round ne analysis**

Upon receiving the responses from the experts, a descriptive analysis was performed on the gathered data. All participants who agreed to take part in the validation process provided

responses to the questionnaires, ensuring a complete dataset for analysis. The qualitative aspect of the analysis focused on evaluating the guidelines in terms of accuracy, clarity, relevance, comprehensiveness, flexibility, and acceptability.

The results indicated that all participants (100%) perceived the guidelines to be accurate, comprehensive, flexible enough to accommodate different educational settings, and generally acceptable. Among the fourteen participants, nine individuals specifically emphasized the relevance of incorporating the principles of *Ubuntu* such as love, kindness, compassion, and empathy, into the provision of epilepsy education in primary schools. During the general assessment of the guidelines, the analysis revealed that the guidelines were well-developed overall and unambiguous. Below is the table showing validation results.

Table 5: Guidelines Validation results

EVALUATION CRITERIA	PERCENTAGE OF AGREEMENT (%)	FINDINGS AND OBSERVATIONS
ACCURACY	100%	All participants agreed that the guidelines were accurate.
CLARITY	100%	All participants agreed that the guidelines were clear.
RELEVANCE	64%	Nine participants emphasized the importance of incorporating *ubuntu* principles in epilepsy education.
COMPREHENSIVENESS	100%	All participants agreed that the guidelines were comprehensive.
FLEXIBILITY	100%	All participants agreed that the guidelines were flexible to accommodate different educational settings.
ACCEPTABILITY	100%	All participants found the guidelines to be acceptable.
GENERAL ASSESSMENT	100%	All participants unanimously gave the guidelines the highest rating of 4 out of 5 in terms of overall quality and usefulness.
		The guidelines were overall well-developed and unambiguous.

- **Round two analysis**

To ensure consensus, the guidelines were amended to include the incorporation of *ubuntu* principles and a second round of questionnaires was distributed among the experts together

with the amended guidelines. The results showed that the guidelines were feasible and unambiguous, and the expert group agreed on their applicability to the target population. The transparent validation process ensured the quality of the guidelines, and their implementation was likely to be successful.

Discussion

The discussion highlights guidelines for incorporating epilepsy life skills education programs into primary school curricula. Key recommendations include developing age-appropriate content tailored to the needs of primary school learners, delivering programs in various settings, involving families in program development and implementation and providing training for primary school teachers and healthcare providers on epilepsy and how to support students with epilepsy. These recommendations are consistent with the findings of other studies conducted in the field of epilepsy education. Eze (2015) and Goel (2014) found that incorporating epilepsy education into school curricula can improve knowledge and attitudes toward epilepsy among students. Another study by Nevin et al. (2020) emphasized the importance of tailoring epilepsy education to the needs of learners, including information on seizure recognition and management, medication management, and coping strategies.

Similarly, studies by England et al. (2012) and Musekwa et al. (2020) highlighted the need for delivering epilepsy education in various settings, such as classrooms, hospitals, and community centers and involving trained educators or healthcare providers. The study also emphasized the importance of collaboration between healthcare providers, educators, and policymakers in developing and implementing epilepsy education.

In terms of the validation process, this study employed the e-Delphi technique to ensure the accuracy and reliability of the developed guidelines. This approach is consistent with the recommendations of the World Health Organization (WHO, 2014), which emphasizes the importance of involving experts in the review and validation of guidelines before their implementation.

The results of the validation process indicated a high level of agreement among the experts regarding the accuracy, clarity, relevance, comprehensiveness, flexibility, acceptability, and overall quality of the guidelines. This suggests that the guidelines developed in this study are trustworthy and can be considered safe and effective for primary schools.

The developed guidelines for the inclusion of epilepsy in life skills education in primary schools are supported by the findings of other studies. The validation process using the e-Delphi technique confirmed the accuracy, clarity, relevance, comprehensiveness, flexibility,

acceptability, and overall quality of the guidelines. These guidelines provide valuable insights for policymakers, educators, epilepsy life skills advisors and healthcare providers involved in epilepsy education in primary schools. The guidelines emphasize the importance of developing evidence-based and culturally appropriate programs and involving families. Further research and collaboration among stakeholders are necessary to ensure the effective implementation and continuous improvement of epilepsy education programs. Implementing these guidelines can improve knowledge, attitudes, and skills related to epilepsy among primary school learners, and future research should focus on evaluating the long-term impact of these guidelines.

Limitations of the study

Limited Generalizability: The study was conducted in the Limpopo and Mpumalanga provinces of South Africa, which may limit its generalizability to other regions or countries with different socio-cultural contexts.

Moderate to Low-Quality Studies: The systematic review that followed PICO found that some of the studies included in the review were of moderate to low quality according to the GRADE system, which may affect the validity and reliability of the evidence base for the guidelines.

Lack of Long-term Evaluation: The study did not include a long-term evaluation of the implementation and impact of the guidelines on the knowledge, attitudes and behaviours of primary school learners and teachers regarding epilepsy life skills.

Conclusion

By implementing these life skills guidelines, primary school learners with epilepsy will have improved knowledge and understanding of epilepsy, values and attitudes towards epilepsy, and skills related to recognizing and responding to seizures. Additionally, this will create a supportive environment for learners with epilepsy, enabling them to reach their full potential.

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SECTION C: CONCLUSIONS, RECOMMENDATION, AND STUDY LIMITATIONS

Conclusions

Article/Manuscript 1: Perceptions of teachers regarding the inclusion of epilepsy education in life skills for primary learners and teachers in Limpopo and Mpumalanga provinces (South Africa)- Conclusion

The primary goal of the study was to investigate the perception of teachers in the provinces of Limpopo and Mpumalanga on the need of incorporating epilepsy education in the teaching life skills to primary learners. Four major themes emerged from the analysis of the data: teachers' knowledge of epilepsy, their opinions regarding the value of including epilepsy education in life skills, their suggested delivery methods for epilepsy education, and their viewpoints regarding the knowledge to be covered in the epilepsy life skills program. The findings demonstrated that by concentrating on the ideas put forth by the participating instructors, integrating epilepsy education into life skills programs can enhance comprehension and knowledge regarding epilepsy.

Article/Manuscript 2: Inclusion of epilepsy in life skills education of primary school learners: The perceptions of life skills advisors in Mpumalanga and Limpopo Provinces- Conclusion

The investigation of the opinions of life skills educational advisers in the provinces of Limpopo and Mpumalanga on the inclusion of epilepsy teachings in life skills education for primary school learners and teachers was the main goal of the study. Four key issues emerged from the examination of the data: the advisers' understanding of epilepsy, the advantages of integrating epilepsy education into life skills, the topics to be covered in epilepsy education, and the approaches to teaching epilepsy.

The study's conclusions showed that including epilepsy education in life skills programs would improve primary school learners' life skills by increasing their knowledge and understanding of epilepsy, forming their values and attitudes, and preparing them with response and management skills related to epilepsy using the various teaching methods identified.

Article/Manuscript 3: Incorporation of Epilepsy into Life Skills Education: Perceptions of Primary School Learners in Mpumalanga and Limpopo Provinces—A Qualitative Exploratory Study- Conclusion

The study's findings highlighted the significance of including epilepsy education in life skills curricula in primary schools. It has been discovered that educating students about epilepsy helps to change attitudes toward those who live with the condition and to increase societal awareness, understanding, and acceptance of epilepsy. The study also provided

recommendations for how epilepsy might be taught in life skills instruction, which might improve the learning and retention process.

Article/Manuscript 4: A Conceptual Framework to Enhance Education on Life Skills Related to Epilepsy in Primary Schools- Conclusion

The conceptual framework to enhance epilepsy education in primary schools and concluded that the three-legged stool conceptual model and Dickoff's practice oriented theory can be combined with the *Ubuntu* philosophy to create a more thorough and inclusive approach to epilepsy education, one that emphasizes knowledge and understanding, exploring values and attitudes, and developing skills and social interaction related to epilepsy.

Article/Manuscript 5: Development and Validation of Epilepsy Life Skills Guidelines for Primary School Learners and Teachers in Limpopo and Mpumalanga Provinces- Conclusion

Through the implementation of these life skills guidelines, primary school learners living with epilepsy, those living without epilepsy, teachers and community members may experience enhanced knowledge and comprehension of epilepsy, develop positive values and attitudes towards the condition, and acquire skills to identify and respond to seizures. Moreover, the implementation of these guidelines will foster a supportive and inclusive environment for learners with epilepsy, empowering them to maximize their abilities and achieve their academic potential.

Overall conclusion of the thesis

For primary learners and teachers, incorporating epilepsy knowledge into life skills may have a significant positive impact. It may improve safety and first aid response, encourages awareness and acceptance among learners, increases teachers' understanding of epilepsy, and fosters a more inclusive learning environment. A thorough and inclusive approach can help teachers to promote empathy, lessen stigma, and give people living with epilepsy the support they need. Adopting certain policies and educational initiatives may improve understanding, lessen social and psychological effects, and enhance the overall quality of life for people with epilepsy and their family. These initiatives help create a more equitable and encouraging educational environment that enables all students to succeed. When the learners and teachers are knowledgeable about epilepsy, automatically the rest of the community may also be informed which may decrease stigma related to epilepsy as well as misconceptions.

Recommendations

Based on the findings and implications of this research, the following recommendations are provided for policy makers, the Department of Health, the Department of Education, life skills educational advisors, learners, teachers, people living with epilepsy and community members:

Policy makers:

Policy makers play a crucial role in shaping the educational landscape. It is recommended that they develop inclusive policies that prioritize the integration of epilepsy education into the curriculum. These policies should provide clear guidelines and support for teachers and life skills advisors to effectively deliver epilepsy education. Additionally, policy makers should allocate resources to support training programs and provide necessary materials for educators. By prioritizing epilepsy education in policies, policy makers can promote a more inclusive and informed educational system.

Department of Health:

Collaboration between the Department of Health and the Department of Education is vital for effective epilepsy education. The Department of Health should work closely with the Department of Education to ensure that epilepsy education is integrated into life skills programs. They should provide guidance and training to healthcare professionals to enhance their knowledge of epilepsy and equip them with the necessary skills to support individuals with epilepsy. By fostering this collaboration, the Department of Health can contribute to creating a comprehensive and coordinated approach to epilepsy education.

Department of Education:

The Department of Education should take the lead in incorporating epilepsy education into the curriculum. It is recommended that epilepsy education be included within life skills, as it provides a suitable platform to address various aspects of epilepsy. The Department should provide clear guidelines and support materials to assist teachers and life skills advisors in effectively delivering epilepsy education. Additionally, the Department should offer professional development opportunities for teachers to enhance their understanding of epilepsy and equip them with inclusive teaching strategies. By prioritizing epilepsy education, the Department of Education can ensure that learners receive accurate information and support in an inclusive learning environment.

Life Skills educational advisors:

Life skills advisors play a crucial role in delivering epilepsy education to learners. It is recommended that they stay updated with current research and best practices in epilepsy education. They should actively collaborate with teachers to develop effective strategies for delivering epilepsy education within the life skills curriculum. By sharing their expertise and knowledge, life skills advisors can contribute to the successful implementation of epilepsy education and ensure that learners receive comprehensive support.

Learners:

Learners themselves have an important role to play in epilepsy education. They should be encouraged to actively participate in epilepsy education initiatives and create awareness campaigns within their schools and communities. By engaging in these activities, learners can foster a culture of empathy, respect and inclusivity towards individuals with epilepsy. They can also serve as advocates for their peers, helping to reduce stigma and create supportive environments.

Teachers:

Teachers are at the forefront of epilepsy education in the classroom. It is recommended that they attend professional development programs focused on epilepsy education to enhance their knowledge and teaching strategies. They should create inclusive classroom environments that support learners with epilepsy, ensuring that necessary accommodations are provided when required. By implementing inclusive teaching practices, teachers can foster an inclusive and supportive learning environment for all learners, regardless of their background or abilities.

People living with epilepsy:

Individuals living with epilepsy should advocate for their rights and inclusion in educational settings. By sharing their experiences and stories, they can raise awareness and contribute to reducing stigma surrounding epilepsy. Their first-hand insights can provide valuable perspectives for teachers, helping them better understand the challenges faced by individuals with epilepsy and develop appropriate support strategies.

Community members:

Community members have a vital role to play in supporting epilepsy education. They can support local initiatives that promote epilepsy awareness and inclusion in schools and communities. Community members can actively participate in awareness campaigns, educational events and fundraising activities that support epilepsy education. By fostering a

supportive and inclusive environment that values empathy, understanding, and acceptance of individuals with epilepsy, community members can contribute to creating a more inclusive society.

In conclusion, policymakers, the Departments of Health and Education, life skills advisors, learners, teachers, people with epilepsy, and community members can all work together by putting these recommendations into practice to build a more inclusive and supportive educational system. This group effort strives to empower people with epilepsy, lessen the stigma and advance a culture that values inclusion and diversity. Learners may have increased knowledge and comprehension, positive values and attitudes, and abilities linked to recognizing and reacting to seizures as a result of the integration of epilepsy education. Additionally, fostering an environment of support for students with epilepsy may help them realize their full potential and succeed in their academic endeavours.

Contribution of the Thesis

The contribution of this thesis lies in several key areas:

Research gap: The thesis addresses a research gap by exploring the perceptions of teachers, learners and life skills educational advisors regarding the inclusion of epilepsy education in life skills for primary learners and teachers. It adds to the limited literature available on this topic, particularly in the specific context of Limpopo and Mpumalanga provinces in South Africa.

Conceptual framework: The thesis developed a conceptual framework that combines the three-legged stool and Dickoff's conceptual model with the Ubuntu philosophy. This framework provides a comprehensive and inclusive approach to epilepsy education, emphasizing knowledge promotion, values and attitudes exploration and skills development.

Guideline development and validation: This thesis has successfully developed and validated the effectiveness of the Epilepsy Life Skills Guidelines for Primary School Learners and Teachers in Limpopo and Mpumalanga provinces. These guidelines can be utilized to integrate epilepsy education into life skills education.

Recommendations: The thesis provides practical recommendations for various stakeholders involved in epilepsy education, including policy makers, the Department of Health, the Department of Education, life skills advisors, the body of knowledge, learners, teachers, individuals living with epilepsy, and community members. These recommendations offer

guidance on integrating epilepsy education into the curriculum, raising awareness, reducing stigma, improving support and fostering inclusive educational environments.

Educational implications: The thesis has significant educational implications. By integrating epilepsy education into life skills programs, it promotes awareness, understanding, and acceptance of epilepsy among teachers and learners. It also equips teachers with the knowledge and skills to support students with epilepsy effectively. Furthermore, it emphasizes the importance of creating a supportive and inclusive learning environment that benefits all learners, including those with epilepsy.

Body of knowledge: This thesis has made a valuable academic contribution by publishing empirical research findings in peer-reviewed journals. In total, three articles have been published, with one article accepted for publication in the upcoming second issue of 2023. Additionally, two manuscripts are currently being reviewed by experts in the field.

These guidelines provide a comprehensive framework that emphasizes tailoring education to individual learner needs, involving families, and ensuring cultural sensitivity, making them adaptable to diverse educational settings and addressing the needs of students with epilepsy worldwide.

Limitations of the Study

The researcher acknowledges the presence of certain limitations in the study. Due to the utilization of qualitative multi-methods research approach, the findings cannot be generalized to the entire population of Limpopo and Mpumalanga provinces or to other regions within the country. However, it is worth noting that the aim of this research was not to achieve broad generalizability, but rather to provide in-depth insights and understanding of the specific context examined.

To further enhance the findings and address the limitations, the researcher suggests future research to incorporate a mixed-methods approach. By combining qualitative and quantitative methodologies, a more comprehensive understanding of epilepsy education in the given context can be obtained. This approach would enable researchers to not only explore perceptions and experiences, but also gather broader quantitative data that can be analysed statistically, thereby augmenting the overall findings.

The researcher believes that by expanding the research scope and incorporating a mixed-methods approach, future studies can build upon the current knowledge base, further refining the understanding of epilepsy education in the targeted provinces. This will contribute to the development of more comprehensive and evidence-based strategies to support individuals with epilepsy in educational settings.

ANNEXURES

ANNEXURE A: Ethical Clearance Certificate University of Venda

ETHICS APPROVAL CERTIFICATE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Prof L Makhado

STAFF NO:
13663

PROJECT TITLE: Epilepsy intervention programme in rural communities of Limpopo and Mpumalanga provinces.

PROJECT NO: SHS/19/PH/37/2101

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof L Makhado	University of Venda	Investigator – Staff
Dr A Maphula	University of Venda	Investigator
Dr JT Mabunda	University of Venda	Co- Investigator
Prof SM Maputle	University of Venda	Co- Investigator
Prof RT Lebese	University of Venda	Co- Investigator
Snr. Prof LB Khoza	University of Venda	Co- Investigator
Mrs TG Makhado	University of Venda	Co- Investigator
Mr MJ Chueng	University of Venda	Co- Investigator
Ms M Nemathaga	University of Venda	Co- Investigator
Ms Q Chabangu	University of Venda	Co- Investigator

Type: **Staff Research**
Risk: **Minimal risk to humans, animals or environment**
Approval Period: **January 2020 – December 2023**

The Human and Clinical Trails Research Ethics Committee hereby approves your project as indicated above.

General Conditions
While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following.

- The project leader (principle investigator) must report in the prescribed format to the REC:
  - Annually (or as otherwise requested) on the progress of the project, and upon completion of the project
  - Within 48hrs in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
  - Annually a number of projects may be randomly selected for an external audit.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project. The project leader must apply for approval of these changes at the REC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date; a new application must be made to the REC and new approval received before or on the expiry date.
- In the interest of ethical responsibility, the RECs retains the right to:
  - Request access to any information or data at any time during the course or after completion of the project,
  - To ask further questions; Seek additional information; Require further modification or monitor the conduct of your research or the informed consent process.
  - withdraw or postpone approval if:
  - Any unethical principles or practices of the project are revealed or suspected.
  - It becomes apparent that any relevant information was withheld from the REC or that information has been false or misrepresented.
  - The required annual report and reporting of adverse events was not done timely and accurately,
  - New institutional rules, national legislation or international conventions deem it necessary

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE
Date Considered: January 2020

Name of the Chairperson of the Committee: Dr NS Mashau

Signature:

UNIVERSITY OF VENDA
OFFICE OF THE DIRECTOR
RESEARCH AND INNOVATION
2021 -11- 19
Private Bag X5050
Thohoyandou 0950

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 FAX (015) 962 9060
"A quality driven financially sustainable, rural-based Comprehensive University"

ANNEXURE B: University Higher Degree Approval Letter To Conduct The Study

UNIVERSITY OF VENDA

OFFICE OF THE DVC: RESEARCH AND POSTGRADUATE STUDIES

TO : MR/MS T.G MAKHADO

FACULTY OF HEALTH SCIENCES

FROM: PROF. N.N FEZA

DVC: RESEARCH AND POSTGRADUATE STUDIES

DATE : 28 FEBRUARY 2022

DECISIONS TAKEN BY UHDC OF 28th FEBRUARY 2022

Application for approval of Thesis Proposal Report in Faculty of Health Sciences: T.G Makhado (14007248)

Topic: "Development of Epilepsy Life Skill-Based Education Guidelines for Learners in Mpumalanga and Limpopo Provinces, South Africa."

Supervisor	UNIVEN	Prof. R.T Lebese
Co-supervisor	UNIVEN	Prof. M.S Maputle

UHDC approved Thesis proposal

PROF N.N FEZA
DVC: RESEARCH AND POSTGRADUATE STUDIES

ANNEXURE C_1: Request To Conduct The Study Department Of Education Limpopo Province

Makhado Thendo Gertie

P O Box 280

Mukula

0978

Head of Department

Department of Education, Limpopo

Private Bag X9484

POLOKWANE

0700

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN PRIMARY SCHOOLS

Dear Sir/Madam

I am Makhado Thendo Gertie, a PhD candidate in the Department of Advanced Nursing Sciences, Faculty of Health Sciences at the University of Venda. The study I would like to undertake for my PhD is entitled **Epilepsy life skill education guidelines for primary schools in Limpopo and Mpumalanga provinces of South Africa.** This project will be conducted under the GladAfrica Epilepsy Project at the University of Venda being supervised by Prof R.T Lebese (Promoter) and Prof M.S Maputle (Co-Promoter).

To provide participants for the project, I am seeking your permission to approach a limited number of primary schools in Limpopo Province. I have provided you with a copy of the thesis proposal, which includes measures to ensure that informed consent will be obtained during the research process, as well as a copy of the approval letter from the Research Ethics Committee of the University of Venda.

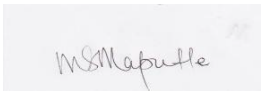
In the event that the study is completed, I commit to present and submit the final research report to the Department of Education. Whenever you need further information, please do

not hesitate to contact me by phone at 0662727183 or by e-mail at thendogertie@gmail.com. I appreciate your time and consideration in this matter.

Yours sincerely,

Makhado T.G Signature: 

Promoter: Prof Lebese RT Promoter signature: 

Co-Promoter: Prof Maputle MS Co-Promoter Signature: 

ANNEXURE C_2: Request To Conduct The Study Department Of Education Mpumalanga Province

P O Box 280

Mukula

0978

14 February 2022

The Head of the Department

Private bag X11341

NELSPRUIT

1200

Republic Of South Africa

ATTENTION: RESEARCH UNIT (A.H BALOYI)

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN PRIMARY SCHOOLS

Dear Sir/Madam

I am Makhado Thendo Gertie, a PhD candidate in the Department of Advanced Nursing Sciences, Faculty of Health Sciences at the University of Venda. The study I would like to undertake for my PhD is entitled **Epilepsy life skill education guidelines for primary schools in Limpopo and Mpumalanga provinces of South Africa.** This study aims to develop an Epilepsy life skill guideline for primary learners in Limpopo and Mpumalanga Province and the duration of this study is 3 years. The interview guides and the focus group discussion will be used when collecting data. This project will be conducted under the GladAfrica Epilepsy Project at the University of Venda being supervised by Prof R.T Lebese (Promoter) and Prof M.S Maputle (Co-Promoter).

To provide participants for the project, I am seeking your permission to approach a limited number of primary schools in Mpumalanga Province. The outcomes of this study may promote inclusive education and therefore the rate at which epileptic learners drop out of school because of stigma could be reduced. It may also promote teachers' knowledge and ability to provide first aid during an epileptic attack.

I have provided you with a copy of the thesis proposal, which includes measures to ensure that informed consent will be obtained during the research process, as well as a copy of the approval letter from the Research Ethics Committee of the University of Venda. The copy of the proposal also includes the problem statement, aims and objectives, duration of the project, instrument to be used and also the significance of the study.

In the event that the study is completed, I commit to present and submit the final research report to the Department of Education. Whenever you need further information, please do not hesitate to contact me by phone at 0662727183 or by e-mail at thendogertie@gmail.com. I appreciate your time and consideration in this matter.

Yours sincerely,

Makhado T.G

ANNEXURE D_1: Approval To Conduct The Study From The Department Of Education Limpopo Province

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

CONFIDENTIAL

Ref: 2/2/2 Enq: Makola MC Tel No: 015 290 9448 E-mail:MakolaMC@edu.limpopo.gov.za

Makhado TG
Makumeke Mxadzi's
Velley Malamulele
0982

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

1. The above bears reference.
2. The Department wishes to inform you that your request to conduct research has been approved. Topic of the research proposal: **"EPILEPSY LIFE SKILLS EDUCATION GUIDELINES FOR PRIMARY SCHOOLS IN LIMPOPO AND MPUMALANGA PROVINCES,SOUTH AFRICA. "**
3. The following conditions should be considered:

3.1 The research should not have any financial implications for Limpopo Department of Education.

3.2 Arrangements should be made with the Circuit Office and the School concerned.

3.3 The conduct of research should not in anyhow disrupt the academic programs at the schools.

3.4 The research should not be conducted during the time of Examinations especially the fourth term.

3.5 During the study, applicable research ethics should be adhered to; in particular the principle of voluntary participation (the people involved should be respected).

3.6 Upon completion of research study, the researcher shall share the final product of the research with the Department.

Cnr 113 Biccard & 24 Excelsior Street, POLOKWANE, 0700, Private Bag X 9489, Polokwane, 0700
Tel:015 290 7600/ 7702 Fax 086 218 0560

ANNEXURE D_2: Approval To Conduct The Study From The Department Of Education Mpumalanga Province

education
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

Ikhamanga Building, Government Boulevard, Riverside Park, Mpumalanga Province
Private Bag X11341, Mbombela, 1200.
Tel: 013 766 5552/5115, Toll Free Line: 0800 203 116

Lifiko le Temfundvo, Umnyango we Fundo | Departement van Onderwys | Ndzawulo ya Dyondzo

Makhado Thendo Gertie
University of Venda
Tel: 066 272 7183
Email: thendogertie@gmail.com

RE: "EPILEPSY LIFE SKILL EDUCATION GUIDELINES FOR PRIMARY SCHOOL TEACHERS AND LEARNERS IN LIMPOPO AND MPUMALANGA PROVINCES OF SOUTH AFRICA"

Your application to conduct research study was received and is therefore acknowledged. The tittle of your research project reads: **"Epilepsy life skill education guidelines for primary school teachers and learners in Limpopo and Mpumalanga provinces of South Africa"**. I trust that the aims and the objectives of the study will benefit the whole department especially the beneficiaries. Your request is approved subject to you observing the provisions of the departmental research policy which is available in the department website. You are requested to adhere to your university's research ethics as spelt out in your research ethics.

In terms of the research policy, data or any research activity can be conducted after school hours as per appointment with affected participants and COVID -19 regulations to observed. You are also requested to share your findings with the relevant sections of the department so that we may consider implementing your findings if that will be in the best interest of the department. To this effect, your final approved research report (both soft and hard copy) should be submitted to the department so that your recommendations could be implemented. You may be required to prepare a presentation and present at the departments' annual research dialogue.

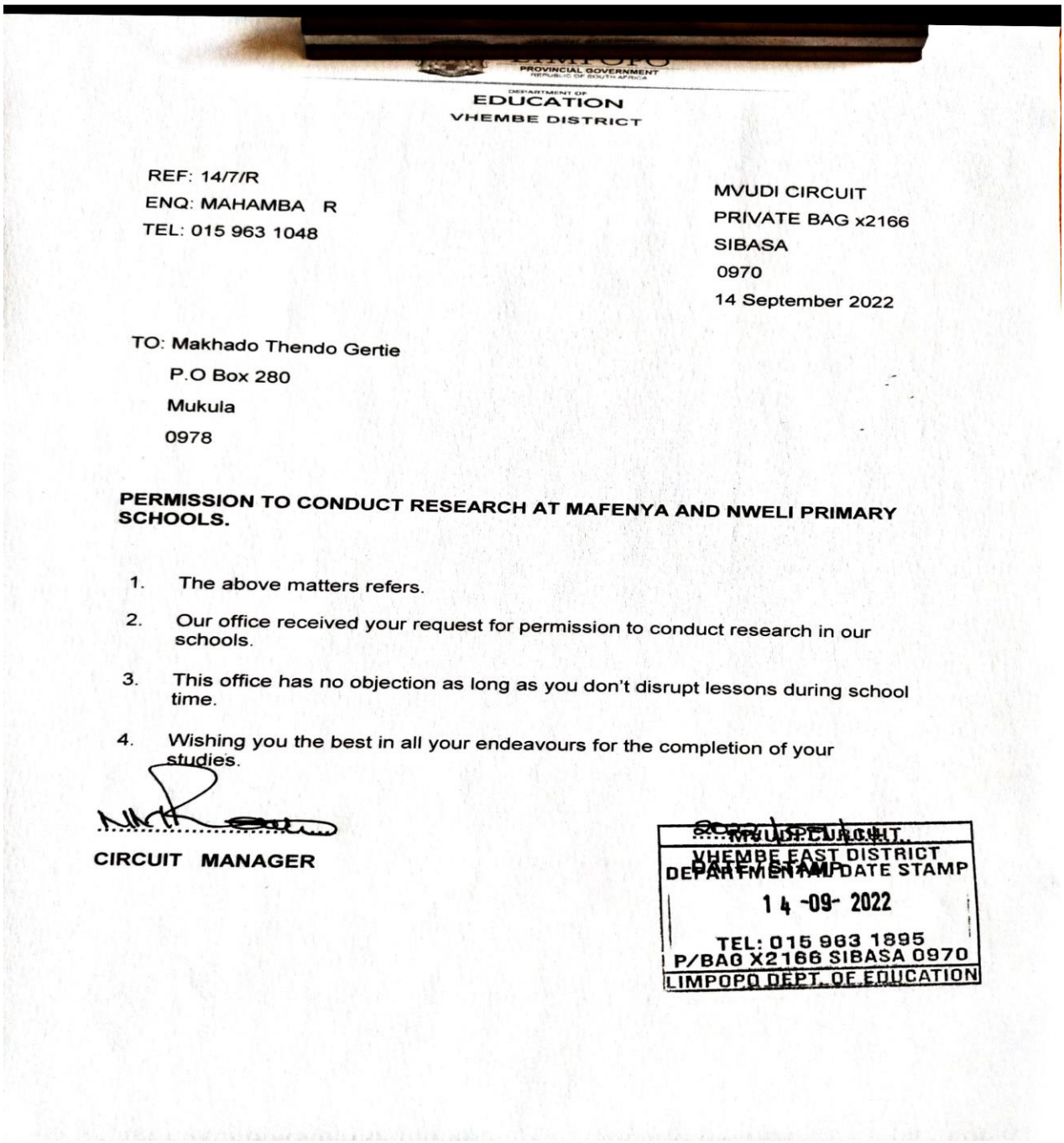
For more information kindly liaise with the department's research unit @ 013 766 5124/5148 0r n.madihlaba@mpuedu.gov.za
The department wishes you well in this important project and pledges to give you the necessary support you may need.

MRS LH MOYANE
HEAD: EDUCATION

01 / 06 / 2022
DATE

MPUMALANGA
THE PLACE OF THE RISING SUN

ANNEXURE D_3: Approval To Conduct The Study From The Department Of Education Limpopo Province, Mvudi Circuit



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION
VHEMBE DISTRICT

REF: 14/7/R
ENQ: MAHAMBA R
TEL: 015 963 1048

MVUDI CIRCUIT
PRIVATE BAG x2166
SIBASA
0970
14 September 2022

TO: Makhado Thendo Gertie
P.O Box 280
Mukula
0978

PERMISSION TO CONDUCT RESEARCH AT MAFENYA AND NWELI PRIMARY SCHOOLS.

1. The above matters refers.
2. Our office received your request for permission to conduct research in our schools.
3. This office has no objection as long as you don't disrupt lessons during school time.
4. Wishing you the best in all your endeavours for the completion of your studies.

CIRCUIT MANAGER

MVUDI CIRCUIT
VHEMBE EAST DISTRICT
DEPARTMENTAL DATE STAMP
14 -09- 2022
TEL: 015 963 1895
P/BAG X2166 SIBASA 0970
LIMPOPO DEPT. OF EDUCATION

ANNEXURE E_1: University of Venda Informed Consent form for Participant Interviews

RESEARCH ETHICS COMMITTEE

UNIVEN Informed Consent

LETTER OF INFORMATION

Title of the Research Study: **Epilepsy life skills education guidelines for primary schools in Limpopo and Mpumalanga provinces, South Africa**

Principal Investigator/s/ researcher: Makhado Thendo Gertie,
Qualification: Master's in nursing.

Co-Investigator/s/supervisor/s: Prof R.T Lebese,
Qualification: PhD in Nursing

Prof M.S Maputle,
Qualification: PhD in Nursing

Brief Introduction and Purpose of the Study: Epilepsy is regarded as a brain disease that is very common and affects about 70 million people worldwide and it is characterized by the presence of seizures (Thijs et al., 2019). Seizures that are associated with epilepsy may last for a few minutes being characterized by a sudden fall, blank stare, or jerking movements. Adequate knowledge related to epilepsy is of great importance and a necessity worldwide because misconceptions and stigma surround this condition.

This study aims to develop life skills education guidelines for primary school learners of Limpopo and Mpumalanga provinces.

Outline of the Procedures: Multimethod research is used in this study to fulfil its purpose. Purposive sampling will be used to sample the primary schools, teachers, life skills educational advisors and learners. Focus group discussions for learners and in-depth interviews for life skills educational advisors and teachers will be used to collect data. Sample size will be determined by data saturation.

Risks or Discomforts to the Participant: No risk

Benefits: The significance of the study will be based on the discussion under the following structures: Learners, people living with epilepsy, teachers, department of education, Body of knowledge and community members

Reason/s why the Participant May Be Withdrawn from the Study: There will be no penalties if you want to withdraw from the study or if you do not want to answer some of the questions especially if they are violating your rights.

Remuneration: There will be no remuneration

Costs of the Study: *None*

Confidentiality: The information that you give will be kept confidential. I undertake that all information provided by you will be used only for the purpose of the study. Everything that you will say will be treated as private and confidential and no-one will know what you will answer except the researcher

Persons to Contact in the Event of Any Problems or Queries:

Please contact the researcher (066 2727 183), my supervisor (072 4933 694) or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

General:

Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population.

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Thendo Gertie Makhado, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: SHS/20/PSYCH/12/2710 SHS/20/PSYCH/12/2710

- I have also received, read and understood the above-written information (*Participant Letter of Information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Names of Participant Date Time Signature

I, ……. **……** **……** **……..**

(*Name of researcher*) herewith confirm that the above participant has been fully

informed about the nature, conduct and risks of the above study.

Full Name of Researcher

……. Date**…….** Signature**……**

Full Names of Witness (If applicable)

……. Date **…….** Signature**……..**

Full Name of Legal Guardian (If applicable)

…… Date**……** Signature**…….**

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level- use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the Participants' file and not thrown away, and copies thereof must be issued to the participant.

ANNEXURE E_2: Assent form for Participant Focus Group Discussions

ASSENT FORM FOR PRIMARY LEARNERS

PROJECT CONTENT: EPILEPSY LIFE SKILLS EDUCATION GUIDELINES FOR PRIMARY SCHOOLS IN LIMPOPO AND MPUMALANGA PROVINCES, SOUTH AFRICA

Investigator: T.G. Makhado

We are conducting a research study about Epilepsy, developing life skills guidelines about epilepsy Research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked to interview a group of 6 people during your time at the school. There are some things you need to know about this study. This research study will only conduct interviews and there are no discomforts or risks associated with this study project. Not everyone who participates in this study will benefit. The results mean that something good is happening to you.

This study will benefit people living with Epilepsy, community members, students, and teachers. If you don't want to be in this research study, you can say so. No penalties will be imposed on you. When we are done with this lesson, we will write a report about what was learned. This report will not include your name or that you were in the study. You do not have to attend this study if you do not wish to attend. If you decide to stop after we start, that's okay too. If you decide you want to be in this study, please sign your name

I, _____, Want to be in this research study

_____ _____

(Signature) (Date)

ANNEXURE F_1: Interview Guide- Teachers And Life Skills Advisors

INTRODUCTION

I am Thendo Makhado, Thank you for agreeing to participate in this study. This study aims to **develop life skills education guidelines for primary school learners of Limpopo and Mpumalanga** as explained in the consent form. Now we need to find out from your point of view if it is important to include epilepsy in the life skills education for primary learners and to find out what can be included in the life skills guideline. You are not going to be called by your real name in this interview, you will be referred to as participant 'A, B, C' and so on to protect your identity and your answers will be kept confidential.

QUESTION	PARTICIPANT RESPONSE
1. **What do you Know about epilepsy?**	
2. **What are your perceptions regarding the need to include epilepsy in life skills education?**	
3. **What is the possible key epilepsy life skills education content that can be included in the primary level from grade to grade?**	
4. **What kind of teaching method can be used in teaching epilepsy in life skills education?**	

ANNEXURE F_2: Focus Group Discussions Guide-Learners

INTRODUCTION

ESTABLISHING RAPPORT BETWEEN THE RESEARCHER AND LEARNERS

Thank you for being here and agreeing to participate in this study. This study aims to develop life skills education guidelines for primary school learners of Limpopo and Mpumalanga as explained In the consent form. Now we need to find out from your point of view if it is important to include epilepsy in the life skills education for primary learners and to find out which elements of epilepsy you think you would like to learn. Remember to call yourselves 'A' then the next one will be 'B', the third one will be 'C' and so on until we all have a letter that is assigned to us as a code that we will be called by for this discussion. Remember you have the choice to take part in this study or not, and your decision will not have any impact on your studies.

QUESTIONS

- Can you describe what you understand about epilepsy?

probe

- Is it necessary to include epilepsy in life skills studies?
- In your opinion, what are some of the reasons why epilepsy should be included in life skills education?

Probe

Break break break break Break break break break Break break break

- If epilepsy education were to be included in life skills education, what specific topics or information do you think should be covered to best support learners with epilepsy?

Probe

- Can you discuss any teaching methods that you find effective for learning about epilepsy?

Probe

- How do you think learners can best develop skills for managing their condition, and what resources might be helpful for this?

Probe

Thank you very much for your time and the information you shared today

ANNEXURE G_1: Interview Transcript Of Teachers

TEACHER 2 (female, 40yrs, 10 years teaching experience)

Q: what do you know about epilepsy?

A: Mmmm … I know that epilepsy is a disease of a person who tends to fall.

Q: if you were to explain more about epilepsy what kind of a disease would you say it is?

A: aaah!… as I have said, I know epilepsy to be a disease of falling. A person with epilepsy even their state of mind isn't fully functional. Sometimes they do well and sometimes they do not. Eeehhh sometimes in our culture we tend to say if the moon Is half an epileptic person will tend to be unwell.

Q: so, what are your views about including epilepsy in life skills education?

A: Mmmm…It is very important.

Q: Why do you say so?

A: Because at school we do have children with epilepsy, so if in life skills we teach epilepsy they learn about epilepsy they will know about the disease even if the diseases will attack that learner that day the learner will know that today I might be having epilepsy, I must stay away from maybe from sun, from playing with water it is important for it to be part of life skills curriculum.

Q: so, which group will it help on the should be taught this epilepsy?

A: group as in foundation phase group or?

Q: let me rephrase the question, who will benefit from this inclusion of epilepsy in life skills?

A: It will benefit everyone, eeh!!! anyone will benefit because we find that here at schools' teachers will also learn and some other learners at home they do have ehhh!!!!, what can I say? They might have anyone who has epilepsy, if they learn at school, they will assist the one at home with the information they get or got at school.

Q: Ohk, so if we were to include epilepsy in life skills what is it that you think is the best information to teach them in life skills, what exactly should they know about epilepsy?

A: they must know that if you have epilepsy is not the end of the world you will still survive like others, provided you… I don't know how I can put it, you stop doing things that will cause you

to have the epilepsy. Like as I mentioned before like playing in the sun, if the sun is too hot you must not play in the sun or the height you must avoid heights.

Q: If we were to include epilepsy in life skill education what content should be there that teacher would teach the learners regarding epilepsy?

A: Mmmmm..eish…I think it will have to be learners need to take care of themselves.

Q: Which method of teaching can we use to teach these learners about epilepsy so that at the end of the day they will know what epilepsy is?

A: Mmmmmm eee..maybe we must have a doll then you group the learners then you play with them with the doll you tell them that in the beginning the doll is happy and is emm..they well… we play with them and then all of a sudden the Sun becomes very hot, the doll fall and if the doll fall so you try to put something inside the doll's mouth, after they have fallen due to epilepsy we put something inside their mouth . Assuming they fall because they were playing in the sun. emphasizing that they must not play under the sun if its too hot. This will help if teachers are also taught epilepsy.

Q: Ohh! do you think it is important for educators also to be trained on epilepsy?
A: Yes!!! it is important because the child is with the educator more than 50% of their time the child is with the educator. So the educator must know well about this diseases.
Q: what is it that you would want to be trained on as an educator if you were to go for training what aspect would you want them to include?

A: I would want them to include if the child is attacked by the epilepsy as in now what am I going to do.

Q: And again another thing that should be included?
A: mmmmm, yeah I think its that.

Q: so with the life skill education for learners what aspect would you want us to include on epilepsy to teach learners?

A: Maybe the diet, I think they should be taught about the best food that will not cause them to have epilepsy".

Q: do you have any other things in mind except diet?

A: Mmmm,the place where they can play, places where they can play or things that they must play with, because sometimes kids are kids you find that someone comes with a frog while playing and say yeeeehhhh!!!!!!!!!! Then this one with epilepsy will be shocked and….fall

Q: ohk, thanks a lot I think we have come to the end of our questions thank you for participating in my study

A: Ohk.

ANNEXURE G_2: Interview Transcript Of Life Skills Educational Advisor

Life skills advisor 5 (Female, 23yrs of experience**)**

Q_ What do you know about epilepsy?

A_ It's a disease that I've got no idea with, but I normally see it to people.

Q_ What is it that people say about its what kind of disease is it?

A_ It's like people are having some fits and thereof it delays their progress in as far as thinking it's concerned especially when it comes to learning it sort of delays them their thinking ability becomes disturbed in a way.

Q_ Whose thinking ability becomes disturbed in a way is it people who have epilepsy?

A_ Yes people who have epilepsy.

Q_ So with the background that you have regarding epilepsy do you think it's important for us to include it in epilepsy guideline?

A_ I think it is very important because sometimes we encounter a problem when visiting a school, you find that there is a learner in the classroom that is encountering that disease. The teachers also do not know how to deal with that particular learner so if it can be included in life skills they can also be trained or workshopped on how to deal with a learner encountering that particular disease.

Q_ Who should be trained about epilepsy?

A_ I think everyone in the school from the FMT down to the teachers?

Q_who else Do you think it is also important to teach?

A_ I think it is very important to teach learners, mind you it might happen that the disease…. Because it comes anytime anywhere, it might happen that during break time learners are playing so if all people in that particular school wherever they are trained then they can help because **the learners will know how to support other learners who are suffering from the condition, I think it's very crucial that even learners be taught about that disease so that they can be aware.**

Q_ So if we were to include it on life skills what kind of aspects or information should we include to teach them about?

A_ **I think being aware of the different kinds of diseases and the precautions and how to take care of people leaving with such diseases how does it affect the ones around the person and also the effect of also the one who is not having that disease all that information can help a lot.**

Q_ So now when we are teaching these learners what kind of method can we use to teach them so that they master epilepsy and have the skill of managing like you said?

A_ I think with the foundation phase eh .. learners teaching them for understanding they need demonstrations, practical demonstrations of whatever that you are teaching they use drama, picture or a story whatever that can be used to give knowledge.

Q_ Teaching learners how will it assist the community?

A_ **The very same children who are at school are the ones who are forming part of the community they take the information back to the community and their parents they tell them what was happening. The parents also learn from their children then it's of the practical importance of teaching the learners so they can take the information back home**.

Q_ You mentioned earlier that teachers should also be trained about epilepsy what is it that we can include on their training?

A_ I think what can be included is a teacher's guide to sort of the teacher should know what to do and how to deal with a situation at hand why should he or she do that. So, a teacher's guide is very important so he or she can know what to at a given time.

Q_ So personally so how do you feel about epilepsy not being included in education?

A_ I think it's something that has been neglected and it is of great importance that it be included in the curriculum because it's something that people live with and it needs to be taught and dealt with in a correct manner everyone can be aware of it. I think it's high time now that it be included on the curriculum because it's something, we are leaving with on our day to day life situation.

ANNEXURE G_3: Focus Group Discussion Transcript For Learners

FOCUS GROUP DISCUSSION NUMBER 2

Interviewer: Okay friends, we're starting okay? Have you ever heard about epilepsy? If you have what is epilepsy?

Interviewer: Be louder when you respond neh. A

Participant A: We call it.. (silence)

Participant C: I know is an illness of death coming from spirits (voice faiding)

Interviewer: tell me more !

Participant C: I don't know epilepsy much.

Interviewer: Who else know about epilepsy? A? What do you know about epilepsy? Tell me everything you know.

Participant A: I know that epilepsy... when a person falls, they're ill or… but I've never seen anyone falling.

Interviewer: You've never seen anyone falling? Okay so what do you know (about the illness)? Tell me whatever it is that you know even if you've never seen anyone with it… Whatever it is you've heard, tell me.

Participant A: I've heard that a person… that there's someone who died from it who fell in the river alone

Interviewer: Okay, you've only heard that. D. Tell us what you know about epilepsy, okay? Anything that you know.

Participant D: I've only heard that there's someone who's ill… at home who has epilepsy.

Interviewer: How did you know that that person has epilepsy

Participant D: Because he fell shaking and having foam on the mouth and they say he has epilepsy

Interviewer: Okay, F. Tell us what you know about epilepsy, okay? Anything that you know

Participant F: Epilepsy is when… maybe a person shakes when seated then they fall or when they're standing so they shake and fall.

Interviewer: So what happens afterwards

Participant F: (silence)

Interviewer: Okay, E?

Participant E: Epilepsy, I know that… when someone goes for long periods without eating and they're travelling, when they arrive at their destination, they fall.

Interviewer: Is it hunger that causes them to fall\faint? Okay, we want.. Uh, B! You're robbing us, answer. Tell us what you know about epilepsy.

Participant B: Epilepsy is when a person travels when they're sick, they start complaining about fear then they fall and don't know what to do.

Interviewer: Okay, so to you epilepsy is when someone falls\faints and shakes? So say your friend has an epileptic fit at school, how would you help them? C? Let's start with C.

Participant C: I'd call my friends then we pick him up, we'd take a towel, put it on the ground then we place him on top of the towel.

Interviewer: Okay. A, how do you help someone who's having an epileptic fit?

Participant A: We'd lift her up and take her to the teacher.

Interviewer: Okay.. F?

Participant F: We'd pour water on them to check if they're still alive or they've passed away.

Interviewer: Mhh.. so when you pour water on them, how will you know that they're still alive?

Participant F: They'll wake up.

Interviewer: And if they've already passed away?

Participant F: They won't (get up)

Interviewer: Okay, D?

Participant D: We'd go to the teacher to explain to her what happened.

Interviewer: So you'd leave her there, you wouldn't…?

Participant D: Mmhh, we'd take her with us.

Interviewer: What would you do? You'd pick her up? Okay.

Interviewer: While she's shaking? So how would you lift her up when she's shaking? You'd lift her up in that state? What would you do while she's shaking? How do you lift her up?

Participant D: We'd first let her rest.

Interviewer: You'd let her rest first so that the fit stops? So will you be able to pick her up and take her to the teachers? Okay, E.

Participant E: I am D.

Interviewer (laughing): Okay D, sorry.

Participant D: I'd take a blanket and put it on the ground, check if he's still alive. If he's still alive.. uhm, I'd take my mom's phone and call an ambulance then eMatikwane (Hospital), they'll get there and check if he's still alive. If not, they'll bury him.

Interviewer: Okay. B! Uh B, you're always the last one to answer. It means you're hiding (laughs).

Participant B: I'd call my friends to come stay with her while I go tell the teachers, I'd tell the teachers that my friend is having an epileptic fit. I'd then call the doctor, a nurse, the hospital to come take her then cure her.

Interviewer: Okay, we're moving on to another question, okay? So since we've Do you think that it's important that epilepsy is taught as part of your curriculum so you can learn more about it?

Interviewees: Yebo, yebo ma'am (in unison)

Interviewer: How and why? B?

Participant B: Because… because maybe a friend has it then you can be able to help them.

Interviewer: Okay… A?

Participant A (laughs): So that you can help any person who has the illness who has fallen.

Interviewer: D?

Participant D (whispers nervously and inaudibly): ...

Interviewer: Did you forget the question? We asked if you think it's important that you are taught about epilepsy in Life Skills and you answered yes so tell us the importance of learning about it.

Participant D: I don't understand…

Interviewer: Okay, think about it first, we'll come back to you. F?

Participant F: Because it happens that… Its important because if it happens at home, you'll be able to tell your parents what you were taught and how they can deal with it.

Interviewer: Right? Okay... E?

Participant E: Because we have to learn about it… because we need to know how to help a person with epilepsy.

Interviewer: C?

Participant C: In the classroom, it's important because when we're taught about it and our friends have it, we can help them.

Interviewer: We're back to you D, now you've heard that... have you understood the question now? Okay answer, answer then. Why do you think it's important that we learn about it? You're still thinking?

Participant D: Yes

Interviewer: So you're saying it's important that we learn about epilepsy, right? What is it exactly that you would want to learn about epilepsy? What is it that you would like to be taught about? F?

Participant F : I would want to know that because an epileptic fit can start at any time, I would want to know that I can be done to help because people would know about it and what was taught at school.

Interviewer: Okay, management. Okay, another one? What else would you want to know or be taught about? B? You can't hide anymore (laughs).

Participant B: Because it might happen in your family and you can be able to tell them that we were taught about this and what it does.

Interviewer: A?

Participant A: We want to know about epilepsy in detail so that we can help those who have it.

Interviewer: Okay. What is it that you would like to be taught about in Life Skills about this illness? You're still thinking? Okay, D?

Participant D: So that when a person has an epileptic fit, we can be able to help them.

Interviewer: Okay, you want to be taught that? How you can help people? Okay, E.

Participant E: I want to know how the person… how the person falls what causes the person to fall.

Interviewer: Okay, Have you answered C? Oh, C you said you're still thinking!

Participant C: I want to know what happens that causes a person to have epilepsy.

Interviewer: Okay, okay, how would you like your teachers to teach you? A?

Participant A: For them to explain how.. how it starts and the impact it has.

Interviewer: To explain how? In what manner? Would you want it to be in class? To just explain only?

Participant A: For then to write on flyers, print them out and distribute them in class.

Interviewer: Tell me other ways that you feel would be appropriate for your teachers to teach you in that would make it easier for you to grasp the concept. What is another way? Someone said she'll understand quicker if it's written down and distributed. What is another way? B, how would you like to be taught about epilepsy? You're still thinking about it? D?

Participant D: I think if they can play us a video and we see how to help.

Interviewer: F?

Participant F (enthusiastically): I would like to be taught every Monday to Friday when going to school and to be taught in the morning before we start with our classes.

Interviewer: Okay, D? Oh, E?

Participant E: To be taught everyday again and again so that we can know what epilepsy is.

Interviewer: So you can know what epilepsy is? Okay, B, we're back to you.

Participant B: To be taught everyday so that I can also teach my mother, she will then teach and remind me during weekends at home.

Interviewer: So she can teach you at home? Okay. Apart from being taught in class with the teacher in front and giving you flyers. Apart from that, what is another method that can be used? Yes, F!

Participant F: My mother teaching me before I get ready for the day, to remind me about it, when I come back from school and before I go to sleep.

Interviewer: Okay, okay, alright. I think we're done with the questions. Yes, thank you so much, ABCDEF. Thank you so much.

ANNEXURE H_1: Co-coding letter of Life Skills educational advisors

P.O. Box 1416

Mafikeng

2745

19 May 2023

To whom it may concern,

Co-coding for a Research conducted by Mrs Gertie Makhado

This letter serves as a confirmation that I was requested by Mrs G. Makhado to act as a co-coder and that I co-coded data collected in the study entitled "***Life skills educational advisors' perceptions regarding the importance of epilepsy inclusion in Life Skills Education for primary learners and teachers in Mpumalanga and Limpopo Province***"

Yours sincerely

Prof LA Sehularo (PhD, RN)

Professor: Mental Health and Research

Tel: 0183892642 Cell: 0603470183

Email: Leepile.Sehularo@nwu.ac.za

This letter is issued without alteration or erasure of any kind.

ANNEXURE H_2: Co-coding letter of Teachers

P.O. Box 1416

Mafikeng

2745

19 May 2023

To whom it may concern,

Co-coding for a Research conducted by Mrs Gertie Makhado

This letter serves as a confirmation that I was requested by Mrs G. Makhado to act as a co-coder and that I co-coded data collected in the study entitled "***Perspectives of teachers regarding inclusion of epilepsy education in life skills for primary and teachers in Limpopo and Mpumalanga Province***"

Yours sincerely

Prof LA Sehularo (PhD, RN)

Professor: Mental Health and Research

Tel: 0183892642 Cell: 0603470183

Email: Leepile.Sehularo@nwu.ac.za

This letter is issued without alteration or erasure of any kind.

ANNEXURE H_3: Co-coding letter of Learners

Dr Annatjie van der Wath (M Cur, PhD) annavdw@mweb.co.za

CODING CERTIFICATE

Qualitative Data Analysis

This serves to confirm that Annatjie van der Wath has co-coded the following qualitative data: six focus groups for the study:

DEVELOPMENT OF EPILEPSY LIFE SKILLS GUIDELINES FOR PRIMARY SCHOOL LEARNERS AND TEACHERS IN LIMPOPO AND MPUMALANGA PROVINCES

I declare that the candidate, Gertie Makhado, and I have reached consensus on the major themes and categories as reflected in the findings during a consensus discussion.

Annatjie van der Wath (M Cur, Ph D) annavdw@mweb.co.za

ANNEXURE I_1: Author Guidelines Epilepsy and paroxysmal conditions.

https://www.epilepsia.su/jour/about/submissions#authorGuidelines

"Epilepsy and Paroxysmal Conditions" is a scientific and practical peer-reviewed journal for medical professionals. Our aims and priorities include scientific and information support to the members of the "professional community" in their pursuit of new ideas in clinical research. The "Epilepsy and Paroxysmal Conditions" journal is proud to contribute to the continuing medical education (CME) of recent medical graduates and other experts in neurology, instrumental examination, therapy, pediatric, neonatology, rehabilitation and related fields. **"Epilepsy and Paroxysmal Conditions"** was founded in 2008

Author Guidelines

1. General Requirements

1.1. Introduction

In the course of preparation, submission to the editorial board, reviewing and pre-publication preparation of submissions the authors should adhere to the "Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals" of the International Committee of Medical Journal Editors, ICMJE

1.2. General criteria

1.2.1. The General criteria for the publication of articles in the journal “Epilepsy and Paroxysmal Conditions” are the relevance, novelty of the material and its value in theoretical and/or applied aspects.

1.2.2. The manuscript is accepted for further consideration only if it has not been submitted to any other journals, published in the Internet or published previously.

1.3. Language

Manuscripts submitted for publication in the journal “Epilepsy and Paroxysmal Conditions” should be written in Russian or English and comply with the scope of the journal.

1.4. File requirements

1.4.1. Please upload your manuscript as a Microsoft Office Word (MS Word) document (*.doc, *.docx and *.rtf formats).

1.4.2. An article should be typed using the Times New Roman font (12 points; one-and-a-half spacing; 2 cm top, bottom, right and left margins).

1.5. How to submit

Manuscripts are accepted in electronic format only via online submission form in the "**Epilepsy and Paroxysmal Conditions**" journal website.

1.6. Types of manuscripts

1.6.1. *Original articles* present the study results. The page limit is 13-18 MS Word pages (including references, tables, and figure legends). The minimal number of references is 15. The structured summary (abstract) should contain 5 sections (**Background** or **Introduction**, **Aim**, **Material and Methods**, **Results**, **Conclusion**, and **Key words**), and be no longer than 300 words.

1.6.2. *Review Articles* are papers that written based on existing original articles and contains the summary of scholarly research and analysis on certain topics. The page limit is 16-23 MS Word pages (including references, tables, and figure legends). The maximal reference number is 100. The structured or non-structure summary (abstract) should be no longer than 300 words.

1.6.3. *Lectures*, or clinically oriented reviews, are written by experts in broader areas of medicine. Lectures could be focused on diagnostics, treatment, prevention, pharmacology, epidemiology, pathophysiology, evaluation of outcomes and HTA aspects. The page limit is 1623 MS Word (including references, tables, and figure legends). The maximal reference number is 80. The structured or non-structure summary (abstract) should be no longer than 300 words.

1.6.4. *Case Reports* are a brief reports on a complex diagnostic problem and its solution, or a description of a rare clinical observation. The page limit is 12-16 MS Word pages (including references, tables, and figure legends). The minimal number of references is 6. The structured or non-structure summary (abstract) should be no longer than 150 words.

1.6.5. *Short Communications* article is short format for presentation of opinions on the problem or results of scientific research; no more than 10-12 MS Word pages, no more than 2 figures or tables, at least 6 references.

1.6.6. *Letters to the Editor* is open postpublication feedback of an article, often critical of some aspect of the original paper. Any reader can share his opinions on the article. The feedback have sent to the corresponding author of the original article. The authors of the original article can respond to these with a letter of their own. Peer-review process is required for any Letter to the Editor before publishing.

1.7. Recommendations for original articles

1.7.1. International standards and guidelines. The Editors recommend* that manuscripts should be completed in accordance with internationally recognized standards of good publication practices:

1.7.1.1. *Randomized trials* – recommendations of CONSORT (Consolidated Standards Of Reporting Trials). The list of obligatory sections of the submission is posted here, a sample of diagram describing the sequence of conduction of the randomized trial is here.

1.7.1.2. *Non-randomized comparative studies* – recommendations of TREND (Transparent Reporting of Evaluations with Nonrandomized Designs).

1.7.1.3. *Observational Studies* (cohort, case-control, cross) – recommendations of STROBE (Strengthening the Reporting of Observational Studies in Epidemiology). The list of obligatory sections of the submission is posted here. A tailored version is posted here.

1.7.1.4. *Diagnostic studies* – recommendations of STARD (Standards for Reporting of Diagnostic Accuracy).

1.7.1.5. *Prognostic studies* – recommendations of TRIPOD (The Transparent Reporting of a multivariable prediction model for Individual Prognosis Or Diagnosis).

1.7.1.6. *Systematic reviews and meta-analyses* – recommendations of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). The list of obligatory sections is posted here, the scheme of the systematic search - here.

1.7.1.7. *Economic assessment of medical interventions* – recommendations of CHEERS (Consolidated Health Economic Evaluation Reporting Standards).

1.8. Publication of uncontrolled clinical trials results 1.8.1.

An uncontrolled trial is a research without control group.

1.8.2. Articles based on uncontrolled trials results will be accepted for publication if the uncontrolled design of the study is mentioned in “Material and methods” and “Discussion” sections. It is important not to exaggerate significance of the obtained results in the “Conclusion” section.

1.9. Ethical aspects

1.9.1. Trials should be held in accordance with the main principles of "Good Clinical Practice”. Participants of a trial should be informed about the purposes and main aims. They must sign their written informed consent to participate in the trial. The «Material and methods» section must contain details of the above-stated procedure, and notification that Ethical Committee has approved the trial report. If a trial includes radiological methods, it is desirable* to describe these methods and exposition doses in the «Material and methods» section.

1.9.2. Where a description of human studies is provided in the manuscript, it must be stated whether it met the ethical standards of the Ethical Committee (member of the institution in which the work was carried out or regional) or The 1975 Declaration of Helsinki and its revision in 2000.

1.9.3. Patients have the right to privacy and confidentiality of their personal data. Therefore, information containing pictures, names, and initials of patients or numbers of medical documents should not be presented in the materials. If such information is needed for scientific purposes, it is necessary to get written informed consent of the patient (or the parent, the trustee, close relatives when it is applicable) for its publication in print or electronically. If necessary, written consent should be presented to the Editors at request.

1.9.4. Animal trials must conform to the International Guiding Principles for Biomedical Research Involving Animals, adopted by the Council for International Organizations Of Medical Sciences (CIOMS) in 1985.

1.10. Authorship

1.10.1. Each author should significantly contribute to the work submitted for publication.

1.10.2. All members of the group of authors should meet all four criteria of authorship set forth in the ICMJE recommendations:

1) concept and design development or data analysis and interpretation
2) manuscript justification or verification of critical intellectual content
3) final approval for publication of the manuscript
4) consent to be responsible for all aspects of the work and assume that issues relating to the thoroughness and diligent execution of all parts of the study submitted are duly investigated and resolved (even ones in which the author was not personally involved).

1.10.3. Participation in data gathering only does not justify the authorship (such participation should be noted in the “Acknowledgements” section).

1.11. Corresponding Author

1.11.1. The journal does not require all authors of a manuscript to sign the letter of submission, nor do they impose an order on the list of authors. Submission to the journal is taken by the journal to mean that all the listed authors have agreed all of the contents, including the author list and author contribution statements.

1.11.2. The Corresponding Author is responsible for having ensured that this agreement has been reached that all authors have agreed to be so listed, and have approved the manuscript submission to the journal, and for managing all communication between the journal and all coauthors, before and after publication.

1.11.3. The Corresponding Author is also responsible for submitting a competing interests' statement on behalf of all authors of the paper.

1.11.4. It is expected that the corresponding author will be responsible for the following with respect to data:

- ensuring that data comply with transparency and reproducibility standards;
- ensuring that original data upon which the submitted manuscript is based are preserved following best practices in the field so that they are used for reanalysis;
- confirming that data presentation accurately reflects the original;
- foreseeing and minimizing obstacles to the sharing of data described in the work
- ensuring that all authors (or group leaders in multi-center collaborations) have certified the author list and author contributions

1.11.5. At submission, the Corresponding Author must include written permission from the authors of the work concerned for mention of any unpublished material cited in the manuscript (for example others' data in press manuscripts; personal communications or work in preparation).

1.11.6. The Corresponding Author also must clearly identify at submission any material within the manuscript (such as figures) that has been published previously elsewhere and provide written permission from authors of the prior work and/or publishers, as appropriate, for the reuse of such material.

1.11.7. The Corresponding Author, submitting the manuscript to the Editor, assigns the Editor to publish it. The Editors have the right to provide the manuscript with any illustrated or text material, including advertisements. The Editors allow the third parties to put such content into the manuscript.

1.11.8. Submission of the manuscript to the Editors implies that the Corresponding Author since moment of submission via online form or sending e-mail to the Editorial agrees to transfer the exclusive property rights for the manuscript and other objects of the copyright, like photos, drawings, schemes, tables, etc. to the Editors. The Editors obtain the right to reproduce (partly or fully) all the content submitted, including objects of the copyright, in press and on Internet; to distribute; to translate the manuscript and other provided content into any language of the world; to export and import copies of the issue where the article of the Author was published; to revise the manuscript.

1.11.9. The Corresponding Author transfers the rights specified in clauses 1.11.7. and 1.11.8. to the Editors without any time limitations or territory restrictions, including the territories of the Russian Federation.

1.11.10. The Editors have the right to transfer the rights received from the author to the third party or to prohibit any use of materials published in the journal by the third party.

1.11.11. The Corresponding Author guarantees that he or she holds the all authors rights to all materials submitted to the editorial office. In case of violation of this guarantee by the Corresponding Author and consequent claims to the Editors, the Corresponding Author is obliged to settle all the claims at his/her own expense. The Editors are not responsible for the guarantee's violation by the Corresponding Author.

1.11.12. The Authors retain the right to use the published material or its parts for personal needs, including scientific and educational purposes.

1.11.13. Manuscripts can be reviewed by independent experts. All manuscripts are reviewed on the double-blind reviewing basis - neither the Authors know who reviewers are, nor the reviewers know who the Authors of each particular manuscript is. The name of institution, where the Author works or makes research remains confidential as well.

1.11.14. Reviewers' comments and opinions can be sent to the Corresponding Author for making changes or corrections. Time for corrections or reasoned objections is not less than 2 weeks. In case of untimely answer of the Corresponding Author the Editors have the right to make their own independent scientific editing and to make corrections to the publication or to refuse to publish the article. Editing, shortening and correction of the manuscript, and changes in the graph, picture or table design are made in order they comply the standards of the Journal. The meaning of the submitted content should not be changed after corrections. To add and (or) delete the references it is necessary to receive confirmation of the author by e-mail.

1.11.15. The Editors are not responsible for reliability of the information presented in the manuscripts.

1.11.16. In case the author does not agree with the comments or refusal to publish, a discussion is possible. The author's arguments to be sent to the reviewers and the Editor-in-chief and can be publish together with the peer-review as Letter to the Editor.

1.12. Conflict of interests/funding

1.12.1. It is necessary for authors to disclose (in a covering letter or on the title page) any possible relationships with industrial and financial organizations, which can lead to a conflict of interests with regard to the content of the article.

1.12.2. It is also desirable to list all sources of financing in a footnote on the title page.

1.13. Checking for plagiarism and self-plagiarism

1.13.1. All manuscripts are automatically checked by the "Antiplagiat" service.

1.13.2. Minimum allowed level of originality is 85% (taken into account that standard techniques can be described in the “Materials and methods” section and references can be duplicated). Only manuscripts with an originality level more than 85% are accepted for further consideration and peer review.

1.13.3. To avoid time wasting before article submission to the journal it should be independently checked for plagiarism. The TEXT.RU https://text.ru/antiplagiat provides this service free of charge for sources in Russian language.

2. Structure of manuscript

2.1. Manuscripts should be organized as follows:

1) Title page;
2) Structured summary and keywords;
3) Text;
4) Acknowledgements (if applicable);
5) List of references;
6) Diagrams, charts, drawings, tables
7) Statement on data sharing (if applicable)

2.2. Title page. Title page includes:

• Title of Manuscript

• Authors information

• Declaration about conflict of interests/funding

• Declaration about author’s contribution

• Obligatory confirmation

2.2.1. Title of Manuscript should include the article title in Russian and English.

2.2.1.1. Best article titles bear short, clear and distinctive messages

2.2.1.2. The English title should be competent from the point of view of the English language, while the meaning is fully consistent with the Russian name.

2.2.1.3. Please, use international nonproprietary names (INN) of drugs in the title. Exceptions are possible when usage of trade names is well-grounded (for example, in studies of bio- or therapeutic equivalence of drugs).

2.2.2. Authors information

2.2.2.1. Authors information includes full given names and last names of the authors, the full name of the institution(s) from which the manuscript came, its(their) full mail address(es) with postal code. The name(s) of the author(s) should also be submitted in the author's approved English spelling. The name(s) of the institution should also be submitted in the authorized English spelling.

2.2.2.2. Authors information also includes the author's scientific degrees and titles, positions at the institution from which the manuscript came. The names of units, in which the authors work (chair, department, laboratory, etc.) must be submitted in the authorized English spelling or should be pointed out that the official spelling is absent.

2.2.2.3. Specify the contact information of the Corresponding Author (with editorial board, readers). The section should contain the following:

- Full name
- academic degree
- academic title
- position
- structural unit and full name of organization (primary employment)
- postal address (with zip code)
- e-mail address
- business phone number (with area code)
- mobile number (required for hot link with the author, in the published version of the manuscript is not indicated).

2.2.2.4. In addition, be sure to list the mobile numbers and email addresses of **ALL** co-authors.

2.2.2.5. It is strongly recommended (for the benefit of authors) to specify the individual investigator codes, which can be obtained at registration in the ORCID, Scopus, ResearcherID.

Example

Makatsariya A.D.

ORCID: https://orcid.org/0000-0001-7415-4633 Scopus

Author ID: 8305171100

https://www.scopus.com/authid/detail.uri?authorId=6602363216 ResearcherID:

C-6184-2013

https://publons.com/researcher/2224042/alexander-d-makatsariya/

2.2.3. Declaration about conflict of interests/funding

2.2.3.1. Statement of the presence or absence of a conflict of interest in the preparation of this article (example: "The authors declare about the absence of conflict of interest with respect to this publication.")

2.2.3.2. Statement that this study was supported/funded by the company.

2.2.4. Declaration about author's contribution

2.2.4.1. *Example 1:* "Author 1 - model development, analysis and interpretation of results, writing text; Author 2, Author 3 - writing text, editing, final approval of the manuscript."

2.2.4.2. *Example 2:* "all authors contributed equally to the article".

2.2.5. Obligatory confirmation

2.2.5.1. The authors must confirm that the article has not been published or submitted for publication elsewhere (or an explanation of this should be provided in the Comments for the editor).

2.2.2.2. The authors must confirm that all of them have read and approved the final version of the manuscript

2.3. Structured summary (abstract) and keywords

2.3.1. The text of summary for the original articles with study results should contain the following sections: “Introduction”, “Aim”, “Material and methods”, “Results”, and “Conclusion”.

2.3.2. In the summary of the review article it is necessary to reflect its main goal, briefly characterize used sources of data and present the main conclusion/conclusions of the review. A manuscript must contain all data presented in summary.

2.3.3. Summary of the case study should reflect the main description of the case, the reasons for presenting this particular case and the content of the overview part.

2.3.4. In addition to the text of summary in Russian it is necessary to submit its full translation into English. 5-8 keywords of the article should be given at the end of the abstract. MeSH (Medical Subject Headings) thesaurus is a preferred source for choosing keywords.

2.3.5. If the article and summary/key words in English, translation in Russian not necessary.

2.4. Text

2.4.1. Text of original article should contain the following sections:

- Introduction (reflecting an urgency of a problem and research goals); • Aim
- Materials and methods;
- Results;
- Discussion of the obtained results • Conclusion.

The text should be clear, brief and without repeating.

2.4.1.1. *Introduction* - brief description of the problem, which was the immediate cause of the study. Scale, indirect effects and/or continuing gaps in knowledge may be the characteristics of the problem.

2.4.1.2. *Aim* should describe the main (primary) goal of the study, the issue for the resolution of which a study is required. Moreover, the aim should be very specific and not be limited to overall comparison.

2.4.1.3. *Materials and methods* – this abstract section should contain brief information on:

- Study subjects (healthy, sick, data),
- Experimental groups,
- Inclusion and exclusion criteria,
- Ethical aspects,
- Availability and characteristics of intervention,

- Study site,
- Study duration,
- Methods of outcomes evaluation.
- Statistics methods

2.4.1.4. All submitted materials can be revised to ensure relevance and accuracy of statistical methods and statistical interpretation of results. The “Material and methods” section should contain a subsection with detailed description of statistical methods, including those used for generalization of data; and of methods used for testing hypotheses (if those are available). Significance value for testing hypotheses must be provided. Please indicate statistical software which was used to process results and its version if you use more complex statistical methods (besides a t-test, a chi-square, simple linear regression).

2.4.1.5. *Study results* - section should contain a brief description of study subjects (number included in the study, completed its most significant characteristics of participants) with the assessment of study outcomes related to its purpose. Presentation of study outcomes in the limited number of subgroups (up to 2-3) is allowed, for example, outcomes formed on the basis of sex, age, important characteristics of the disease. If there is data on adverse events related to medical intervention, their mention is obligatory. The results of the statistical analysis (p-value) must be represented with accuracy to the third decimal place. In the analysis of multi-criteria relationships (the simplest option is one dependent and several independent variables) representation of the results of the multivariate analysis is required.

2.4.1.6. *Discussion* - author's interpretation of the obtained results and comparison with the data of previous studies. A section can be combined with the “Study results” section and called “Study results and discussion”.

2.4.1.7. *Conclusion* – short (1-2-3 sentences) summarizing of study outcomes relating to its main (primary) objective. Authors should avoid over-generalizations and stick to the balance in the assessment of the positive and negative effects of intervention.

2.4.2. *Review articles*, *Case Reports*, and *Lectures* may be unstructured, but it is desirable to include the following paragraphs: “Introduction”, “Aim”, “Materials and methods”, “Results”, “Discussion” and “Conclusion” (“Recommendations”) into the text.

2.4.3. You should provide titles and subtitles in the sections: “Material and methods”, “Results” and “Discussion”.

2.4.4. Each reference, image or table should be numbered and specified in order of appearance in the text. References in the text must be numbered in Arabic figures and provided in square brackets.

2.4.5. Each image, chart, table, photo, and reference must be indicated in order of appearance in the text.

2.4.6. The titles to the image, chart, table, photo, should be in Russian and English languages both.

2.4.7. All units of measure should be provided in SI system. No abbreviations, except standard abbreviations of chemical and mathematical terms, are acceptable.

2.5. Acknowledgements and others

2.5.1. Acknowledgements section may be presented in Russian, English or both languages. If the submitted material has contributors who do not meet the criteria of authorship, but have made

some contribution to the work, they should be listed in this document and at the end of the article in the section of Acknowledgements.

2.5.2. Acknowledgements section could comprise the following:

2.5.2.1. Clarification regarding any potential or actual conflicts of interest of the authors. Please note that conflicts of interest do not impede a publication, though failure to disclose one does.

2.5.2.2. A brief list of funding sources for the results reported in the paper, as well as the publication process itself (e.g. a commercial organization, a foundation or government grant, etc.).

2.5.2.3. You may also place here an acknowledgment for any individuals or organizations that assisted in your work.

2.5.3. The Acknowledgements section should not exceed 100 words.

2.5.4. At the end of manuscript, it's desirable to mention:

1) Highlights

- What is already known about this subject? (2-3 points each till 30 words)
- What are the new findings? (1-3 points each till 30 words)
- How might it impact on clinical practice in the foreseeable future? (1-3 points each till 30 words)

2) Funding

3) Restrictions (if any)

4) Patient consent for publication (for clinical trials only, examples below or write your version):

Example 1 - "Not required "; *Example 2* - "Obtained" 5)

Ethics approval:

Example 1 - "Not required "; *Example 2* - "Obtained"

6) Provenance and peer review (examples below or write your version):

Example 1: "Not commissioned; externally peer reviewed"

2.6. List of References

2.6.1. Please use separate sheet for the list of references. Give each source a consecutive number and start it with the new line. The list of references should be composed in order of citation. Use Index Medicus to search for abbreviations of the names of journals.

2.6.2. All documents referred to in the text, should be included into the list of references or footnotes.

2.6.3. If the manuscript is in Russian. In order to increase the quotation of authors, transliteration (translation of the Cyrillic script into the Latin alphabet) of Russian-language sources using official encodings is mandatory in the following order: authors and the name of the journal are transliterated using encodings, and the title of the article – a semantic translation into English. If a source has an original transliteration, the latter is used. You can use online services: http://translit.ru (basic) for making transliteration. Below there are examples of the transliteration of Russian-language (Cyrillic) sources into the Latin alphabet.

2.6.4. Authors are responsible for accuracy of information provided in the list of references.

2.6.5. The list of references should correspond to format recommended by the American National Information Standards organization – NISO, adopted by the National Library of Medicine (NLM) for databases (Library's MEDLINE/PubMed database)
NLM: https://www.ncbi.nlm.nih.gov/books/NBK7256/

2.6.6. If an article cited has a DOI (digital object identifier – a unique digital identifier of an article in the CrossRef system) it must be stated in the bibliography. DOI can be found at http://search.crossref.org/ (enter the title of the article in English in the search box).

2.6.7. Two Reference lists must be provided for Russian-language manuscripts:

- Literature [all publications in the native language (Russian words – in Cyrillic characters, foreign words – in Latin characters)] (GOST R 7.0.5 2008);
- References [authors' last names, names of publication sources and publishers are transliterated, name of the publication – book, article, thesis – is translated into English, the language of the publication is stated in parentheses (In Russ.)].

2.6.8. The bibliography must not contain manuscripts (including theses), unpublished materials and guidebooks as well as regulatory documents. These sources must be listed in footnotes and contain the name of the document and its author (if applicable), location of the document (organization or depository), for regulatory documents –issuing authority, date, number, title.

2.6.9. Bibliography examples:

A Russian-language article citation

Косолапов Е. Г., Коченков Ф. С., Погудина Н. Л., Блинов Д. В. Клинико-экономический анализ применения комбинированного препарата вилантерол + умеклидиния бромид для терапии хронической обструктивной болезни легких тяжелого и крайне тяжелого течения по сравнению с монотерапией препаратом тиотропия бромид. ФАРМАКОЭКОНОМИКА. Современная фармакоэкономика и фармакоэпидемиология. 2017; 10(2): 31–40. DOI: 10.17749/2070-4909.2017.10.2.031-040.

Kosolapov E. G., Kochenkov F. S., Pogudina N. L., Blinov D. V. Cost-effectiveness of vilanerol / umeclidinium versus tiotropium in severe and very severe copd. FARMAKOEKONOMIKA. Modern pharmacoeconomics and pharmacoepidemiology. 2017; 10(2): 31–40. (In Russ.) DOI: 10.17749/2070-4909.2017.10.2.031-040.]

A foreign language article citation

Sarno L., Tufano A., Maruotti G.M. et al. Eculizumab in pregnancy: a narrative overview. J Nephrol. 2019;32(1):17–25. DOI: 10.1007/s40620-018-0517-z. *Books and monographs citation*

Бицадзе В.О., Макацария А.Д., Стрижаков А.Н., Червенак Ф.А. Жизнеугрожающие состояния в акушерстве и перинатологии. М.: МИА, 2019. 672 с.

Bitsadze V.O., Makatsariya A.D., Strizhakov A.N., Chervenak F.A. Life-threatening conditions in obstetrics and perinatology. [Zizneugrozhayushchie sostoyaniya v akusherstve i perinatologii]. Moskva: MIA, 2019. 672 s. (In Russ.).

Murray P.R., Rosenthal K.S., Kobayashi G.S., Pfaller M.A. Medical microbiology. 4th ed. St. Louis: Mosby, 2002.

Chapter in the book citation

Chang K.M. Immune pathogenesis of viral hepatitis B and C. In: Zakim and Boyer's hepatology: a textbook of liver disease. Eds. D. Boyer, M.P. Manns, A.J. Sanyal. 6th ed. Saunders, 2012. 111–28.

Electronic resources citation

Данные о предельных размерах оптовых надбавок и предельных размерах розничных надбавок к ценам на жизненно необходимые и важнейшие лекарственные препараты, установленные в субъектах Российской Федерации (данные за 3 квартал 2017 г.). ФАС России. [Электронный ресурс]. Режим доступа: https://fas.gov.ru/documents/665519. Дата обращения: 06.10.2018.

Data on the limits of wholesale mark-ups and the limits of retail mark-ups on the prices of vital and essential drugs established in the constituent entities of the Russian Federation (data for the 3rd quarter of 2017). FAS Russia. [Electronic resource]. Available at: https://fas.gov.ru/documents/665519. (in Russ.). Accessed: 06.10.2020.

Legislative documents citation

Федеральный закон от 21.11.2011 г. № 323-ФЗ «Об основах охраны здоровья граждан в Российской Федерации». Официальный интернет-портал правовой информации. [Электронный ресурс]. Режим доступа: http://www.pravo.gov.ru. Дата обращения: 07.03.2020.

Federal Law of 21.11.2011, No. 323-ФЗ “On the basis of the protection of public health in the Russian Federation”. Official Internet portal of legal information. [Electronic resource]. Available at: http://www.pravo.gov.ru. (in Russ.). Accessed: 07.03.2020

Veterans Hearing Loss Compensation Act of 2002, Pub. L. No. 107-9, 115 Stat. 11 (May 24, 2001).

Database on the Internet citation (link to a specific record) Open database:

Who's Certified [Internet]. Evanston (IL): The American Board of Medical Specialists. c2000 - [cited 2001 Mar 8]. Available at: http://www.abms.org/newsearch.asp Closed database:

Jablonski S. Online Multiple Congenital Anomaly/Mental Retardation (MCA/MR) Syndromes [Internet]. Bethesda (MD): National Library of Medicine (US); c1999 [updated 2001 Nov 20; cited 2002 Aug 12]. Available at: http://www.nlm.nih.gov/archive//20061212/mesh/jablonski/syndrome_title.html

2.7. Diagrams, charts, drawings, tables

2.7.1. Tables, charts, drawing and photocopies with names and legends should be submitted on separate pages in order they appear in the manuscript.

2.7.2. Diagrams, charts, and drawings should be submitted electronically in the following formats: «MS Excel», «Adobe Illustrator», «Corel Draw» or «MS PowerPoint». Diagrams, charts, and drawings must be allocated on separate pages, numbered in order of citation, have names and notes if necessary (all abbreviations should be expanded in the notes). Drawings must not repeat content of tables. Please indicate names and units of measurement for graph axes. Provide legend for each graph (denote lines and filling). If you compare diagrams, provide significance of differences. Do not use 3-D models for histograms. Please identify places in the text, where you wish schemes, drawings and graphs to be inserted. The text should contain links to all diagrams, charts, tables and drawings.

2.7.3. Photographs must be submitted electronically with a minimum resolution of 300 dots per inch (dpi). Microphotos must be cropped so that only main content is left. Arrows should be used to show main features. All symbols, arrows and legends on gray-scale illustrations should be in contrast with the background.

2.7.4. Size of legends on images and photos should be big enough to be legible after compression for publication. The optimal size is 12 points.

2.7.5. All abbreviations should be defined either after first citation in a legend, or in alphabetic order at the end of each legend. All symbols (arrows, circles, etc.) must be explained.

2.7.6. If data was published earlier, it is desirable* to provide a written permission from the publisher.

2.7.7. Tables should have numbers in order of citation in the text, and names. Tables should be compact and demonstrative. Names of columns and rows must reflect the content. Data presented in tables, should not be repeated in the text or images. Please clearly specify units of measurement of variables and form of data presentation (M±m; M±SD; Me; Mo; percentiles etc.). All figures, sums and percentages must be thoroughly checked and correspond to those in the text. Explanatory footnotes should be provided below the table if necessary.

2.7.8. Abbreviations should be listed in a footnote under the table in alphabetic order. Symbols of footnotes should be given in the following order: *, †, ‡, §, | |, ¶, #, **, † † etc.

2.7.9. If tables were published earlier, it is desirable to provide a written permission* from the publisher.

*Hereinafter: fulfilment of the Editors recommendations will be contributed to faster editing, acceptance and publishing of submitted manuscript

2.8. Statement on data sharing

2.8.1. According to the recommendations of the ICMJE, when submitting an article containing data on a clinical study, the authors should submit a separate document "Statement on data sharing".

2.8.2. In accordance with statement of the International Committee of Medical Journal Editors, as of July 1, 2018, manuscripts submitted to the journal that report the results of clinical trials must contain a data sharing statement. Clinical trials that begin enrolling participants on or after January 1, 2019, must include a data sharing plan in the trial's registration.

2.8.3. The ICMJE's policy regarding trial registration is explained at http://www.icmje.org/recommendations/browse/publishing-and-editorial-issues/clinical-trialregistration.html. If the data sharing plan changes after registration, this should be reflected in the statement submitted and published with the manuscript and updated in the registry record.

Submission Preparation Checklist

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.

1. The manuscripts are accepted if has not been published or submitted for publication elsewhere.
2. The materials should be prepared in a format OpenOffice, Microsoft Word, RTF, or World Perfect.
3. Internet links are provided as a complete URL.
4. Text should be typed with an interval of one line spacing, font Times New Roman, 12 pt; to highlight the accents it is recommended to use italics rather than underlining (except Internet links). All images, graphics and tables are placed within the text according to the meaning of the particular part of text (and not at the end of the document).
5. Text should follow the stylistic and bibliography requirements as stated in Regulations located in the Part "About Us."
6. Please, remove the authors' names from the title of the article and other parts of the document to ensure the anonymity of reviewing.

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- Authors are permitted and encouraged to post their work online (e.g., in institutional repositories or on their website) prior to and during the submission process, as it can lead to productive exchanges, as well as earlier and greater citation of published work (See The Effect of Open Access).

Privacy Statement

Specified when registering the names and addresses will be used solely for technical purposes of a contact with the Author or reviewers (editors) when preparing the article for publication. Private data will not be shared with other individuals and organizations.

ANNEXURE I_2: Author Guidelines (PLOS ONE)

https://journals.plos.org/plosone/s/submission-guidelines

Study Protocol Article Template

Title

Metadata

Funding

Competing interests

Data availability

Abstract

Must include the trial/study registration number where applicable

Introduction

Explain the rationale for the study, the hypotheses it is designed to test, and what new evidence it is anticipated to provide. Appropriate previous literature should be referenced.

Materials and Methods

Should include:

- the aim, design and setting of the study
- The sample size, inclusion and exclusion criteria
- the characteristics of participants and how the sample will be selected and, where applicable, randomization and blinding. Or, a description of how materials will be selected for the study and used
- a description of all processes, interventions, comparisons
- what outcomes will be measured, when and how

- data management plans
- safety considerations, if applicable
- the type of data and statistical analyses planned

Updated February 9 2021

- ethical considerations and declarations
- the status and timeline of the study

Discussion

Include discussion of any issues involved in performing the study that are not covered in other sections. These can include:

- limitations of the study design
- dissemination plans
- how amendments to the study, including termination, will be dealt with

Authors' contributions Acknowledgements

Supporting Information

Might include checklists e.g. PRISMA-P, SPIRIT

References

Updated February 9 2021

ANNEXURE I_3: Author Guidelines (Children)

https://www.mdpi.com/journal/children/instructions

Type of the Paper (Article, Review, Communication, etc.) 1

Title 2

Firstname Lastname [1], Firstname Lastname [2] and Firstname Lastname [2,*] 3

[1] Affiliation 1; e-mail@e-mail.com 4
[2] Affiliation 2; e-mail@e-mail.com 5
* Correspondence: e-mail@e-mail.com; Tel.: (optional; include country code; if there are multiple correspond- 6 ing authors, add author initials) 7

Abstract: A single paragraph of about 200 words maximum. For research articles, abstracts should 8 give a pertinent overview of the work. We strongly encourage authors to use the following style of 9 structured abstracts, but without headings: (1) Background: Place the question addressed in a broad 10 context and highlight the purpose of the study; (2) Methods: briefly describe the main methods or 11 treatments applied; (3) Results: summarize the article's main findings; (4) Conclusions: indicate the 12 main conclusions or interpretations. The abstract should be an objective representation of the article 13 and it must not contain results that are not presented and substantiated in the main text and should 14 not exaggerate the main conclusions. 15

Keywords: keyword 1; keyword 2; keyword 3 (List three to ten pertinent keywords specific to the 16 article yet reasonably common within the subject discipline.) 17

18

0. How to Use This Template 19

The template details the sections that can be used in a manuscript. Note that each 20 sectio has a corresponding style, which can be found in the "Styles" menu of Word. Sec- 21 tions that not mandatory are listed as such. The section titles given are for articles. 22
Review papers and other article types have a more flexible structure.

Remove this paragraph and start section numbering with 1. For any questions, please 24 cor the editorial office of the journal or support@mdpi.com. 25

1. Introduction 26

The introduction should briefly place the study in a broad context and highlight why 27 it is important. It should define the purpose of the work and its significance. The current 28

Citation: To be added by editorial staff during production.

Academic Editor: Firstname Lastname

Received: date
Revised: date
Accepted: date
Published: date

state of the research field should be carefully reviewed and key publications cited. Please 29 highlight controversial and diverging hypotheses when necessary. Finally, briefly men- 30 tion the main aim of the work and highlight the principal conclusions. As far as possible, 31 please keep the introduction comprehensible to scientists outside your particular field of 32 research. References should be numbered in order of appearance and indicated by a nu- 33 meral or numerals in square brackets—e.g., [1] or [2,3], or [4–6]. See the end of the docu- 34 ment for further details on references.

2. Materials and Methods

The Materials and Methods should be described with sufficient details to allow oth- 37 ers to replicate and build on the published results. Please note that the publication of your 38 manuscript implicates that you must make all materials, data, computer code, and proto- 39 cols associated with the publication available to readers. Please disclose at the submission 40 stage any restrictions on availability of materials or information. New methods and 41 protocols should be described in detail, while well-established methods can be briefly de- 42 scribed and appropriately cited. 43

Research manuscripts reporting large datasets that are deposited in a publicly avail- 44 able database should specify where the data have been deposited and provide the relevant 45 accession numbers. If the accession numbers have not yet been obtained at the time of 46 submission, please state that they will be provided during review. They must be provided 47 prior to publication. 48

Interventionary studies involving animals or humans, and other studies that require 49 ethical approval, must list the authority that provided approval and the corresponding 50 ethical approval code. 51

3. Results 52

This section may be divided by subheadings. It should provide a concise and precise 53 description of the experimental results, their interpretation, as well as the experimental 54 conclusions that can be drawn. 55

3.1. Subsection 56

3.1.1. Subsubsection 57

Bulleted lists look like this: 58

- First bullet; 59
- Second bullet; 60
- Third bullet. 61

Numbered lists can be added as follows: 62

1. First item; 63
2. Second item; 64
3. Third item. 65

The text continues here. 66

3.2. Figures, Tables and Schemes 67

All figures and tables should be cited in the main text as Figure 1, Table 1, etc. 68

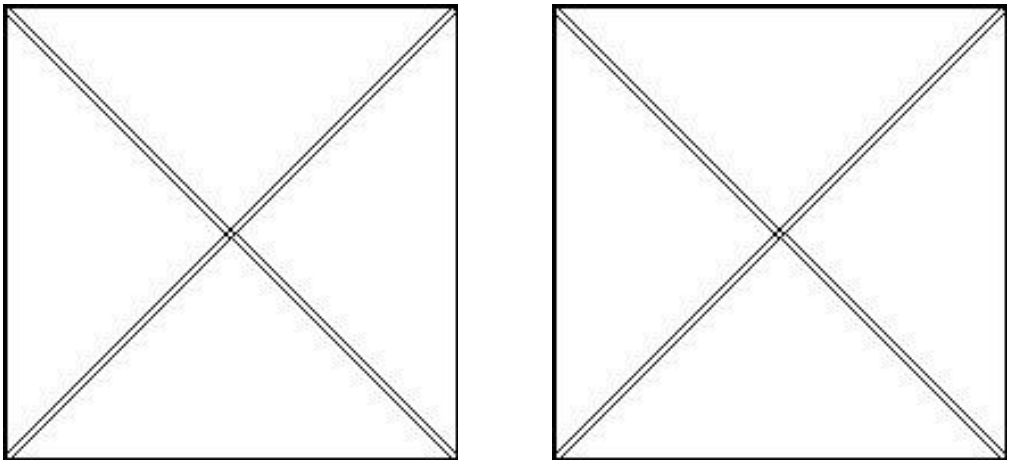
Figure 1. This is a figure. Schemes follow the same formatting.

Table 1. This is a table. Tables should be placed in the main text near to the first time they are cited.

Title 1	Title 2	Title 3
entry 1	data	data
entry 2	data	data [1]

[1] Tables may have a footer.

The text continues here (Figure 2 and Table 2).



(**a**) (**b**)

Figure 2. This is a figure. Schemes follow another format. If there are multiple panels, they should be listed as: (**a**) Description of what is contained in the first panel; (**b**) Description of what is contained in the second panel. Figures should be placed in the main text near to the first time they are cited.

Table 2. This is a table. Tables should be placed in the main text near to the first time they are cited.

Title 1	Title 2	Title 3	Title 4
entry 1 *	data data	data data	data data
	data	data	data
entry 2	data data	data data	data data

entry 3	data data data data data data	data data data data data data	data data data data data data
entry 4	data data	data data	data data

* Tables may have a footer.

3.3. Formatting of Mathematical Components

This is example 1 of an equation:

$$a = 1, \tag{1}$$

the text following an equation need not be a new paragraph. Please punctuate equations as regular text.

This is example 2 of an equation:

$$a = b + c + d + e + f + g + h + i + j + k + l + m + n + o + p + q + r + s + t + u + v + w + x + y + z \tag{2}$$

the text following an equation need not be a new paragraph. Please punctuate equations as regular text.

Theorem-type environments (including propositions, lemmas, corollaries etc.) can be formatted as follows:

Theorem 1. *Example text of a theorem. Theorems, propositions, lemmas,* etc. *should be numbered sequentially (i.e., Proposition 2 follows Theorem 1). Examples or Remarks use the same formatting, but should be numbered separately, so a document may contain Theorem 1, Remark 1 and Example 1.* The text continues here. Proofs must be formatted as follows:

Proof of Theorem 1. Text of the proof. Note that the phrase "of Theorem 1" is optional if it is clear which theorem is being referred to. Always finish a proof with the following symbol. □

The text continues here.

4. Discussion

Authors should discuss the results and how they can be interpreted from the perspective of previous studies and of the working hypotheses. The findings and their implications should be discussed in the broadest context possible. Future research directions may also be highlighted.

5. Conclusions

This section is not mandatory but can be added to the manuscript if the discussion is unusually long or complex.

6. Patents

This section is not mandatory but may be added if there are patents resulting from the work reported in this manuscript.

Supplementary Materials: The following supporting information can be downloaded at: 108 www.mdpi.com/xxx/s1, Figure S1: title; Table S1: title; Video S1: title. 109

Author Contributions: For research articles with several authors, a short paragraph specifying their 110 individual contributions must be provided. The following statements should be used "Conceptual- 111 ization, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y. and Z.Z.; formal 112 analysis, X.X.; investigation, X.X.; resources, X.X.; data curation, X.X.; writing—original draft prep- 113 aration, X.X.; writing—review and editing, X.X.; visualization, X.X.; supervision, X.X.; project ad- 114 ministration, X.X.; funding acquisition, Y.Y. All authors have read and agreed to the published ver- 115 sion of the manuscript." Please turn to the CRediT taxonomy for the term explanation. Authorship 116 must be limited to those who have contributed substantially to the work reported. 117

Funding: Please add: "This research received no external funding" or "This research was funded by 118 NAME OF FUNDER, grant number XXX" and "The APC was funded by XXX". Check carefully that 119 the details given are accurate and use the standard spelling of funding agency names at 120 https://search.crossref.org/funding. Any errors may affect your future funding. 121

Institutional Review Board Statement: In this section, you should add the Institutional Review 122 Board Statement and approval number, if relevant to your study. You might choose to exclude this 123 statement if the study did not require ethical approval. Please note that the Editorial Office might 124 ask you for further information. Please add "The study was conducted in accordance with the Dec- 125 laration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of 126 NAME OF INSTITUTE (protocol code XXX and date of approval)." for studies involving humans. 127 OR "The animal study protocol was approved by the Institutional Review Board (or Ethics Com- 128 mittee) of NAME OF INSTITUTE (protocol code XXX and date of approval)." for studies involving 129 animals. OR "Ethical review and approval were waived for this study due to REASON (please pro- 130 vide a detailed justification)." OR "Not applicable" for studies not involving humans or animals. 131

Informed Consent Statement: Any research article describing a study involving humans should 132 contain this statement. Please add "Informed consent was obtained from all subjects involved in the 133 study." OR "Patient consent was waived due to REASON (please provide a detailed justification)." 134 OR "Not applicable." for studies not involving humans. You might also choose to exclude this state- 135 ment if the study did not involve humans. 136

Written informed consent for publication must be obtained from participating patients who can be identified (including by the patients themselves). Please state "Written informed consent has been obtained from the patient(s) to publish this paper" if applicable. **Data Availability Statement:** We encourage all authors of articles published in MDPI journals to share their research data. In this section, please provide details regarding where data supporting reported results can be found, including links to publicly archived datasets analyzed or generated during the study. Where no new data were created, or where data is unavailable due to privacy or ethical restrictions, a statement is still required. Suggested Data Availability Statements are available in section "MDPI Research Data Policies" at https://www.mdpi.com/ethics.

Acknowledgments: In this section, you can acknowledge any support given which is not covered by the author contribution or funding sections. This may include administrative and technical support, or donations in kind (e.g., materials used for experiments).

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Appendix A

The appendix is an optional section that can contain details and data supplemental to the main text—for example, explanations of experimental details that would disrupt the flow of the main text but nonetheless remain crucial to understanding and reproducing the research shown; figures of replicates for experiments of which representative data is shown in the main text can be added here if brief, or as Supplementary data. Mathematical proofs of results not central to the paper can be added as an appendix.

Appendix B

All appendix sections must be cited in the main text. In the appendices, Figures, Tables, etc. should be labeled starting with "A"—e.g., Figure A1, Figure A2, etc.

References

References must be numbered in order of appearance in the text (including citations in tables and legends) and listed individually at the end of the manuscript. We recommend preparing the references with a bibliography software package, such as EndNote, ReferenceManager or Zotero to avoid typing mistakes and duplicated references. Include the digital object identifier (DOI) for all references where available.

Citations and references in the Supplementary Materials are permitted provided that they also appear in the reference list here.

In the text, reference numbers should be placed in square brackets [ ] and placed before the punctuation; for example [1], [1–3] or [1,3]. For embedded citations in the text with pagination, use both parentheses and brackets to indicate the reference number and page numbers; for example [5] (p. 10), or [6] (pp. 101–105).

1. Author 1, A.B.; Author 2, C.D. Title of the article. *Abbreviated Journal Name* **Year**, *Volume*, page range.
2. Author 1, A.; Author 2, B. Title of the chapter. In *Book Title*, 2nd ed.; Editor 1, A., Editor 2, B., Eds.; Publisher: Publisher Location, Country, 2007; Volume 3, pp. 154–196.
3. Author 1, A.; Author 2, B. *Book Title*, 3rd ed.; Publisher: Publisher Location, Country, 2008; pp. 154–196.
4. Author 1, A.B.; Author 2, C. Title of Unpublished Work. *Abbreviated Journal Name* year, *phrase indicating stage of publication (submitted; accepted; in press)*.
5. Author 1, A.B. (University, City, State, Country); Author 2, C. (Institute, City, State, Country). Personal communication, 2012.
6. Author 1, A.B.; Author 2, C.D.; Author 3, E.F. Title of Presentation. In Proceedings of the Name of the Conference, Location of Conference, Country, Date of Conference (Day Month Year).
7. Author 1, A.B. Title of Thesis. Level of Thesis, Degree-Granting University, Location of University, Date of Completion.
8. Title of Site. Available online: URL (accessed on Day Month Year).

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ANNEXURE I_4: Author Guidelines Health Gesondheid

HEALTH SA GESONDHEID SUBMISSION GUIDELINES

Title: The article's full title should contain a maximum of 95 characters (including spaces).

Abstract: The abstract, written in English, should be no longer than 250 words and must be written in the past tense. The abstract should give a succinct account of the objectives, methods, results and significance of the matter. The structured abstract for an Original Research article should consist of seven paragraphs labelled Background, Aim, Setting, Methods, Results, Conclusion and Contribution.

- **Background:** Summarise the social value (importance, relevance) and scientific value (knowledge gap) that your study addresses.
- **Aim**: State the overall aim of the study.
- **Setting**: State the setting for the study.
- **Methods**: Clearly express the basic design of the study, and name or briefly describe the methods used without going into excessive detail.
- **Results**: State the main findings.
- **Conclusion**: State your conclusion and any key implications or recommendations.
- **Contribution**: Concise statement of the primary contribution of your manuscript. Do not cite references and do not use abbreviations excessively in the abstract.

Introduction: The introduction must contain your argument for the social and scientific value of the study, as well as the aim and objectives:

- Social value: The first part of the introduction should make a clear and logical argument for the importance or relevance of the study. Your argument should be supported by the use of evidence from the literature.
- Scientific value: The second part of the introduction should make a clear and logical argument for the originality of the study. This should include a summary of what is already known about the research question or specific topic and should clarify the knowledge gap that this study will address. Your argument should be supported by the use of evidence from the literature.
- Conceptual framework: In some research articles it will also be important to describe the underlying theoretical basis for the research and how these theories are linked together in a conceptual framework. The theoretical evidence used to construct the conceptual framework should be referenced from the literature.

- Aim and objectives: The introduction should conclude with a clear summary of the aim and objectives of this study.

Research methods and design: This must address the following:

- Study design: An outline of the type of study design.
- Setting: A description of the setting for the study; for example, the type of community from which the participants came or the nature of the health system and services in which the study is conducted.
- Study population and sampling strategy: Describe the study population and any inclusion or exclusion criteria. Describe the intended sample size and your sample size calculation or justification. Describe the sampling strategy used. Describe in practical terms how this was implemented.
- Intervention (if appropriate): If there were intervention and comparison groups, describe the intervention in detail and what happened to the comparison groups.
- Data collection: Define the data collection tools that were used and their validity. Describe in practical terms how data were collected and any key issues involved, e.g. language barriers.
- Data analysis: Describe how data were captured, checked and cleaned. Describe the analysis process, for example, the statistical tests used or steps followed in qualitative data analysis.
- Ethical considerations: Approval must have been obtained for all studies from the author's institution or other relevant ethics committee and the institution's name and permit numbers should be stated here.

Results: Present the results of your study in a logical sequence that addresses the aim and objectives of your study. Use tables and figures as required to present your findings. Use quotations as required to establish your interpretation of qualitative data. All units should conform to the **SI convention** and be abbreviated accordingly. Metric units and their international symbols are used throughout, as is the decimal point (not the decimal comma).

[For Qualitative Research - Measures of Trustworthiness]

Measures of Trustworthiness: This refers to the findings of the study being based on the discovery of human experience as it was experienced and observed by the participants. The following are the criteria of trustworthiness, credibility, transferability, dependability and confirmability to be discussed.

[For Quantitative Research - Reliability and Validity]

Reliability: Reliability is the extent to which an experiment, test, or any measuring procedure yields the same result with repeated trials. Without the agreement of independent observers able to replicate research procedures or the ability to use research tools and procedures that yield consistent measurements, researchers would be unable to satisfactorily draw conclusions, formulate theories or make claims about the ability to generalise their research.

Validity: Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. While reliability is concerned with the accuracy of the actual measuring instrument or procedure, validity is concerned with the study's success at measuring what the researchers set out to measure. Researchers should be concerned

with both external and internal validity. External validity refers to the extent to which the results of a study are generalisable or transferable. Internal validity refers to:

- The rigor with which the study was conducted (e.g. the study's design, the care taken to conduct measurements and decisions concerning what was and was not measured).
- The extent to which the designers of a study have taken into account alternative explanations for any causal relationships they explore.

Discussion: The discussion section should address the following four elements:

- Key findings: Summarise the key findings without reiterating details of the results.
- Discussion of key findings: Explain how the key findings relate to previous research or to existing knowledge, practice or policy.
- Strengths and limitations: Describe the strengths and limitations of your methods and what the reader should take into account when interpreting your results.
- Implications or recommendations: State the implications of your study or recommendations for future research (questions that remain unanswered), policy or practice. Make sure that the recommendations flow directly from your findings.

Conclusion: Provide a brief conclusion that summarises the results and their meaning or significance in relation to each objective of the study.

Acknowledgements: Those who contributed to the work but do not meet our authorship criteria should be listed in the Acknowledgments with a description of the contribution. Authors are responsible for ensuring that anyone named in the Acknowledgments agrees to be named. Refer to the acknowledgement structure guide on our *Formatting Requirements* page.

Also provide the following, each under their own heading:

- Competing interests: This section should list specific competing interests associated with any of the authors. If authors declare that no competing interests exist, the article will include a statement to this effect: *The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.* Read our **policy on competing interests**.
- Author contributions: All authors must meet the criteria for authorship as outlined in the **authorship** policy and **author contribution** statement policies.
- Funding: Provide information on funding if relevant
- Data availability: All research articles are encouraged to have a data availability statement.
- Disclaimer: A statement that the views expressed in the submitted article are his or her own and not an official position of the institution or funder.

References: Authors should provide direct references to original research sources whenever possible. References should not be used by authors, editors, or peer reviewers to promote self-interests. Refer to the journal referencing style downloadable on our *Formatting Requirements* page.

ANNEXURE J_1: Letter from Language Editor for Proposal

FACULTY OF HUMANITIES, SOCIAL SCIENCES AND EDUCATION

14 November 202

TO WHO IT MAY CONCERN

Sir/Madam

This serves to confirm that I have proof-read Mrs T.G. Makhado's research proposal titled: "Epilepsy Life Skills Education Guidelines for Primary Schools in Limpopo and Mpumalanga Provinces, South Africa."

The proof-reading entailed editing some parts of the document; for example, to avoid wordiness, redundancy, sub-dividing sentences, and so on, to enhance the readability of the document.

However, I have not tampered with the content of the document, except where this constituted repetition or made the document confusing.

The research proposal is presently ready for examination.

Sincerely

……

Mr F. Mahori

Lecturer

Department of English , Media Studies and Linguistics

University of Venda

UNIVERSITY OF VENDA

PRIVATE BAG X5050, THOHOYANDOU, 0950 LIMPOPO PROVINCE SOUTH AFRICA

TELEPHONE (015) 962 8299

E-mail: Freddy.mahori@univen.ac.za *"A quality driven, financially sustainable, rural-based comprehensive University"*

ANNEXURE J_2: Letter from Language Editor Thesis

FACULTY OF HUMANITIES, SOCIAL SCIENCES AND EDUCATION

02 June 2023

TO WHO IT MAY CONCERN

Sir/Madam

This serves to confirm that I have proof-read Mrs TG Makhado 's introductions to manuscripts, conceptual framework to enhance epilepsy education in primary schools, development and validation of epilepsy life skills guidelines of primary learners and teachers in Limpopo and Mpumalanga provinces, and conclusions and recommendations of the thesis.

The proof-reading entailed editing some parts of the document; for example, to avoid wordiness, redundancy, sub-dividing sentences, and so on, to enhance the readability of the document.

However, I have not tampered with the content of the document, except where this constituted repetition or made the document confusing.

Sincerely

…….

Mr. F. Mahori

Lecturer: Department of English, Media Studies and Linguistics

University of Venda

PRIVATE BAG X5050, THOHOYANDOU, 0950 LIMPOPO PROVINCE SOUTH AFRICA
TELEPHONE (015) 962 8299
E-mail: Freddy.mahori@univen.ac.za *"A quality driven, financial sustainable, rural-based comprehensive University"*