

KNOWLEDGE, ATTITUDE AND PRACTICE OF FIRST-  
AID EPILEPSY AMONG UNDERGRADUATE NURSING  
STUDENTS IN UNIVERSITI SAINS MALAYSIA  
(HEALTH CAMPUS)

NURAFIFAH BINTI MOHD ARIFF

SCHOOL OF HEALTH SCIENCES  
UNIVERSITI SAINS MALAYSIA (USM)

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KNOWLEDGE, ATTITUDE AND PRACTICE OF FIRST-  
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STUDENTS IN UNIVERSITI SAINS MALAYSIA  
(HEALTH CAMPUS)

by

NURAFIFAH BINTI MOHD ARIFF

Dissertation submitted in partial fulfilment of  
the requirements for the degree of  
Bachelor in Nursing with Honours

August 2024

# CERTIFICATE

This is to certify that the dissertation entitled “Knowledge, Attitude and Practice of First-Aid Epilepsy among Undergraduate Nursing Students in Universiti Sains Malaysia (USM) Health Campus” is the research work done by Ms “Nurafifah Binti Mohd Ariff” during the period from October 2023 until August 2024 under my supervision. I have read this dissertation, and, in my opinion, it conforms to acceptable standards of supervision of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Nursing (Honours).

Main Supervisor,



.....

**Dr Salmi Ab Aziz**  
Lecturer,  
School of Health Sciences  
Universiti Sains Malaysia  
Health Campus  
16150 Kubang Kerian  
Kelantan, Malaysia

Date: 7<sup>th</sup> August 2024

## DECLARATION

I, Nurafifah Binti Mohd Ariff, hereby declare that the work presented in this thesis titled “Knowledge, Attitude and Practice of First-Aid Epilepsy among Undergraduate Nursing Students in Universiti Sains Malaysia (USM) Health Campus” is my own original work and has not been submitted previously, in whole or in part, at this or any other institution for a degree, diploma, or other qualification. I understand that my thesis may be made available for teaching, research, and promotional purposes at Universiti Sains Malaysia.

Signature



.....

**Nurafifah binti Mohd Ariff**  
Student of Bachelor’s in nursing (Honours)  
School of Health Sciences  
Universiti Sains Malaysia  
Health Campus  
16150 Kubang Kerian  
Kelantan, Malaysia  
Date: 7<sup>th</sup> August 2024

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## **Table of Contents**

|   |             |
|---|-------------|
| <b>CERTIFICATE .....</b>  | <b>i</b>    |
| <b>DECLARATION.....</b>   | <b>ii</b>   |
| <b>ACKNOWLEDGEMENT.....</b>   | <b>iii</b>  |
| <b>LIST OF TABLES.....</b>  | <b>vii</b>  |
| <b>LIST OF FIGURES .....</b>  | <b>viii</b> |
| <b>LIST OF ABBREVIATIONS .....</b>  | <b>viii</b> |
| <b>ABSTRACT.....</b>  | <b>x</b>    |
| <br>  |             |
| <b>CHAPTER 1: INTRODUCTION.....</b>   | <b>1</b>    |
| 1.1 Background of Study.....  | 1           |
| 1.2 Problem Statement .....   | 3           |
| 1.3 Research Questions .....  | 4           |
| 1.4 Research Objective.....   | 5           |
| 1.4.1 General objective.....  | 5           |
| 1.4.2 Specific objectives.....  | 5           |
| 1.5 Research Hypothesis .....   | 5           |
| 1.6 Conceptual and Operational Definitions .....                                    | 6           |
| 1.7 Significance of the Study .....   | 8           |
| <br>  |             |
| <b>CHAPTER 2: LITERATURE REVIEW.....</b>  | <b>9</b>    |
| 2.1 Introduction .....  | 9           |
| 2.2 Review of Literature .....  | 9           |
| 2.2.1 Epilepsy .....  | 9           |
| 2.2.2 First-Aid Epilepsy .....  | 11          |
| 2.2.3 Knowledge on first-aid epilepsy.....  | 12          |
| 2.2.4 Attitude towards epilepsy and first-aid epilepsy .....                        | 13          |
| 2.2.5 Practice of first-aid epilepsy .....  | 14          |
| 2.2.6 Correlation between knowledge, attitude, and practice of first-aid epilepsy . | 15          |
| 2.2.7 Theoretical and Conceptual Framework.....                                     | 17          |

|  |           |
|--|-----------|
| <b>CHAPTER 3: RESEARCH METHODOLOGY .....</b>       | <b>19</b> |
| 3.1 Research Design.....                           | 19        |
| 3.2 Study Setting .....                            | 19        |
| 3.3 Research Duration .....                        | 19        |
| 3.4 Research Population.....                       | 20        |
| 3.5 Subject Criteria.....                          | 20        |
| 3.5.1 Inclusion and Exclusion Criteria .....       | 20        |
| 3.6 Sampling Plan .....                            | 21        |
| 3.6.1 Sampling Size Estimation.....                | 21        |
| 3.6.2 Sampling Method .....                        | 24        |
| 3.7 Research Instrument.....                       | 24        |
| 3.7.1 Instrument .....                             | 24        |
| 3.7.2 Translation of Instrument .....              | 25        |
| 3.7.3 Validity and Reliability of Instrument ..... | 26        |
| 3.8 Research Variables .....                       | 26        |
| 3.8.1 Variables Measurement.....                   | 27        |
| 3.8.2 Variables Scoring.....                       | 27        |
| 3.9 Data Collection Method .....                   | 29        |
| 3.9.1 Procedure of Data Collection .....           | 29        |
| 3.9.2 Study Flowchart.....                         | 30        |
| 3.10 Data Analysis .....                           | 31        |
| 3.11 Ethical Considerations.....                   | 32        |
| 3.11.1 Author’s Permission.....                    | 32        |
| 3.11.2 Vulnerability issue .....                   | 32        |
| 3.11.3 Declaration of interest.....                | 32        |
| 3.11.4 Privacy and Confidentiality .....           | 33        |
| 3.11.5 Community sensitivities and benefits.....   | 33        |
| 3.11.6 Honorarium and incentives.....              | 33        |

|  |           |
|--|-----------|
| <b>CHAPTER 4: RESULTS</b> .....  | <b>34</b> |
| 4.1 Introduction .....   | 34        |
| 4.2 Descriptive Socio-demographic Characteristics .....                              | 34        |
| 4.3 Level of Knowledge .....   | 36        |
| 4.4 Level of Attitude .....  | 39        |
| 4.5 Level of Practice .....  | 41        |
| 4.6 Correlation of Knowledge, Attitude and Practice .....                            | 43        |
| <br>   |           |
| <b>CHAPTER 5: DISCUSSION</b> .....   | <b>44</b> |
| 5.1 Introduction .....   | 44        |
| 5.2 Level of Knowledge on First-aid Epilepsy .....                                   | 44        |
| 5.3 Level of Attitude on First-aid Epilepsy .....                                    | 46        |
| 5.4 Level of Practice on First-aid Epilepsy .....                                    | 47        |
| 5.5 Correlation between Knowledge, Attitude, and Practice of First-aid Epilepsy .... | 48        |
| 5.6 Strength and Limitations .....   | 48        |
| 5.6.1 Strength.....  | 48        |
| 5.6.2 Limitations.....   | 49        |
| <br>   |           |
| <b>CHAPTER 6: CONCLUSION AND RECOMMENDATIONS</b> .....                               | <b>50</b> |
| 6.1 Introduction .....   | 50        |
| 6.2 Summary of research findings .....   | 50        |
| 6.3 Implications and Recommendations .....   | 50        |
| 6.3.1 Health Education .....   | 50        |
| 6.3.2 Nursing Research.....  | 51        |
| 6.4 Conclusion.....  | 52        |
| <br>   |           |
| <b>REFERENCES</b> .....  | <b>53</b> |
| <br>   |           |
| <b>APPENDICES</b> .....  | <b>59</b> |
| APPENDIX A: Instrument.....  | 59        |
| APPENDIX B: Permission of Original Author to use Instrument.....                     | 64        |
| APPENDIX C: Research Information and Consent Form .....                              | 66        |
| APPENDIX D: Ethical Approval.....  | 70        |
| APPENDIX E: GANTT Chart and Planned research Milestone .....                         | 72        |



## LIST OF TABLES

|  |    |
|--|----|
| Table 1. 1 Operational and Conceptual Definitions.....   | 6  |
| Table 3. 1 Dependent and independent variables of the study.....   | 26 |
| Table 3. 2 Level of respondents' knowledge according to Bloom's Cut-off Point.....                           | 28 |
| Table 3. 3 Level of respondents' attitude according to Bloom's Cut-off.....                                  | 28 |
| Table 3. 4 Level of respondents' practice according to Bloom's Cut-off Point.....                            | 28 |
| Table 3. 5 Type of data analysis used for each study objective .....   | 31 |
| Table 4. 1 Frequencies and Percentages of Socio-demographic data of respondents.....                         | 35 |
| Table 4. 2 Frequencies and Percentages on level of knowledge of respondents .....                            | 37 |
| Table 4. 3 Frequency, Percentage, and Level of Knowledge of First-Aid Epilepsy.....                          | 38 |
| Table 4. 4 Frequencies and Percentages on level of attitude of respondents .....                             | 40 |
| Table 4. 5 Frequency, Percentage, and Level of Attitude of First-Aid Epilepsy .....                          | 40 |
| Table 4. 6 Frequencies and Percentages on level of Practice of respondents .....                             | 42 |
| Table 4. 7 Frequency, Percentage, and Level of Practice of First-Aid Epilepsy .....                          | 43 |
| Table 4. 8 Correlation knowledge between, attitude, and practice of first-aid epilepsy seizure (n=254) ..... | 43 |

## **LIST OF FIGURES**

|  |    |
|--|----|
| Figure 1. 1 Common seizure related injuries by International League Against Epilepsy (2019)..... | 2  |
| Figure 2. 1 Conceptual framework of Health Belief Model by Glanz et al. (2015).....              | 17 |
| Figure 2. 2 The adopted theory of Health Belief Model by Glanz et al. (2015).....                | 18 |
| Figure 3. 1 Calculation for sample size using sample size calculator .....                       | 23 |
| Figure 3. 2 Flowchart of data collection process .....   | 30 |

## **LIST OF ABBREVIATIONS**

|      |                                 |
|------|---------------------------------|
| USM  | Universiti Sains Malaysia       |
| HBM  | Health Belief Model             |
| HREC | Human Research Ethics Committee |
| PWE  | People with Epilepsy            |

**PENGETAHUAN, SIKAP DAN AMALAN EPILEPSI PERTOLONGAN AWAL  
DI KALANGAN PELAJAR KEJURURAWATAN SARJANA MUDA DI  
UNIVERSITI SAINS MALAYSIA (USM), KAMPUS KESIHATAN**

**ABSTRAK**

Epilepsi ialah gangguan neurologi yang berlaku disebabkan oleh pelepasan elektrik yang berlebihan dalam sekumpulan sel otak. Seseorang hanya akan didiagnosi dengan epilepsi selepas mengalami dua atau lebih sawan yang tidak diprovokasi. Epilepsi boleh menyebabkan episod sawan yang berulang, pergerakan tidak terkawal, serta perubahan dalam emosi, sensasi, dan tingkah laku. Ia juga kadangkala menyebabkan kehilangan kesedaran serta kehilangan kawalan terhadap fungsi usus atau pundi kencing. Kajian ini bertujuan untuk menilai pengetahuan, sikap, dan amalan pertolongan awal berkaitan epilepsi di kalangan pelajar kejururawatan di Universiti Sains Malaysia (USM), Kampus Kesihatan. Kajian merentas lintang telah dilakukan terhadap pelajar sarjana muda kejururawatan di Kampus Kesihatan USM, dan data dikumpul menggunakan soal selidik yang diubahsuai. Seramai 213 pelajar telah terlibat dalam kajian ini. Data yang dikumpul telah dianalisis secara statistik menggunakan perisian SPSS versi 27, dengan menggunakan statistik deskriptif dan Korelasi Pearson. Hasil kajian ini menunjukkan bahawa majoriti pelajar (n=105, 62.9%) mempunyai tahap pengetahuan yang sederhana tentang pertolongan awal epilepsi, sikap yang sedang terhadap pertolongan awal epilepsi (n=98, 58.7%) dan 149 (89.2%) peserta mempunyai amalan yang selamat apabila menyediakan pertolongan awal epilepsi kepada orang yang mempunyai kekejangan epilepsi. Hasil kajian ini juga menunjukkan tiada perkaitan antara pengetahuan dan sikap ( $p=0.000$ ), tiada perkaitan antara pengetahuan dengan amalan ( $p=0.317$ ), dan tiada perkaitan antara sikap dan amalan ( $p=1.000$ ).

**KNOWLEDGE, ATTITUDE AND PRACTICE OF FIRST-AID EPILEPSY  
AMONG UNDERGRADUATE NURSING STUDENTS IN UNIVERSITI SAINS  
MALAYSIA (USM), HEALTH CAMPUS**

**ABSTRACT**

Epilepsy is a neurological disorder caused by excessive electrical discharges in a group of brain cells. One will only be diagnosed with epilepsy after the occurrence of two or more unprovoked seizures. It can be characterized by recurrent episodes of seizures, involuntary movements, emotions, sensations, and behaviours. It is also sometimes associated with loss of consciousness and the power to control bowel or bladder function. The study aims to assess the level of knowledge, attitude, and practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus. A cross-sectional study was conducted on undergraduate nursing students that studying in USM Health Campus. Data was collected using an adapted self-administered questionnaire. 213 students were included in this study. Data collected were statistically analysed using the SPSS software version 27. The study used descriptive statistics and Pearson Correlation. The result from this study shows that majority of the students (n=105, 62.9%) of participants have a moderate level of knowledge of first-aid epilepsy, moderate attitude on first-aid epilepsy (n=98, 58.7%) and 149 (89.2%) of participants have a safe practice when providing first-aid epilepsy towards people having epileptic seizure. This study has shown that there is a correlation between knowledge and attitude ( $p=0.000$ ). However, there are no correlation between knowledge and practice ( $p=0.317$ ), and between attitude and practice ( $n=1.000$ ).

# CHAPTER 1: INTRODUCTION

## 1.1 Background of Study

Considered as one of the most chronic non-communicable disease, epilepsy is a neurological disorder caused by excessive electrical discharges in a group of brain cells. While seizure is a single occurrence, an individual will only be diagnosed as epilepsy when two or more unprovoked seizures happened (Johns Hopkins Medicine, 2023). The disorder that affects nearly 50 million people worldwide can be characterized by recurrent episodes of seizures, which happens when many neurons send signals at the same time and faster than normal, which may lead to involuntary movements, emotions, sensations, and behaviours. It is also sometimes associated with loss of consciousness and the power to control bowel or bladder function. It is estimated that 2.4 million people around the globe are diagnosed with epilepsy each year, and nearly 80% of the 50 million people currently living with epilepsy live in low- and middle-income countries (World Health Organization, 2023).

According to a study by Tani & Adali (2023), epilepsy was frequently linked to myths, misconceptions, stigma, and fear among people in general as well as among medical professionals. A number of psychosocial and cultural variables had profound influences on the way epilepsy developed clinically and often constituted the primary obstacles to receiving the right treatment and medical attention. It was crucial to look into how the community viewed epilepsy as this helped to clarify one's own and family beliefs about the condition and lessened the psychological effects of having a seizure in front of people (Molla *et al.*, 2021).

To combat the myths and misconceptions, a rigorous education about epilepsy was important because it helped individuals gain the knowledge and skills needed to

manage seizures effectively while reducing stigma and misconceptions surrounding this situation (Makhado *et al.*, 2023). Apart from that, understanding of correct basic first-aid epilepsy was also important to reduce the rate of injury towards people with epilepsy (PWE) since they were more likely to have lots of complications, whether physical or psychological, such as fractures, bruising, anxiety, and depression. Apart from that, they were more prone to have a series of social problems, including worse marriage status, lower income, and lower educational status compared with healthy people. Compared to the general population, people with epilepsy had two to three times the risk of death, including death due to seizure-related injury (International League Against Epilepsy, 2017). This was why people needed to be aware of the basics of first-aid for epilepsy seizures and have a plan in place for managing prolonged or recurring crises (O'Hara, 2016). Based on studies in the United Kingdom, it was found that a third of the population attended the emergency department due to epilepsy unnecessarily. It was crucial to provide educational programs towards emergency services, relatives, and patients in order to reduce the attendance at emergency departments (Burrows *et al.*, 2020).

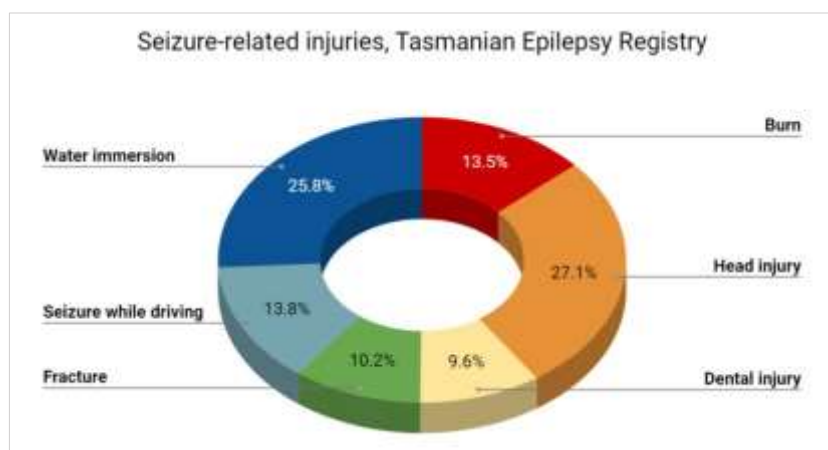


Figure 1. 1 Common seizure related injuries (International League Against Epilepsy, 2019)

## 1.2 Problem Statement

A comprehensive education programme on first-aid for epilepsy was essential for patients, parents, carers, and the community to avoid injuries during seizures. This was due to the fact that the majority of people either didn't know how to react to someone who was having a seizure or had misconceptions about it. Research had repeatedly demonstrated that there was a deficiency in first-aid knowledge for epilepsy patients, which could put them at risk of injury during a seizure. For instance, Kolahi et al. (2018) conducted a cross-sectional study in Iran and discovered that teachers from 342 schools lacked adequate knowledge on how to treat epilepsy. Alkhotani et al. (2019) conducted a study in Makkah, Saudi Arabia and discovered that 426 teachers were among those with insufficient knowledge of seizure first-aid. In order to effectively manage crises and create a safe and supportive environment for individuals with epilepsy, it was crucial for carers to be knowledgeable about how to respond to epileptic seizures (Alsulami *et al.*, 2022).

Certain religious and cultural beliefs had led to the development of negative attitudes towards epilepsy, which in certain cases made treatment efforts for the condition ineffective. Elhassan et al. (2017) demonstrated that improper attitudes and behaviours could seriously injure epileptic patients; for instance, trying to force patients to remain stable could result in fractures and additional issues because of inadequate knowledge.

Given the prevalence of PWEs, it is imperative that nurses possess epilepsy knowledge and a positive attitude towards PWEs in order to ensure the provision of optimal healthcare services (Shawahna & Jaber, 2020). Since nursing students will be the future generation in the healthcare field, this study is conducted to assess the knowledge and practice of first-aid epilepsy, apart from educating and exposing nursing

students regarding the matter. It is important for these future generation to know interventions needed when facing with critical situations of seizures, not only in clinical environment, but also in public. In order to have a community filled with knowledgeable people that can intervene correctly during critical situations of seizure, we believe that it must start with healthcare providers especially nursing students that will future be the frontliners in providing help and health education to the public. Finally, exposing students with first-aid epilepsy can help eradicating the stigma and misconceptions in some of them and indirectly help reduce the rate of injuries and harm for people with epilepsy.

### **1.3 Research Questions**

1. What is the level of knowledge of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus?
2. What is the level of attitude of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus?
3. What is the level of practice of first-aid-epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus?
4. Is there any correlation between the level of knowledge, attitude, and practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus?



## **1.4 Research Objective**

### **1.4.1 General objective**

To identify the level of knowledge, attitude, and practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.

### **1.4.2 Specific objectives**

1. To determine the level of knowledge of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.
2. To determine the level of attitude of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.
3. To determine the level of practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.
4. To identify the correlation between the level of knowledge, attitude, and practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.

## **1.5 Research Hypothesis**

**Null Hypothesis (H<sub>0</sub>):** There is no correlation between the level of knowledge, attitude, and practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.

**Alternative Hypothesis (H<sub>A</sub>):** There is a correlation between the level of knowledge, attitude, and practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.

## 1.6 Conceptual and Operational Definitions

Table 1. 1 Operational and Conceptual Definitions

| <b>Term</b>               | <b>Conceptual Definition</b>   | <b>Operational Definition</b>   |
|---------------------------|--|---|
| <b>Epilepsy</b>           | Epilepsy is a chronic non-communicable neurological disease, characterized by recurrent seizures resulting from excessive electrical discharges in a group of brain cells (World Health Organization, 2023). | In this study, epilepsy is referred as an epileptic disorder which its management will be assessed among undergraduate nursing students.  |
| <b>First-Aid Epilepsy</b> | Basic procedures for responding to someone that having a seizure and keeping them safe until seizure stops by itself (Centers for Disease Control and Prevention, 2023).                                     | In this study, students will be assessed their level of knowledge, attitude towards providing first-aid, and type of practice of first-aid epilepsy.                              |
| <b>Knowledge</b>          | Understanding or information about a subject that has been obtained by experience or study, either known by a person or by people generally (Cambridge Dictionary, 2019).                                    | In this study, knowledge is referred to knowledge regarding first-aid epilepsy among undergraduate nursing students which will be divide into poor, moderate, and high knowledge. |

Table 1.1 continued

|                 |   |  |
|-----------------|---|--|
| <b>Attitude</b> | Attitude can be defined as a feeling or opinion about something or someone, or a particular feeling or opinion (Cambridge Dictionary, 2023).              | In this study, attitude towards providing first-aid epilepsy referred as the students feeling to provide first-aid, assist, or intervene with epileptic, and will be divided into poor, moderate, and high attitude.                                 |
| <b>Practice</b> | Practice can be referred as training, or the act of doing something regularly and repeatedly to improve skills on something (Cambridge Dictionary, 2023). | Nursing students in USM Health Campus will be assessed regarding their level of practice on first-aid epilepsy seizure which score greater than or equal to 50% considered as safe practice while score less than 50% considered as unsafe practice. |

## **1.7 Significance of the Study**

According to McKinlay et al. (2020), patients with epilepsy frequently visited the emergency room, and the majority of these visits are clinically unnecessary because the seizures are simple and could be treated at home with proper first-aid knowledge. In our society, a lack of awareness about first-aid for seizures can raise the possibility that parents, teachers, peers, and the public will react inappropriately or insufficiently to repeated or prolonged seizures. Additionally, the discomfort involved in administering first-aid can add to the stigma surrounding epilepsy in general (O'Hara, 2016).

Since epilepsy seizures can occur anytime, anywhere, and without a diagnosis, imparting knowledge about first-aid for epilepsy seizures is important to change how society views patients experiencing seizures in urgent situations. In addition, this can eliminate stigma and misconceptions about epilepsy and alter the public's perception of the chronic condition (Makhado *et al.*, 2023). In order to ensure a good skill of first-aid epilepsy among undergraduate nursing students, it is important to first assess their knowledge and attitude regarding this issue.

Since there is yet no study on knowledge, attitude, and practice of first-aid epilepsy seizure among undergraduate nursing students in USM Health Campus, we believe that this study can gain students' perspective and at the same time exposing them the knowledge about the practice. Apart from that, this study is not only significance for nursing school in USM but also can be a reference and evaluate by other nursing schools. Finally, this study can provide findings about the complications faced if first-aid epilepsy is not being applied correctly when facing with critical situations of seizure and create awareness for those that might still not have any idea about epilepsy and the importance to care and respond when facing with situation of seizure attacks.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

Literature review was developed to present the existing body of knowledge and practice regarding first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus. In this section, variety and multiple previous studies regarding this topic will be discussed and elaborate to broaden our knowledge on the chosen issue. The outcome of previous research will be discussed and synthesized to help increase the knowledge and practice of first-aid epilepsy seizure.

### **2.2 Review of Literature**

#### **2.2.1 Epilepsy**

Epilepsy can be defined as recurrent epileptic seizures that occur due to excessive paroxysmal discharges of cortical neurons (Auer *et al.*, 2020). The recurrent seizure attacks can be concerning to people due to the inability to predict the time and place of the next seizure will occur (Habbash *et al.*, 2022).

Approximately 50 million individuals globally experience epilepsy, making up 0.5% of all occurrences of the condition. More than 80% of these individuals reside in developing countries (Mohamad *et al.*, 2023). According to a global meta-analysis study, the lifetime prevalence of this illness is 7.60 per 1000 people, with developed countries having the lowest prevalence (5.8 per 1000 people) and developing countries having the highest prevalence (10.3 per 1000 people) in their rural areas. It has been found that there are significant differences in the lifetime prevalence of epilepsy between Asian countries, in Malaysia alone, the prevalence ranges from 1.5–14.0 per 1000 people (Fong *et al.*, 2021).

Additionally, there is lack of public's understanding, and it is frequently linked to a number of myths, misconceptions, and beliefs. Along with its dramatic clinical manifestations, this has led to improperly handled first-aid care, which has caused physical trauma and a strong social stigma. The stigma that has long surrounded the community of individuals who have epilepsy is still a social process or associated personal experience that can result in rejection, devaluation, exclusion, and blame. For those who have epilepsy, this may result in excruciating pain and psychological effects (Adal & Abebe, 2022). Individuals who had epilepsy deal with a variety of social issues, and these social factors have a greater detrimental impact than the actual disease. According to studies, people with epilepsy are more likely to have low self-esteem and high levels of anxiety and sadness than those without epilepsy (Malik *et al.*, 2022). Lack of knowledge regarding this disease appeared to be an important determinant of negative attitudes towards people with epilepsy even though the etiology of stigma and discrimination is complex.

According to a study on mortality in adult epilepsy patients in Malaysia, it shows that structural causes, uncontrolled seizure, and focal epilepsy are factors that contribute to mortality risk in patients with epilepsy. The rates of mortality are high in younger age group, male gender, and Indian ethnicity. Based on a study that recruited 2218 people with epilepsy (PWE) in Malaysia, it is found that the mortality rate of people with epilepsy is higher than general population but lower than any other Asian countries (Khor *et al.*, 2021).

### 2.2.2 First-Aid Epilepsy

People with epilepsy (PWEs) are frequently stigmatised, which leads to misunderstandings among the public about seizure attack treatment and first-aid. In order to keep epileptics safe from harm during seizures, it is critical to practise first-aid seizure management. The practise of first-aid for epilepsy may be impacted by a few factors, such as sociodemographic variables (sex, age, place of residence, marital status, educational attainment, and employment status), the existence or absence of epilepsy, the presence of an epileptic patient in the family, whether or not participants have received any epilepsy-related training, knowledge, or attitude (Chen *et al.*, 2022).

Providing proper care after a seizure, preventing self-harm, and deciding when to transfer the patient to a medical facility are the primary responsibilities of a bystander during an epileptic seizure. Secondary injuries could arise from inappropriate action. A prevalent misconception regarding seizure management is that the patient has to open their mouth to avoid swallowing their tongue, which could lead to tooth loss due to improper action (Alkhotani *et al.*, 2019). Moreover, it is not appropriate to put anything in the patient's mouth, hold them down or attempt to stop them from moving, or give them food or drink until they are completely conscious during a tonic-clonic seizure (Asadi-Pooya *et al.*, 2022). Knowledge about first-aid epilepsy might benefit people with epilepsy on self-management treatments that can also boost themselves and their caregivers' self-assurance to control seizure within their capacity. Thus, it is crucial to know how to assist someone who is having a seizure; otherwise, there is a greater chance that they will suffer harm or even pass away.

### **2.2.3 Knowledge on first-aid epilepsy**

Concerning knowledge on first-aid epilepsy, variety of study has been conducted over various region of the world, between different populations and groups. While knowing how to provide PWE with the necessary first-aid during a seizure (by the witnesses) may help prevent or reduce the likelihood of harm to the patients, a lot of people lack this knowledge (Asadi-Pooya *et al.*, 2022). Of the 1230 participants in a study by Habbash *et al.* (2022), 70.4% had good knowledge of epilepsy, and 74.2% had good knowledge of first-aid epilepsy. Another study by Mohamad *et al.* (2023) on carers in Tabuk City, Saudi Arabia, a substantial portion of the participants (26.3%) were familiar with the principles of first-aid epilepsy. Understanding how to respond to epileptic episodes in an emergency is crucial for carers because it establishes a secure and encouraging atmosphere for PWE.

Multiple studies done in Saudi Arabia, specifically in Mecca, Taif, Tabuk City, and Jeddah shown that insufficient knowledge, inadequate training, and misconceptions on epilepsy and its first-aid (Alsulami *et al.*, 2022; Alzahni *et al.*, 2021; Kanjo *et al.*, 2021; Mohamad *et al.*, 2023). When handling an epileptic seizure episode, there is a risk that improper or hazardous first-aid procedures will be taken due to ignorance and misperceptions about these procedures (Chen *et al.*, 2022). In this matter, doctors have a huge role in education patients, parents, and the public on management and how to intervene when someone having a seizure (O'Hara, 2016). This is because most of the time, even though parents had received counselling from physician, they will usually forget how to respond during seizure attacks (Xiang, 2020).



#### **2.2.4 Attitude towards epilepsy and first-aid epilepsy**

Neurological conditions such as epilepsy continue to be stigmatised. Misconceptions and stigmas surrounding epilepsy continue despite medical advancements. The stigma that people with epilepsy face as well as the attitudes and ideas held by the community about them are all included in the prejudice surrounding the condition. People with epilepsy may experience feelings of shame or embarrassment if they have a seizure in public due to their symptoms. Unfortunately, because they are perceived by others as being mentally ill, weak-minded, or under the influence of evil spirits, they also face prejudice and stigma from others (Malik *et al.*, 2022.) This not only makes it difficult for those who have been diagnosed to discuss their experiences with epilepsy, but it can also lead to a negative attitude and perception among those who provide management for epilepsy patients. A thorough education about epilepsy is crucial to dispelling myths and misconceptions because it equips people with the knowledge and abilities needed to effectively manage seizures while lowering stigma and misconceptions about this condition (Makhado *et al.*, 2023).

A study by Alzhrani et al. (2021) on school teachers' attitude towards student with epilepsy found that years of experience significantly associated with increased attitude, while age is significantly associated with reduced attitude score. Additionally, children with epilepsy suffers from extremely unfavourable attitude in the context of physical and social environments, especially in schools that led to difficulties in learning and social relationship, associated with social and psychological factors in the community.

Individuals who have epilepsy continue to suffer greatly from stigma that is expressed or claimed based on misconceptions, falsehoods, and myths that have persisted for quite some time. They and their closed relatives face socio-culture barriers like negative attitudes and discrimination due to causation beliefs (Mohamed *et al.*,

2021). Additionally, Malik et al. (2022) stated that people with epilepsy found that social attitudes were more harmful than the disease itself. Adults struggling with epilepsy usually have problems with social acceptance such as being admitted to a good institution and access to public housing. That study also reported that losing jobs and difficult to get married were the consequences of the disease. A study by Karimi & Akbarian (2016) found that people with less knowledge about the disease were prone to perceive and have misconceptions such as epilepsy is incurable, hereditary, a type of madness or mental problem, and a contagious disease.

### **2.2.5 Practice of first-aid epilepsy**

The community's first-aid practices for managing epileptic seizures are influenced by various factors, such as sociodemographic variables (age, sex, marital status, occupation, place of residence, education, and employment), the presence or absence of epilepsy, whether or not there is a family history of epilepsy, whether or not participants have received epilepsy-related training, and attitudes towards epilepsy (Chen *et al.*, 2022). Based on a study by Asnakew et al. (2022) that involved 756 participants, 71.7% of the South Gondar community had unsafe practice of first-aid epileptic seizure. This includes individuals who were illiterate, did not take any training related to epilepsy, had poor knowledge, and had negative attitudes towards epilepsy (Asnakew *et al.*, 2022). However, participants that reached secondary education had safe practice in managing epileptic seizure. Participants that were illiterate might not have any access to the information from different reading materials causing them to not gain knowledge regarding first-aid management and causing unsafe practice (Asnakew *et al.*, 2022). Furthermore, it is also shown that those with poor knowledge on the epilepsy itself and negative attitudes about the disease had an unsafe practice in the management of epileptic seizures (Oumer *et al.*, 2020).

Asadi-Pooya et al. (2022) stated that the public and medical professionals should both benefit from the development of standardised seizure first-aid training programmes, as seizures are unpredictable and can occur at any time or place. Significant gains in self-efficacy and knowledge of seizure first-aid were observed in one recent study following such a programme.

#### **2.2.6 Correlation between knowledge, attitude, and practice of first-aid epilepsy**

When it comes to controlling epileptic seizures, participants who completed secondary education had safe practises. The lack of access to information from various reading materials may have prevented illiterate participants from learning about first-aid management, which could have led to unsafe practises (Asnakew *et al.*, 2022). Moreover, research indicates that individuals with inadequate understanding of epilepsy and a pessimistic outlook on the condition might handle epileptic seizures in a risky manner (Oumer *et al.*, 2020).

Sometimes, disparate religious and cultural beliefs cause people to develop unfavourable attitudes towards epilepsy, making treatment efforts for the condition ineffective. It was demonstrated by Elhassan et al. (2017) that epileptic patients could suffer significant harm from the incorrect mindset and behaviours. According to a study by Asnakew et al. (2022), participants with a negative attitude, low knowledge of epilepsy, lived in rural area, those who did not receive any training linked to epilepsy, and individuals without literacy were strongly correlate with unsafe practice of first-aid epilepsy. Moreover, participants with inadequate knowledge and negative attitude were more likely to manage seizures in an unsafe way, respectively, in contrast to those with good knowledge and a positive attitude (Asnakew *et al.*, 2022).

Additionally, a study by Oumer et al. (2020), shows that higher educational level could lead to better knowledge regarding first-aid epilepsy. As education progresses, knowledge about epilepsy is gained from classes in education, while practice comes through experience and application of knowledge. The likelihood of using social media, getting internet access, and having access to a variety of scholarly literature all rise with increased education. It's interesting to note that improving understanding, attitudes, and practices regarding epilepsy is largely dependent on education. A study by Shawahna & Jaber (2020) shows that knowledge scores were positively correlated with attitudes. The findings may indicate that educational or training interventions can improve nursing students' knowledge of epilepsy and their positive attitudes towards PWEs.

Szemere & Jokeit (2015) reported that poor knowledge and misconceptions could cause poor practice and unfavourable attitudes towards people with epilepsy, which at last could negatively impact the quality of life of the children and their families. A study conducted by Oumer et al. (2020) on school teachers shows a strong correlation between knowledge, attitude, and practice which misconceptions and inadequate knowledge can lead to poor practises and unfavourable attitudes and can have a detrimental impact on the quality of life for children with epilepsy and their families. Curiously, one of the most important steps in creating plans to stop stigmas and misunderstandings about epilepsy is to consistently enhance the expertise, disposition, and methods of educators. A teacher's high level of expertise is crucial to the educational experiences of students with epilepsy.

## 2.2.7 Theoretical and Conceptual Framework

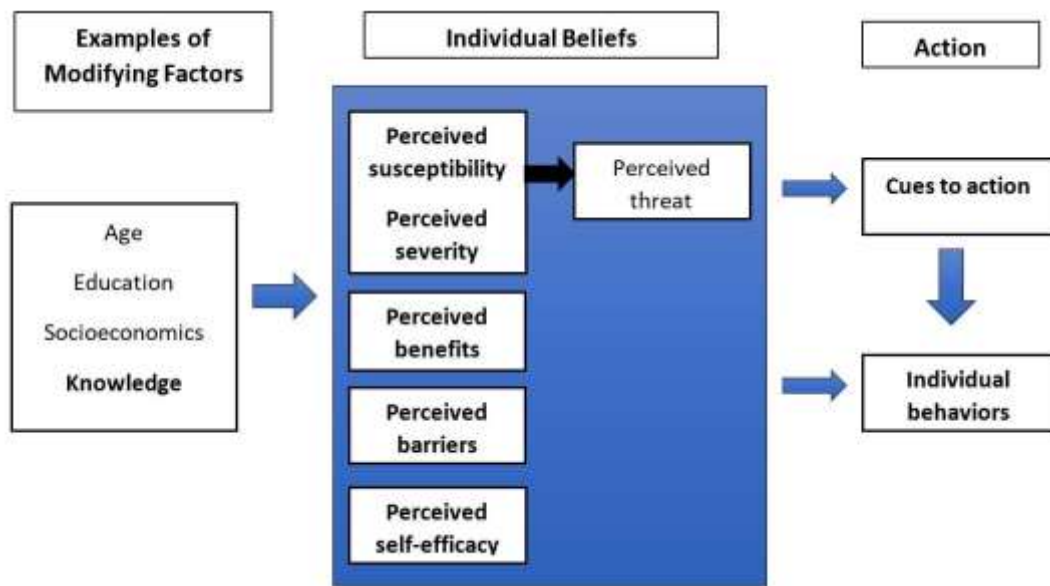


Figure 2. 1 Conceptual framework of Health Belief Model (Glanz et al., 2015).

A conceptual study of Health Belief Model (HBM) was selected to guide this study. Health Belief Model (HBM) is a conceptual framework developed by social psychologists Hochbaum & Rosenstock in the 1950s. This model posits that health behaviour is determined by individual's belief and perception on a disease and strategies available to decrease its occurrence. It's proposed that people who perceive health problems to be serious are more likely to engage in behaviours that can prevent and reduce severity of the health problem. This model consists of four perceptions that serve as the main construct, and it includes perceived seriousness, perceived susceptibility, perceived benefits, and perceived barriers.

Perceived seriousness can be referred as a subjective assessment on the severity of a health problem and its potential consequences (Janz and Becker, 1984 & Glanz, Rimer and Viswanath, 2008). For instance, people that perceived epilepsy as a serious health problem would be more likely to engaged in behaviours that can reduce the

severity of the problem or prevent the health problem from happening. Perceived susceptibility refers to the assessment of risk of developing a health problem. This model predicts that people that perceived to be susceptible to health problems are more likely to engage with behaviours that can reduce the rate of occurrence of that health problem, while those who less susceptible may deny that they are at risk of developing that health problem. Perceived benefits can be referred as a health seeking behaviour, which is one's assessment about the efficacy of engagement in certain health-promoting behaviour to decrease the risk of health problems. Perceived barriers are a subjective assessment about obstacles to behaviour change in an individual. Cue to action is a paramount importance that can trigger necessary engagement in any health-promoting behaviour and can be either internal or external.

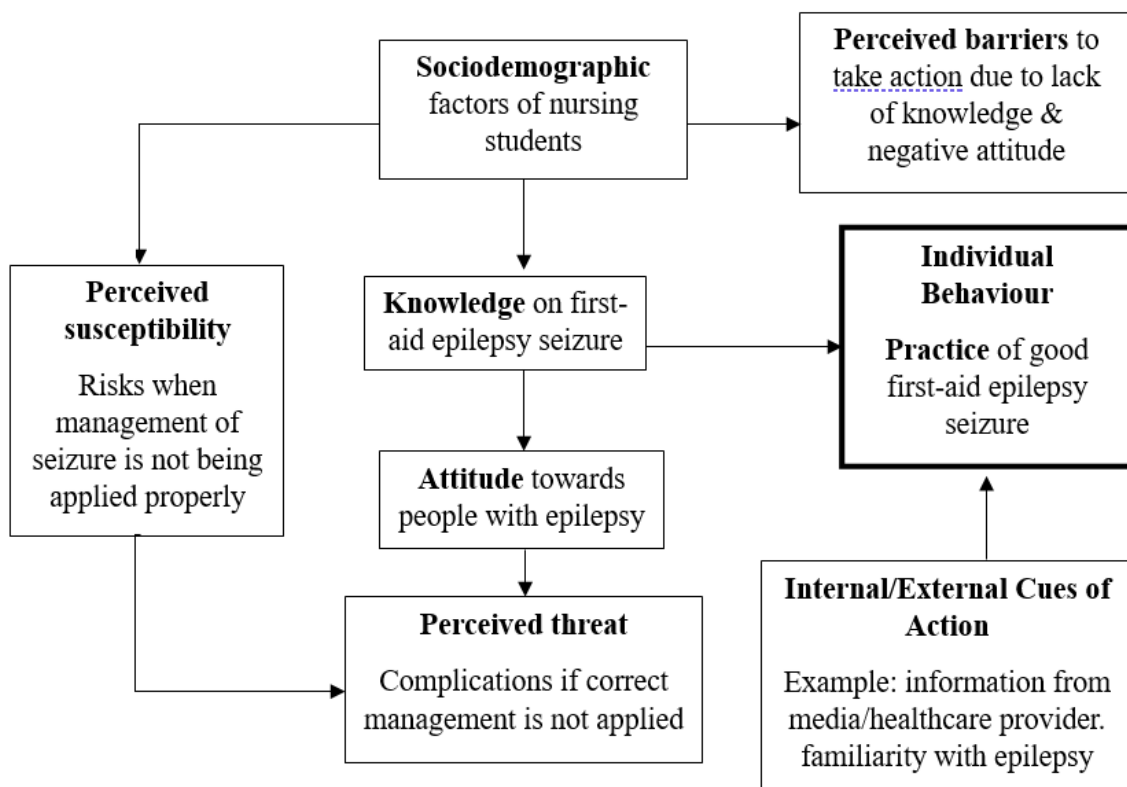


Figure 2. 2 The adopted theory of Health Belief Model (HBM) (Glanz et al., 2015).

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 Research Design**

In this study, descriptive and cross-sectional study design will be used. This study design is a type of observational study in which the researcher measures the outcome and the exposure on participants at the same time. The researcher can then study the association between these variables. The participants in the study will be selected based on inclusion and exclusion criteria, unlike case-control studies where participants chosen from the outcome status; or cohort studies where participants chosen from the exposure status (Setia, 2016).

### **3.2 Study Setting**

This study were conducted at Universiti Sains Malaysia (USM), Health Campus, specifically on School of Health Sciences, which consists of three schools including School of Medical Sciences, School of Health Sciences, and School of Dental Sciences. School of Health Sciences provides nine programs and nursing program is one of them. Nursing programs are divided into diploma and degree levels, which both have different curriculums and syllabuses. Nursing students in USM will follow the requirements by Nursing Board's Malaysia to graduate and have license as registered nurse in the future.

### **3.3 Research Duration**

This study was conducted in the period of 10 months, which was from October of 2023 until August of 2024 as per scheduled. Data collection were conducted for up to 3 months, which was from January to March 2024.

### **3.4 Research Population**

In order to propose the objective of the research, the target population in this study were undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus. The total number of undergraduate nursing students is 254. The population meets the inclusion and exclusion criteria.

### **3.5 Subject Criteria**

#### **3.5.1 Inclusion and Exclusion Criteria**

##### *The inclusion criteria*

- 1) Undergraduate and diploma nursing students in Universiti Sains Malaysia (USM), Health Campus.
- 2) Age 18 years old and above.

##### *The exclusion criteria*

- 1) Have an underlying psychiatric disorder.



### 3.6 Sampling Plan

#### 3.6.1 Sampling Size Estimation

The sample size for objectives 1, 2, and 3 were calculated using the single proportion formula. While the sample size for objective 4 were calculated using sample size calculator (Arifin, 2021). The sample size was calculated for each objective based on the data from a previous study conducted among the same characteristic target population (Abdul Kadir *et al.*, 2015).

**Formula:**

$$n = \left[ \frac{z}{\Delta} \right]^2 p(1 - p)$$

Which;

n = Sample size

p = anticipated population proportion

z = value of standard normal distribution = 95% = 1.96

$\Delta$  = precision = 0.05

**Objective 1: To determine the level of knowledge of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.**

Confidence level set at 95% (1.96), the margin sampling error 5% (significance level = 0.05) and considering 10% drop out of the respondents. The percentage of respondents who had good knowledge were 26.9% (Adal & Abebe, 2022).

$$n = \left[ \frac{1.96}{0.05} \right]^2 0.269 (1 - 0.269)$$

$$n = 302 + 10\% \text{ drop out}$$

$$n = 332 \text{ respondents}$$

**Objective 2: To determine the level of attitude of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.**

Confidence level set at 95% (1.96), the margin sampling error 5% (significance level = 0.05) and considering 10% drop out of the respondents. The percentage of respondents who had positive attitude is 45.3% (Alsulami *et al.*, 2022).

$$n = \left[ \frac{1.96}{0.05} \right]^2 0.453 (1 - 0.453)$$

$$n = 380 + 10\% \text{ drop out}$$

$$n = 418 \text{ respondents}$$

**Objective 3: To determine the level of practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.**

Confidence level set at 95% (1.96), the margin sampling error 5% (significance level = 0.05) and considering 10% drop out of the respondents. The percentage of respondents who had good practice were 40.9% (Adal & Abebe, 2022).

$$n = \left[ \frac{1.96}{0.05} \right]^2 0.409 (1 - 0.409)$$

$$n = 371 + 10\% \text{ drop out}$$

$$n = 408 \text{ respondents}$$

**Objective 4: To identify the correlation between the level of knowledge, attitude, and practice of first-aid epilepsy among undergraduate nursing students in Universiti Sains Malaysia (USM), Health Campus.**

Correlation between knowledge, attitude, and practice of first-aid epilepsy,  $r = 0.30$  (Adal & Abebe, 2022). Total sample size estimated is 94.

The screenshot shows a web-based sample size calculator. The title is "Sample Size Calculator" with a home icon and "Sample Size Calculator (web)". The main heading is "Pearson's Correlation - Hypothesis Testing<sup>1</sup>". The input fields are: Expected correlation (r): 0.3; Significance level (α): 0.05 (Two-tailed); Power (1 - β): 80%; Expected dropout rate: 10%. There are "Calculate" and "Reset" buttons. The output fields are: Sample size, n = 84; Sample size (with 10% dropout), n<sub>drop</sub> = 94.

Figure 3. 1 Calculation for sample size using sample size calculator

Based on the estimated sample size from objective 2, the largest sample size was chosen which is 418. However, since the total population of nursing students are 254, all students were selected as respondents in this study. As a conclusion, the total sample size in this study is 254.

### **3.6.2 Sampling Method**

This study used non-probability convenience sampling. Convenience sampling is often used in medical research studies, which involve selecting participants or clinical cases that are available at a particular location or medical record database. The most common non-probability sampling method used is convenience sampling, in which participants are selected spontaneously based on their accessibility or proximity to the research. The use of student volunteers as participants are the most common examples of convenience sampling in developmental science (Jager *et al.*, 2017).

## **3.7 Research Instrument**

### **3.7.1 Instrument**

In this study, an adapted self-administered questionnaire was used to collect data consisting of 4 sections: section A, B, C and D with total of 39 items from Aleid et al. (2020) and Mohamad et al. (2023). Section A will be asking about the participant's sociodemographic data. Section B and C was adapted from Aleid et al. (2020) which consisting of questions on knowledge and attitudes towards providing first-aid epilepsy. While section D was adapted from Mohamad et al. (2023) consisting of questions concerning practice of first-aid epilepsy among undergraduates nursing students in USM Health Campus.