

# Community First-aid Knowledge of Accidents: A Qualitative Phenomenological Study in Jakarta, Indonesia

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## ABSTRACT

**Background.** First-aid is the effort to help and temporarily care for accident victims before receiving further assistance. Providing quick and appropriate aid to victims prevent their condition from worsening.

**Objectives.** This study aims to explore the knowledge and experiences of the heads of neighborhood units (RWs) of first-aid in accidents in Cempaka Putih Tengah Subdistrict Jakarta, Indonesia.

**Methods.** This is a qualitative research with a phenomenological design that aims to explore the community's knowledge of first-aid in greater depth. Data collection was carried out through in-depth interviews and observations. The study had six participants which were selected using purposive sampling technique. All participants are male, based on the understanding that men often serve as heads of households and play a crucial role within their families or communities; all participated in the Focus Group Discussion (FGD). The data analysis was conducted using categorization and thematic analysis, and was manually analyzed using the Collaizi method.

**Results.** This study identified three main themes regarding the public's knowledge and experience in providing first-aid during accidents: 1) limited public knowledge of effective first-aid actions in accident situations; 2) lack of practical experience in providing first-aid, leading to panic and confusion; and 3) limited understanding of accident prevention, which increases the risk of injury in the surrounding environment.

**Conclusion.** The limited knowledge and practical experience among the public, despite some having attended first-aid training, leads to unpreparedness and panic when faced with accidents. Additionally, the limited understanding of accident prevention contributes to an increased risk of injury in the surrounding environment. Therefore, it is crucial to provide more comprehensive training, including practical simulations, to improve the public's knowledge and skills in managing and preventing accidents.

**Keywords:** accidents, first-aid, knowledge, qualitative study

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## INTRODUCTION

First-aid is an effort to provide assistance and temporary care to accident victims before receiving further assistance from doctors or paramedics.<sup>1</sup> Accidents are unplanned and unwanted events that can cause injury, illness, or material damage to anyone. Therefore, temporary care for accident victims are needed before receiving more comprehensive assistance from doctors or paramedics.<sup>2</sup> First-aid in accidents is a medical action carried out as soon as possible to help accident victims performed by trained members of the public.<sup>3</sup>

The World Health Organization (WHO) in 2020 stated that unintentional injuries remain the leading cause of death and disability among adolescents. Approximately 72% of all deaths among adolescents aged 10 to 24 years are often due to injuries caused by four main factors: motor vehicle accidents (30%), unintentional injuries (15%), homicide (15%), and suicide (12%).<sup>4</sup> When compared to traffic accident data for the DKI Jakarta Province in 2022, which reported 6,141 cases (a 15.9% increase from 2021).<sup>5</sup> Furthermore, more than 1 million serious sports-related injuries occur at schools every year among adolescents aged 10 to 17 years.<sup>4</sup> Data from the Basic Health Research (Riskesdas) in 2018 showed that injuries in the community have been increasing annually. From 2013 to 2018, there was a 9.2% increase in injuries recorded in Indonesia.<sup>6</sup>

The timely and accurate provision of assistance to those in need helps prevent the victim's condition from worsening. However, often when wanting to provide assistance to the afflicted, the rescuer may not know how or may lack sufficient knowledge, thus inadvertently harming the victim.<sup>7</sup>

Knowledge is something distinctly human because it originates from humans and is for humans in the pursuit of their humanity.<sup>8</sup> Previous research in Indonesia and other countries has found that on average, respondents have insufficient knowledge of first-aid.<sup>9,10</sup> Other studies have also revealed that, on average, respondents lack knowledge in providing first-aid.<sup>11,12</sup>

Based on information from one of the residents of Cempaka Putih Tengah Subdistrict, Indonesia, typically when an accident victim is found, they are immediately taken to the nearest hospital or healthcare facility. In handling emergency accidents, there must be adequate facilities or human resources for first-aid before the victims are taken to hospitals or other healthcare services.

## OBJECTIVES

This study aims to explore the knowledge of first-aid in accidents among the heads of neighborhood units (RWs) in Cempaka Putih Tengah Subdistrict. Specifically, this study has the following objectives: (a) to explore each participant's knowledge of first-aid techniques in accident situations, and (b) to explore each participant's personal experience in providing first-aid for accidents.

## METHODS

### Study Population and Design

The approach used in this study is qualitative with phenomenological design in which researchers identify the essence of human experience in sensory, conceptual, moral, aesthetic, and religious aspects related to a phenomenon experienced by the research subject.<sup>13</sup> In this case, the researcher sets aside his own experience to understand the experience of the research subject.<sup>14</sup> This approach was selected because it enabled the exploration of individual perspectives and subjective experiences that were central to understanding the community's first-aid knowledge and practices.

This research was conducted in November – December 2023 in East Cempaka Putih Village, Cempaka Putih District, Central Jakarta Administration City, DKI Jakarta. East Cempaka Putih Village was chosen as the research location because it was an area prone to disasters, hence, the incidence of accidents was likely to be higher, and because there was still a significant gap in the community's knowledge of first-aid. The participants in this study total six community members (Table 1), selected using purposive sampling technique. Inclusion criteria: 1) willing to participate in the study until its completion; 2) cooperatively provide the information needed by the researchers in line with the study's objectives; 3) resided or lived in the study location for at least five years; 4) experienced an accident or have administered first-aid to family members or others; and 5) Chairpersons of RWs in the East Cempaka Putih Village, Cempaka Putih District, Central Jakarta Administration City, DKI Jakarta.

In qualitative research, researchers generally use more than one data collection method to strengthen the results of excavation, as well as part of triangulation efforts.<sup>15</sup> Triangulation is conducted by combining various sources of information and reviewing relevant documents related to the

**Table 1.** Demographics and Characteristics of Participants Interviewed

Code of Participants (n = 6)	Age	Gender	Level of Education	Address	Length of Stay in the Study Location
<i>Participant 1 (P1)</i>	41	Male	Bachelor's Degree	East Cempaka Putih Village	≥15 Years
<i>Participant 2 (P2)</i>	52	Male	Bachelor's Degree	East Cempaka Putih Village	≥15 Years
<i>Participant 3 (P3)</i>	51	Male	High School	East Cempaka Putih Village	≥15 Years
<i>Participant 4 (P4)</i>	43	Male	High School	East Cempaka Putih Village	≥15 Years
<i>Participant 5 (P5)</i>	51	Male	High School	East Cempaka Putih Village	≥15 Years
<i>Participant 6 (P6)</i>	57	Male	High School	East Cempaka Putih Village	≥15 Years

research, consulting with experts to reduce data bias and gain insights, and utilizing literature studies. Data collection in this study was conducted through Focus Group Discussions (FGD), observation, and in-depth interviews (Table 2). In-depth interviews were carried out with six participants who were considered key informants. Interviews were conducted using audio recording devices and an interview guide. Key informants were selected based on the following criteria: 1) they are from or currently reside in the study area; 2) Head of the Neighborhood Association (Kepala RWs); 3) they are willing to be active participants in the research; 4) they are available for interviews; and 5) they provide information in their native language. The exclusion criteria for FGD, key informants, and in-depth interviews are individuals currently working as medical or healthcare professionals, as well as respondents with certain medical conditions that prevent active participation in discussions or interviews.

Table 1 showed the participants were selected with age range of 41 and 75 years and with differing educational backgrounds. Participants were also drawn from different neighbourhood units (RWs) in East Cempaka Putih Village, allowing for potential insights from varying social contexts within each area.

Moreover, all participants are male, typically serving as heads of RWs or as authoritative figures in their communities. They were chosen to ensure that participants possessed a comprehensive community knowledge of first-

aid as well as experience in managing emergencies in their neighbourhoods. We acknowledge the limitation regarding gender diversity among participants; however, this reflects traditional roles in the community, where men are more often represented as heads of RWs or community leaders. The selection of participants with these characteristics is expected to provide a sufficient range of responses to understand the phenomenon under study, though it cannot be claimed as entirely representative.

Table 2 showed the activities began with an introduction session where the researchers introduced themselves to the participants, explained the research objectives, discussed informed consent, and established a time contract with the participants. This was followed by the implementation session, during which FGDs, observations, and in-depth interviews were conducted. Finally, the closing session was held where the researcher summarized the discussion results, expressed gratitude, and concluded the activities. All participants took part in the FGDs.

### Research Instruments

The instruments used in this research were developed from a theoretical perspective through literature analysis. The researchers employed a questionnaire with open-ended questions (Table 3). These questions allowed participants to respond in their own words without being constrained by predetermined answer choices. Additionally, these

**Table 2.** Implementation Strategy

Stages of Activities and Time	Activity Description	Activities of Participants
<i>Introduction (10 minutes)</i>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Explanation of research objectives</li> <li>3. Informed consent</li> <li>4. Time contract</li> </ol>	<ol style="list-style-type: none"> <li>1. Introduce yourself</li> <li>2. Listen to the explanation of the purpose of the study</li> <li>3. Conduct questions and answers about research objectives</li> <li>4. Provide informed consent</li> <li>5. Approve a time contract</li> </ol>
<i>Implementation (120 minutes)</i>	<ol style="list-style-type: none"> <li>1. Focus Group Discussion (FGD)</li> <li>2. Observation</li> <li>3. In-depth interview</li> </ol>	<ol style="list-style-type: none"> <li>1. Listen and pay attention</li> <li>2. Questions and answers</li> </ol>
<i>Closing (10 minutes)</i>	<ol style="list-style-type: none"> <li>1. Summary of the results of the discussion</li> <li>2. Appreciation to participants</li> <li>3. Close the FGD</li> </ol>	<ol style="list-style-type: none"> <li>1. Listen</li> <li>2. Feedback</li> </ol>

**Table 3.** Research Questions

List of Questions	Purpose of the Questions
1. What do you know about first-aid?	To assess basic knowledge about first-aid
2. In your opinion, does fainting fall under the category of an accident?	To identify perceptions of fainting as an accident
3. In your opinion, does bleeding fall under the category of an accident?	To identify perceptions of bleeding as an accident
4. In your opinion, does a broken bone fall under the category of an accident?	To identify perceptions of a broken bone as an accident
5. What actions do you take when you experience or witness a family member having an accident (fainting, bleeding, or a broken bone)?	To analyze individual responses to accident scenarios
6. When you see or you are at the scene of an accident, what is the first thing you would do would?	To identify the first-aid actions of the respondents
7. How do you feel when you experience an accident (fainting, bleeding, or a broken bone)?	To explore the emotional aspects related to accidents
8. In your opinion, what solutions should be implemented to prevent accidents?	To gather suggestions from the community to prevent accidents

questions were designed to encourage participants to share their firsthand experiences. All open-ended questions were independently created by the researchers.

The first section of the questionnaire includes an explanation of the research, the second section pertains to consent to participate, and the third section covers demographic data including name, age, gender, educational level, address, and duration of residence in the research location. The fourth section of the questionnaire contains research questions aimed at assessing the extent of participants' experiences with first-aid in accidents. The list of questions was formulated based on the research objectives and additional questions derived from the data collected during interviews with the participants.

To determine the feasibility as a research instrument and ensure accurate and reliable results, the researchers first conducted validity and reliability tests (Table 4).

Based on the validity and reliability test results presented in Table 4, the findings indicate that the research instrument is reliable for exploring the understanding and responses of the community regarding first-aid and accidents. The questions can be used in further research to gain deeper insights into the behaviors and knowledge of the community concerning safety and first-aid.

**Mode of Analysis**

Data analysis was conducted using categorization and thematic analysis. The research findings were manually analyzed using the Collaizi method, which consists of nine steps: 1) understanding the phenomenon being studied; 2) gathering descriptions of the phenomenon from all participants; 3) reading all participant descriptions; 4) re-reading the interview transcripts and highlighting significant statements from each participant; 5) translating and interpreting the meanings embedded in each significant statement; 6) organizing derived meanings into thematic clusters; 7) writing a comprehensive description; 8) meeting

with participants to validate the analysis results; and 9) incorporating validated data into the final description. This method allows researchers to uncover emerging themes and explore their interrelationships, providing a clear and logical process for examining the fundamental structure of an experience.<sup>16</sup>

Transcription was conducted verbatim by the researchers to maintain data accuracy. Each transcript was reviewed to ensure precision, contributing to a trustworthy analysis process. Data management and security were also prioritized, with secure storage methods and restricted access to sensitive data, ensuring the confidentiality and integrity of participant information. Research data was stored on a secure server accessible only to the principal researcher and authorized members of the research team. To further protect participant privacy, the data was encrypted and supplemented with additional security measures.

The research data derived from participants' experiences were highlighted in the form of themes, sub-themes, and categories. Each theme and sub-theme were used to draw conclusions regarding participants' first-aid knowledge and experiences. Thematic analysis was further supported by Guba and Lincoln's principles to enhance rigor and trustworthiness: 1) Credibility, through member checking and triangulation; 2) Transferability, by providing detailed descriptions; 3) Dependability, by keeping an audit trail; 4) Confirmability, by ensuring findings are grounded in participants' responses; and 5) Audit trails for transparency.<sup>17</sup>

To address potential research biases, the study accounted for 11 types of bias, including: 1) Desire to Please Bias; 2) Acquiescence Bias; 3) Confirmation Bias; 4) Observer Bias; 5) Sampling Bias; 6) Self-Selection Bias; 7) Instrument Bias; 8) Leading Questions; 9) Time-Related Bias; 10) Situational Bias; and 11) Analytical Bias. To minimize bias, the researchers employed a strong research design, applied appropriate sampling techniques, specifically purposive

**Table 4.** Validity and Reliability Tests of the Research Instruments

Validity Test	
<b>Content Validity</b>	Involves consulting two experts in the field of first-aid and safety to evaluate the relevance and clarity of each question. <i>Results:</i> All questions were deemed valid by the experts, as they encompass important aspects of knowledge and responses related to accidents.
<b>Construct Validity</b>	Correlation with indicators, which involves analyzing whether the questions can represent the concepts of first-aid and understanding of accidents. <i>Results:</i> The questions related to first-aid actions and perceptions of accidents showed a significant relationship with health behavior theory.
<b>External Validity</b>	Field testing was conducted by administering a trial to a small sample to observe response consistency. In this research, the field trial took place at a location different from the research site, specifically among community groups in Mangga Dua Selatan, Sawah Besar District, Central Jakarta, DKI Jakarta Province. <i>Results:</i> Participants provided responses that were consistent with their knowledge of first-aid.
Reliability Test	
<b>Internal Reliability</b>	Utilizing the Cronbach's Alpha coefficient to measure the consistency of responses. <i>Results:</i> Cronbach's Alpha = 0.85, indicating good reliability
<b>Test-Retest</b>	Administering the same questionnaire or questions to the same respondents after a specified period. <i>Results:</i> A high correlation (r = 0.78) indicates the stability of results over time.

sampling, involved all researchers in independently evaluating the data, used measurement tools that have been validated and tested for reliability, and educated participants about the research objectives to minimize response bias.

Data confidentiality and security were maintained through several measures: 1) anonymization; 2) use of codes or pseudonyms; 3) restricted data access; 4) secure data storage; 5) destruction of sensitive data post-research; 6) informed consent; 7) transparency with participants; and 8) adherence to institutional ethical guidelines, including ethical approval.

## Ethical Considerations

Ethical approval in this study was carried out at the Health Research Ethics Commission of Husada Jombang College of Health Sciences with number 012-KEPKSHJ. In addition to conducting ethical testing, before carrying out this research, research permits were also arranged at the local government.

## RESULTS

Our research findings indicate that the basic knowledge of the community regarding first-aid is limited. The lack of information available to the public about first-aid remains a primary factor contributing to this deficiency in knowledge. To further elaborate on the research findings, we have divided the results into three themes: 1) limited public knowledge on effective first-aid actions in accident situations; 2) lack of practical experience in providing first-aid to accident victims leads to panic and confusion; and 3) limited understanding of accident prevention among the public increases the risk of injury in surrounding environments. Each theme includes sub-themes with specific categories that serve as key terms for the resulting themes (Table 5). Sub-themes represent specific topics within the main theme and are defined to better direct the research findings in line with the study's primary objectives.

### Limited Public Knowledge on Effective First-aid Actions in Accident Situations

The community has limited knowledge about first-aid. Interviews with the six participants revealed that public understanding of effective first-aid actions in accidents was generally limited. Most participants demonstrated minimal

knowledge about effective first-aid procedures in emergencies. This limited knowledge can hinder their ability to provide the necessary assistance during emergencies. Community knowledge about first-aid obtained two sub-themes, namely accident knowledge and accident categories. The accident knowledge sub-theme was obtained by 4 sub-categories (caused by sudden events, traffic accidents, disasters, and injuries), while the accident sub-category obtained four sub-themes (fainting, fainting excluding bleeding, and fractures).

### First-aid Knowledge Sub Theme

#### Excerpts of the category – first helper

*“Pertolongan pertama itu adalah orang yang melakukan pertolongan pertama, jadi itu tugas siapa yang menemukan orang yang butuh pertolongan.” (P1).*

“First-aid is a first-aider, that is a job for those who find the person.” (P1)

**Context:** This statement shows basic understanding of the role of first-aid providers. However, P1 considers first-aid as the task of anyone who finds a victim, without realizing the importance of further knowledge regarding proper rescue procedures.

#### Citation category statement – take the victim to the hospital

*“Kalau yang gue pikir sih, berarti kalau kita bantu orang pingsan atau patah tulang, ya bawa mereka ke rumah sakit.” (P2).*

“What I have in mind is, when we help people who faint or have fracture, we take them to the hospital.” (P2)

**Context:** P2 considers the appropriate course of action in dealing with victims of fainting or broken bones is to take them to the hospital. This reflects a limited understanding of the more concrete first-aid measures that can be done before taking a victim to the hospital.

#### Excerpts of the category – first-aid

*“Jadi maksudnya, pertolongan pertama yang kita lakukan kalau kita nemuin orang pingsan, misalnya, atau berdarah.” (P3)*

“It means that the first-aid that we do is when we find people who is fainting or bleeding.” (P3)

**Table 5.** Thematic Analysis of Community First-aid in Accidents

Theme	Sub theme	Category or keyword
<i>Limited Public Knowledge on Effective First-aid Actions in Accident Situations</i>	First-aid knowledge	First-aiders, help bring it to the hospital, early aid, helping the sick
	Accident category	Fainting, fainting is not included, bleeding, fracture
<i>Lack of Practical Experience in Providing First-aid to Accident Victims Leads to Panic and Confusion</i>	First action	Eucalyptus oil, hospital
	Attitude	Massage therapist, panic, helpless
<i>Limited Understanding of Accident Prevention among the Public Increases the Risk of Injury in Surrounding Environments</i>	Action	Take care of health, be careful

### Category statement – help the sick

*“Menurut gue, pertolongan pertama itu membantu atau menolong orang yang sakit.” (P4).*

“I think the first-aid is to help the sick people.” (P4)

**Context:** P4 defines first-aid more generally, but less understanding that first-aid measures also include rescuing victims from certain emergencies, not just sick people.

*“Ya, misalnya kita bantu orang yang tiba-tiba pingsan.” (P5).*

“Well, for example, we help people who suddenly faint.” (P5)

**Context:** P5 mentions concrete examples of situations where first-aid can be given, i.e., when someone faints. However, this statement suggests that their understanding of what to do when someone faints is still very limited, without further explanation of proper techniques or procedures.

### Accident Category Sub Theme

#### Excerpts of the category – fainting (statements that include accidents)

Fainting can be categorized as an accident if it results from a traumatic injury, such as a head impact from a traffic accident or a fall from a height. However, if fainting is caused by a medical condition (e.g., low blood pressure or dehydration), it is more appropriately classified as a health issue rather than an accident.

*“Ya, Pak, menurut saya, pingsan itu juga bisa karena kecelakaan, soalnya kejadian mendadak.” (P1)*

“Yes, I think fainting is caused by an accident too, because it is a sudden incident.” (P1)

**Context:** P1 considers fainting to be an accident because it happened suddenly. However, this understanding is not precise, as fainting can be caused by a variety of factors, not just due to accidents, which should be further identified in an emergency situation.

*“Menurut gue, pingsan juga termasuk kecelakaan, terus tetangga gue juga pernah kecelakaan, dia pingsan karena kepalanya kena benturan.” (P2)*

“I think fainting is also an accident, when my neighbor had an accident, he fainted because he hit his head.” (P2)

**Context:** P2 mentions that fainting can occur as a result of an accident, based on the experience of a neighbor who fainted after a head-on impact. This suggests that participants are beginning to associate fainting with physical accidents, although they still don't fully understand the types of accidents that can cause fainting.

*“Kalau pingsan sebenarnya tergantung situasinya. Kalau pingsan karena kecelakaan, ya berarti harus ditangani.” (P6).*

“Fainting actually depends on the situation. If you faint because of an accident, of course, we must help directly.” (P6)

#### Excerpts of the category – fainting – (statements that do not include accidents)

*“Menurut saya, itu bukan karena kecelakaan, lebih ke masalah kesehatan. Maksudnya, kalau pingsan bukan karena di jalan, ya, gue pikir itu masuk kategori kecelakaan.” (P2)*

“In my opinion, it was not an accident, more of a health problem. I mean, if you don't faint because you're on the road, yes, I think it's in the accident category.” (P2)

**Context:** P2 explains that fainting is not something that happens due to an accident, but rather has to do with health problems. P2 distinguishes between a medical condition that causes fainting and an event caused by a road accident. P2 argues that fainting, although it can occur in the context of a dangerous situation, does not qualify as an accident. This quote suggests that P2 considers fainting to be a more specific health problem, and he suggests that fainting events that occur not as a result of an accident cannot be categorized as an accidental event.

*“Mmmm kalau nggak dimasukin ke kategori itu, makanya dia beda lagi dari kecelakaan.” (P4)*

“Mmmm If you don't put it in that category, then it's different from an accident.” (P4)

**Context:** P4 states that if fainting is not included in the accident category, then it is a different thing from an accident in general. P4 gives the impression that fainting is more seen as a condition caused by non-accidental factors, such as personal health problems. P4 emphasized that fainting that was not caused by an accident should be treated differently in the category of events. This explanation signifies ignorance or a difference in perception between an accident situation related to physical trauma and a medical condition such as fainting that is considered a health problem.

#### Excerpts of the statement of distribution category including accidents

Bleeding is categorized as an accident if it occurs due to an external incident, such as a traffic accident, a sharp object injury, or a workplace injury. However, spontaneous bleeding unrelated to an external incident is more appropriately classified as a medical issue.

*“Ya, untuk dengan terjadinya kecelakaan atau sesuatu, berdarah bisa muncul.” (P1)*

“Yes, with an accident or something, bleeding can appear.” (P1)

**Context:** P1 recognizes that bleeding can occur as a result of an accident, but does not explain further about the types of bleeding or how to deal with it. This understanding suggests that even though they know that an accident can cause bleeding, they don't know what the proper rescue measures are.

*“Berdarah itu tergantung kondisinya, berdarah terjadi karena ada kejadian dulu, misalnya, dia lagi kerja, terus terpeleset, baru berdarah, itu termasuk kecelakaan.” (P2)*

“Bleeding depends on the condition, bleeding occurs because there was an incident in the past, for example, he was at work, then slipped, then he bled, that’s an accident.” (P2)

*“Menurut gue, iya, sepertinya berdarah juga termasuk dalam kategori kecelakaan” (P3)*

“In my opinion, yes, it seems like bleeding is also included in the accident category.” (P3)

*“Kalau berdarah sih, iya, gue pikir berdarah juga termasuk dalam kategori kecelakaan” (P5)*

“If it’s bleeding, yes, I think bleeding is also included in the accident category.” (P5)

### Excerpts of the category – fracture including accidents

Fractures can be categorized as accidents if they result from a strong impact, such as falling from a vehicle, being struck by a heavy object, or workplace accidents. However, fractures caused by degenerative conditions (e.g., osteoporosis) cannot be categorized as accidents.

*“Patah tulang termasuk kecelakaan, soalnya kalau seseorang mengalami patah tulang, pasti ada penyebab tertentu sebelumnya, seperti jatuh, misalnya anak naik sepeda terus tiba-tiba jatuh, nanti setelah dewasa baru kelihatan patah.” (P1)*

“A broken bone is an accident, because if someone has a broken bone, there must be a certain cause beforehand, such as a fall, for example a child riding a bicycle then suddenly falls, later when he is an adult, it will appear that there is a fracture.” (P1)

**Context:** P1 explains that fractures are always associated with accidents caused by certain factors, such as falls. In this case, P1 gives an example of an accident that a child may experience when he falls off a bicycle. P1 suggests that the fracture is the result of a previous event, although the impact is only visible after a person has grown up. This quote shows an understanding that accidents that result in injuries such as fractures have recognizable causes, but knowledge about handling these accidents is still limited.

*“Iya, masuk juga, gimana kejadian itu.” (P2)*

“Yes, it can be, for example how did it happen.” (P2)

**Context:** P2 states that fractures can also occur as a result of accidents, but further wants to know more about how they happen. P2 has not provided further explanation on the precautions or first-aid that need to be taken in the case of a fracture, although he acknowledged that the incident was related to an accident. This shows ignorance of the details of the first steps that need to be taken in a case like this.

*“Patah tulang, ya, kalau patah tulang karena kecelakaan di jalan, iya masuk, tapi kalau jatuh, itu disebut luka, Pak.” (P4)*

“Broken bones, yes, if you break a bone due to an accident on the road, it’s fine, but if you fall, it’s called an injury.” (P4)

**Context:** P4 said that a fracture due to a road accident is considered an accident, while if a person falls but does not have a fracture, it is only considered an ordinary injury. P4 shows that it distinguishes between the types of injuries that occur as a result of accidents. However, his understanding of first-aid for both types of injuries is still limited, and he did not elaborate on what steps needed to be taken when the accident occurred.

*“Sama seperti sebelumnya, Pak, tergantung lokasi kejadian, kalau jatuh dari motor dan jatuh hingga mengalami patah tulang, maka kejadian ini dikategorikan sebagai kecelakaan.” (P6)*

“Same as before, Sir, it depends on the location of the incident. If someone falls from a motorcycle and suffers a fracture, then the incident is categorized as an accident.” (P6)

**Context:** P6 underscores that an accident that occurs due to falling from a motorcycle is an event that can be categorized as an accident that requires further handling. P6 shows that the assessment of an injury or accident often depends on the location or manner in which the event occurred. However, this quote does not include further explanation of how the accident should be handled or the first-aid that should be given after the accident has occurred, suggesting that knowledge of first-aid procedures in an accident is not yet fully understood.

### **Lack of Practical Experience in Providing First-aid to Accident Victims Leads to Panic and Confusion**

Based on community experiences, many people are still unaware of the first-aid actions they should take. Some respondents reported feeling panicked and unable to take any action with accident victims, while others were confused about what to do when encountering accident victims. The lack of knowledge was assessed by evaluating participants’ ability to explain and apply appropriate initial actions in emergency situations. This assessment was conducted through interview questions designed to reveal participants’ understanding of first-aid procedures and through direct observation of their responses in simulated scenarios. Community experience of first-aid obtained two sub-themes, namely first action and attitude. The first action sub-theme obtained two sub-categories, namely eucalyptus oil and hospitals, while the attitude sub-category obtained three sub-themes, including massage therapist, panic, and helplessness.

### First Action Sub Theme

#### Excerpts of the category – Eucalyptus oil

*“Kalau pingsan, kalau ada keluarga yang pingsan, pertolongan pertama itu kasih bau-bauan, misalnya dikasih fresh care atau minyak kayu putih di hidungnya.” (P1)*

“If you faint, if there is a family member who faints, first-aid, yes, we must give you a smelly smell, for example, we give them fresh care and eucalyptus oil in their nose.” (P1).

**Context:** P1 explained that the first-aid applied was to give eucalyptus oil-like odors to the nose of the fainting victim. This shows a limited understanding of first-aid steps, where P1 considers the provision of smells as a solution that can overcome the fainting condition. However, this does not include the exact medical procedures that need to be performed, such as checking breathing or giving other more basic treatments.

*“Kita mau, kalau misalnya pingsan, paling bagus itu baunya minyak telon.” (P2)*

“We want, if for example, if a person is fainting, it is best to give them telon oil.” (P2).

**Context:** P2 emphasizes more on the use of telon oil as a solution to fainting. P2 thinks that the smell produced by telon oil can be helpful in such situations, but it also shows a lack of understanding of the importance of thoroughly examining the victim's condition. In a fainting situation, an understanding of the correct steps such as opening the airway or positioning the victim correctly is essential, rather than relying solely on smells.

*“Yang biasanya dilakukan untuk pertolongan pertama itu diolesin minyak kayu putih atau minyak angin di hidungnya.” (P3)*

“What is done for first-aid is smeared eucalyptus oil or wind oil in his nose.” (P3)

**Context:** P3 repeats the common habit of applying eucalyptus oil or wind oil to the nose of the unconscious victim. This showed that P3 had a similar understanding with the other participants about the steps to take, but did not mention other basic techniques that were more essential in providing first-aid to the fainting victim.

#### Excerpts of the category – bring to the hospital

*“Wah, kalau gitu gue bingung juga, tapi semoga jangan sampai kejadian. Kalau gue sih pasti minta tolong dulu biar bisa dibawa ke rumah sakit.” (P4)*

“Wow, then I'm confused too, but I hope it doesn't happen. If it were me, I would have asked for help first so I could be taken to the hospital.” (P4).

**Context:** P4 expressed his confusion if he had to deal with an emergency situation, but he suggested asking for help immediately so that the victim could be taken to the

hospital. While this is the right step in most cases, P4 does not mention any initial actions that can be taken before calling for help or taking the victim to the hospital, such as confirming the victim's breathing condition or applying pressure to the wound if necessary. This reflects the sense of panic and uncertainty that many people often experience in dealing with emergency situations.

*“Iya, pasti kalau ada keluarga yang gitu, langsung aja bawa ke rumah sakit sini.” (P6)*

“Yes, of course if there is a family like that, just take them to the hospital.” (P6)

**Context:** P6, despite showing a better sense of responsiveness, only thought about taking the victim directly to the hospital. However, there is no clear understanding of the importance of first-aid measures that can be taken at the scene to stabilize the victim's condition, such as stopping bleeding or providing breathing assistance.

### Attitude Sub Theme

#### Excerpts of the category – bring massage therapist

*“Kalau tulang patah, apalagi baru kejadian, itu belum tentu patah beneran, mungkin cuma keseleo. Untuk pertolongan pertama, mending bawa ke tukang pijat. Tapi kalau setelah dua atau tiga hari gak ada perubahan, harus cek ke dokter.” (P1)*

“If a bone is broken, especially if it just happened, it's not necessarily a real break, maybe it's just a sprain. For first-aid, it's better to take it to a massage therapist. But if after two or three days there is no change, you should see a doctor.” (P1)

**Context:** P1 expresses the view that when a person has a fracture, especially after an accident, it is not immediately considered a serious fracture. P1 prefers to take the victim to a masseuse for first-aid, assuming that there may only be a sprain. Only after a few days without a change did P1 plan to check the victim with a doctor. This indicates considerable ignorance of proper first-aid procedures, such as avoiding movement in a bone that is likely to be broken or performing medical attention early, which should have been done to avoid further complications.

#### Excerpts of the category – panic

*“Ya, kaget, panik, takut, takut karena pingsan. Kita takut kenapa, misalnya tabrakan terus pingsan, kita jadi takut, nanti gimana?” (P2)*

“Yes, shocked, panicked, and scared, because we are afraid, for example if a person collides and continues to faint, it makes us afraid, because we don't know what will happen next.” (P2)

**Context:** P2 describes the feelings of panic and fear that arise when a person faints after an accident. The fear stems from uncertainty about what happens to the victim after the collision. This reflects a very human emotional reaction but



also shows the confusion that can hinder quick and informed decision-making in emergency situations. This kind of response indicates a lack of knowledge about the first steps that need to be taken in dealing with a fainting victim, such as checking breathing or keeping the victim in a safe position until medical help arrives.

### Excerpts of the category – helpless

*“Waduhhhh, dulu pas gue liat langsung tu yah, gue takut litany, soalnya saya kan takut darah ya, jadi kagak bisa ngapa-ngapaan gue.” (P3)*

“Oh no, when I saw it directly, I was really scared, because I'm afraid of blood, so I couldn't do anything.” (P3)

**Context:** P3 expresses immense fear when witnessing an accident in person, especially due to his fear of blood. The helplessness that arises in situations like this shows that even if a person wants to help, fear can be a huge obstacle. Ignorance of what to do in an emergency, along with personal fears such as a phobia of blood, can worsen the response and cause individuals to take no action even if they are near the victim.

*“Yang lebih parah, gue juga bingung soalnya pas gue liat kecelakaan di depan mata, gue cuma nonton aja, gue gak berani mendekat” (P4)*

“The problem was, I was also confused because when I saw an accident in front of me, I didn't dare to approach.” (P4)

**Context:** P4 describes a situation where he sees an accident happening right in front of his eyes, but due to his confusion, he can only watch without daring to get close. This shows that despite the intention to help, the confusion left P4 not knowing what to do. His fear and confusion became an obstacle in providing timely first-aid. In many cases, this kind of confusion is a common reaction when a person is not trained or does not know what first-aid measures to take in an emergency situation.

*“Biasanya, kalau ada kecelakaan, kita juga takut buat ngapa-ngapain, paling cuma telpon polisi. Nanti juga ambulans datang.” (P5)*

“Usually, when there is an accident, we are also afraid to do anything, the thing that we do is to call the police. And later the ambulance will come.” (P5)

**Context:** P5 stated that in an accident situation, his fear of taking immediate action caused him to do only the easiest and safest thing, which was to call the police and hope for an ambulance to come soon. While this is an appropriate response in some circumstances, P5 does not describe efforts that can be made at the scene, such as applying pressure to the wound or ensuring the victim remains in a safe condition while waiting for medical assistance. This suggests that while there is awareness to call for help, there is a lack of understanding of what can be done to help the victim directly before medical help arrives.

### **Limited Understanding of Accident Prevention Among the Public Increases the Risk of Injury in Surrounding Environments**

The research findings indicate that the community often fails to provide effective first-aid due to a lack of knowledge. This deficiency in knowledge stems from inadequate information and uncertainty about the correct procedures for handling accidents. Based on the results of interviews conducted on the theme of accident prevention, one sub-theme was found, namely action, then from the sub-theme there were two categories, namely take care of health and be careful.

#### *Action Sub Theme*

### Excerpt of the category – health care

*“Kalau menurut saya, jaga kesehatan supaya nggak pingsan dan nggak berdarah juga.” (P2).*

“In my opinion, take care of your health so you don't faint and don't bleed either.” (P2)

**Context:** P2 reveals that taking care of personal health is considered a major preventive measure to avoid events that could lead to accidents, such as fainting or bleeding. Although maintaining health is important, this quote suggests that participants' understanding of accident prevention focuses more on preventive measures related to general health, without a deep understanding of the specific measures that can be taken to avoid or deal with accidents, such as prevention of physical injury or proper first-aid after an accident.

### Excerpts of the category – cautious

*“Pertama, pasti harus hati-hati dalam melakukan tindakan.” (P1)*

“First, certainly be careful in performing actions.” (P1)

**Context:** P1 reveals that caution in acting is the first thing to be considered to avoid accidents. This statement shows the importance of awareness of the risks that exist in every action. However, while this is a good principle, P1 does not describe concrete steps or specific actions that can be taken to prevent accidents, such as using personal protective equipment or adhering to certain safety protocols in daily activities.

*“Solusi pertama adalah selalu berhati-hati dalam menjalankan aktivitas sehari-hari, lalu pastikan kondisi tubuh dalam keadaan sehat jika ingin melakukan kegiatan.” (P3)*

“The first solution is to always be careful in carrying out daily activities, then make sure your body is in good health if you want to do activities.” (P3)

**Context:** P3 emphasizes that being careful in your activities and ensuring your body is in a healthy condition are the main steps that can be taken to prevent accidents. While this leads to good preventive measures, this quote also shows that attention is more focused on the health of

the body in general, without mentioning the importance of understanding specific accident prevention or first-aid measures in emergency situations.

*“Gue mau semuanya aman, jadi harus hati-hati.” (P4)*

*“I want everyone to be safe, so just be careful.” (P4)*

**Context:** P4 expresses a desire to ensure safety for everyone by emphasizing the importance of caution. This statement reflects good intentions to prevent accidents, but does not provide an explanation of the concrete actions that need to be taken in the prevention or handling of accidents. This reflects a limited understanding of more specific accident prevention, as well as a lack of knowledge regarding the first steps to take when an accident occurs.

## DISCUSSION

This study explored the knowledge and experience of the community in providing first-aid during accidents. From the interview results, three themes were identified in this study: 1) limited public knowledge on effective first-aid actions in accident situations; 2) lack of practical experience in providing first-aid to accident victims leads to panic and confusion; and 3) limited understanding of accident prevention among the public increases the risk of injury in surrounding environments. The findings revealed a significant gap in public knowledge of effective first-aid actions, experiences of panic and confusion during emergency situations, and limited awareness regarding accident prevention measures.

### Limited Public Knowledge on Effective First-aid Actions in Accident Situations

Based on interviews conducted with six participants, it was found that public knowledge about effective first-aid measures in accidents was generally limited. Most participants demonstrated minimal understanding of effective first-aid actions in emergency situations. This limited knowledge can hinder their ability to provide necessary assistance during emergencies.

These findings are consistent with previous research that has shown that community knowledge of first-aid is generally insufficient. Previous studies have revealed that, on average, the community lacks adequate knowledge of first-aid in accidents, resulting in low motivation to provide assistance.<sup>18,19</sup> This limited knowledge contributes to a lack of motivation and readiness to handle accidents, as also noted in other research indicating that individuals with lower first-aid knowledge tend to be less motivated to act.<sup>20</sup>

Furthermore, research highlights that first-aid knowledge is a crucial aspect that the community must possess, especially since accidents are frequent occurrences in everyday life. With the increasing frequency of emergency situations in recent years, having adequate knowledge has become increasingly important.<sup>21</sup> One study found that accidents have been the second leading cause of death in the United Arab Emirates

(UAE) over the past 15 years, claiming over 1,200 lives annually. These numbers could be significantly reduced if the public had a better understanding of first-aid measures in accidents.<sup>22</sup>

This study emphasizes the urgent need to enhance first-aid knowledge within the community. Integrating previous research, it reinforces the idea that good first-aid knowledge can reduce mortality from accidents and improve emergency preparedness. Therefore, it suggests the necessity for comprehensive educational programs aimed at increasing public understanding of first-aid, which can enhance motivation and effectiveness in managing accidents.

In an accident situation, laypeople are advised to follow these essential first-aid steps. First, ensure the environment is safe before approaching the victim. Next, immediately call emergency services for assistance. If the victim is unresponsive and not breathing, perform chest compressions-only (CPR). For bleeding, apply firm pressure to the wound to control blood flow. Finally, if the victim is breathing but unconscious, position them on their side in the recovery position to maintain stability until medical help arrives.<sup>23</sup>

This study contributes to the field by highlighting the specific challenges faced by communities with limited first-aid training, especially in situations demanding quick, informed decisions. These findings provide valuable insights for the development of public health policies aimed at enhancing community health literacy, emphasizing the importance of accessible training to equip the public with essential skills.

### Lack of Practical Experience in Providing First-aid to Accident Victims Leads to Panic and Confusion

Based on the interviews conducted, it was found that most participants did not know the initial first-aid actions to take based on their experiences. Some respondents felt panic and were unable to take any action with accident victims, while others were confused about what to do when they encountered accident victims. The lack of knowledge was measured by assessing participants' ability to explain and apply appropriate initial actions in emergency situations. This assessment was conducted through interview questions designed to reveal participants' understanding of first-aid procedures and direct observation of their responses in simulated scenarios.

The integration of findings from this study with previous research highlights a significant gap in first-aid knowledge and skills among the community. Inadequate knowledge, previous research has shown that many respondents struggled with providing effective first-aid, often resorting to requesting help or taking patients directly to the hospital.<sup>24</sup> This finding aligns with our interview results, where participants often did not know the correct initial actions and experienced panic or confusion when faced with an accident situation.

**Hesitancy and Uncertainty Post-Training:** Research by Cook & Keyte explained that despite some participants having attended first-aid training, they still felt hesitant and insecure about the actions to be taken.<sup>25</sup> This supports our

findings that even after training, many participants still felt unprepared or lacked confidence in applying the first-aid skills they had learned.

**Importance of Experience in Accident Handling:** a study by Lyashenko et al. emphasized the importance of experience in handling accidents, revealing that respondents' experience was still ineffective due to unclear procedures and responsibilities, which reduced the effectiveness of the first-aid system.<sup>26</sup> This is consistent with our study's findings, where participants lacked effective experience and clear procedures, reducing their ability to provide first-aid.

**Improvement through training:** research evidence shows that high-quality first-aid training significantly increases knowledge of appropriate psychosocial responses and first-aid skills, thereby enhancing self-efficacy and resilience.<sup>27</sup> This underscores that the identified lack of knowledge and skills in our study can be addressed through more effective training, providing clear information, and boosting participants' confidence in emergency situations.

Minimal understanding about first-aid was measured by evaluating participants' understanding of the correct actions to take in accident situations through interviews and observations. Participants who could not explain or apply the correct actions demonstrated a significant knowledge gap. These findings are consistent with previous research showing that first-aid knowledge and skills in the community are often insufficient, even after training. This study highlights the urgent need to improve the quality of training and provide clear information to address the existing gaps in knowledge and skills.

### **Limited Understanding of Accident Prevention among the Public Increases the Risk of Injury in Surrounding Environments**

Accidents occurring in the surrounding environment can be caused by various factors, such as poor road conditions, unsafe equipment, or risky behavior. The consequences of such accidents may include fainting, bleeding, fractures, or even death. However, the surrounding community often fails to provide effective first-aid due to a lack of knowledge. This lack of knowledge stems from insufficient information available and uncertainty about the correct procedures for handling accidents.

Previous research indicates that to prevent accidents and enhance public knowledge about accident prevention, it is crucial to conduct counseling and training. These measures can improve the level of public health in the surrounding environment.<sup>28</sup> This aligns with our findings, which show that limited knowledge of first-aid in the community can be addressed through adequate education and training.

Additionally, another study emphasizes that to improve accident prevention in daily activities, it is necessary for the community to be informed about the complete use of Personal Protective Equipment (PPE) during work or daily activities.<sup>29</sup> This supports our findings, which indicate that a

lack of knowledge and information about prevention measures and proper use of PPE are significant factors that need to be addressed to reduce the risk of accidents.

Integrating findings from previous research, we argue that accident prevention measures, when combined with first-aid knowledge, can substantially reduce injury rates. The community's limited understanding of these preventive strategies calls for urgent interventions aimed at raising awareness, particularly regarding environmental safety and the correct use of PPE.

Moreover, this study highlights that accident prevention cannot be addressed in isolation. It must be integrated with first-aid training to create a comprehensive community health education program. By addressing both prevention and first-aid simultaneously, we can improve overall emergency preparedness and reduce the severity of accidents.

### **Limitations**

This study has some limitations that should be considered. The small sample size limits the ability to generalize, and the qualitative approach makes the results less extendable. Additionally, potential respondent bias and limitations in time and resources may affect the results. Future research is recommended to use larger samples, combine qualitative and quantitative methods, and explore different cultural contexts to achieve more comprehensive and representative results.

### **CONCLUSION**

The conclusion of this study indicates that the knowledge and experience of neighborhood unit (RW) heads in Cempaka Putih Tengah Subdistrict regarding first-aid in accidents are still limited. The interview results revealed three main themes that illustrate the primary challenges faced by the community in handling accidents: 1) limited public knowledge about effective first-aid actions in accident situations; 2) lack of practical experience in providing first-aid, leading to panic and confusion; and 3) limited understanding of accident prevention, which increases the risk of injury in the surrounding environment.

Most of the RW heads interviewed demonstrated limited understanding of proper first-aid steps in accident situations. This lack of knowledge hinders their preparedness to provide the necessary assistance during emergencies. This highlights the need for more comprehensive training and intensive outreach programs on first-aid to enhance public understanding.

Research findings indicate that although some RW heads had attended first-aid training, they still felt panicked and confused when required to provide first-aid in accident situations. This suggests a gap between the knowledge gained in training and its application in real-life situations. Therefore, more realistic and practical training is needed, including accident simulations that allow the community to experience emergency situations firsthand.

This study also revealed that many RW heads had limited understanding of accident prevention measures, such as the use of Personal Protective Equipment (PPE) and awareness of hazardous environmental conditions. This lack of knowledge about accident prevention contributes to the high risk of injury in the surrounding environment. Therefore, there is a need for increased education on accident prevention and the proper use of PPE, as well as strengthening community awareness of the risk factors in their surroundings.

Overall, the findings of this study emphasize that better and more structured first-aid and accident prevention training are essential to improve the community's preparedness for accidents. More in-depth knowledge and better practical experience can help boost the community's confidence and prepare them to provide the appropriate assistance in emergency situations. Therefore, it is recommended to develop health policies that focus more on improving public health literacy through more comprehensive and accessible training for all members of society.

### Recommendations

To address the limited knowledge and experience of neighborhood unit (RW) heads in providing effective first-aid, this study recommends strategic actions to enhance community preparedness through comprehensive training and awareness campaigns. Collaborative efforts between government agencies, healthcare institutions, and local organizations are essential to ensure increased access to first-aid training, particularly in communities with limited healthcare resources. These training programs should be designed to meet the specific needs of the community and delivered in a clear, accessible manner.

Moreover, training sessions should focus on practical, hands-on skills, integrating realistic simulations that help participants manage the panic and confusion often experienced during emergencies. These practical exercises should emphasize essential first-aid steps, such as ensuring the safety of the environment, calling emergency services, performing CPR, controlling bleeding, and positioning unconscious victims. By focusing on simple yet critical actions, participants will be better equipped to respond confidently and effectively when accidents occur.

A community-based approach is highly recommended, where local leaders, including RW heads, are actively involved in both the planning and implementation of the training programs. This approach fosters a sense of shared responsibility, enabling the community to be more self-reliant and capable of responding to emergencies. Local leaders can also play a key role in encouraging others to participate and in sustaining the training efforts.

To ensure long-term effectiveness, public health policies should support the continuous development of first-aid training programs, offering opportunities for regular updates to knowledge and skills in line with current standards. This ongoing education will enhance community members'

readiness and confidence in managing emergencies and will contribute to the reduction of injury-related complications. Furthermore, integrating accident prevention education, particularly regarding the use of Personal Protective Equipment (PPE) and awareness of environmental risks, will further strengthen the community's ability to prevent and respond to accidents.

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All authors certified fulfillment of ICMJE authorship criteria.

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## REFERENCES

1. Singletary EM, Zideman DA, Bendall JC, Berry DC, Borra V, Carlson JN, et al. 2020, International Consensus on First-aid Science With Treatment Recommendations. Vol 142.; 2020 Oct 21. doi:10.1161/CIR.0000000000000897. PMID: 33084394
2. Alsulami M. First-Aid Knowledge and Attitudes of Schoolteachers in Saudi Arabia: A Systematic Review. *Risk Manag Healthc Policy*. 2023;16(March):769-777. doi:10.2147/RMHP.S395534. PMID: 37144144. PMCID: PMC10153447
3. Pellegrino JL, Krob JL, Orkin A. First-aid Education for Opioid Overdose Poisoning: Scoping Review. *Cureus*. 2021 Jan;13(1):1-8. doi:10.7759/cureus.12454. PMID: 33552772. PMCID: PMC7854333
4. Widiastuti NKP, Adiputra IMS. Overview of Students' Level of Knowledge about First-aid in Accidents in High School. *J Akad Baiturrahim Jambi*. 2022 Mar;30;11(1):23-31. doi:10.36565/jab.v11i1.409
5. Central Statistics Agency of DKI Jakarta. JTraffic Accident Victims by Type of Motorized Vehicle in DKI Jakarta Province. Central Statistics Agency. summary of research findings [Internet]. 2022 [cited 2024 Sept]. Available from: <https://jakarta.bps.go.id/id/statistics-table/2/NTkzIzI=/jumlah-korban-kecelakaan-lalu-lintas-menurut-jenis-kendaraan-bermotor-di-provinsi-dki-jakarta.html>
6. Ministry of Health of the Republic of Indonesia. Key Results of Regional Health Research 2018 [Internet]. 2018 [cited April, 1, 2023]. Available from: [https://kesmas.kemkes.go.id/assets/uploa%0Ad/dir\\_519d41d8cd98f00/files/Hasil%02riskesdas-2018\\_127](https://kesmas.kemkes.go.id/assets/uploa%0Ad/dir_519d41d8cd98f00/files/Hasil%02riskesdas-2018_127) [https://kesmas.kemkes.go.id/assets/uploa%0Ad/dir\\_519d41d8cd98f00/files/Hasil%02riskesdas-2018\\_127](https://kesmas.kemkes.go.id/assets/uploa%0Ad/dir_519d41d8cd98f00/files/Hasil%02riskesdas-2018_127)
7. Najihah, Ramli R. Health Education First-aid in Accidents Increase Knowledge of PMR Members on Fracture Management. *Forikes Sound Health Research Journal*. 2019 Apr;10(2):151-154. doi:http://dx.doi.org/10.33846/sf10216

8. Yarali M, Parvizi A, Ghorbani Vajargah P, Tamimi P, Mollaei A, Karkhah S, et al. A systematic review of health care workers' knowledge and related factors towards burn first-aid. *Int Wound J*. 2023 Oct;20(8):3338-3348. doi:10.1111/iwj.14162. PMID: 36950866. PMCID: PMC10502269
9. Asdiwinata IN, Yundari A. IDH, Widnyana IPA. Overview of the level of community knowledge on first-aid in traffic accidents in Banjar Buagan, Pemecutan Kelod Village. *Bali Med J*. 2019 Jun;6(1):58-70. doi:10.36376/bmj.v6i1.67
10. Farzan R, Parvizi A, Takasi P, Mollaei A, Karkhah S, Firooz M, et al. Caregivers' knowledge with burned children and related factors towards burn first-aid: A systematic review. *Int Wound J*. 2023 Sep;20(7):2887-2897. doi:10.1111/iwj.14130. PMID: 36859701. PMCID: PMC10410335
11. Lu JL, Herbosa TJ, Lu SFD. Determinants of prolonged length of stay among patients with road traffic injury at the philippine general hospital: A retrospective cohort study. *Acta Med Philipp*. 2021 Sep;55(6):693-702. doi:10.47895/AMP.V55I6.3241
12. Herlinawati H, Azhari T. The relationship of knowledge and attitudes with first-aid behavior in accidents in employees of Building E Thread Section. *Health Journal*. 2020 March;9(1):1040-1047. doi:10.38165/jk.v9i1.72
13. Creswell JW. Third Edition Qualitative, Quantitative, and Mixed-Methods Research. California: Sage Publication, Inc; 2009. pp.485-485.
14. Creswell JW. Research Qualitative, Quantitative, Adn Mixed Methods Approaches Design. 4 Edition. California. Sage Publication, Inc; 2014. pp. 239-240
15. Pradono J, Soerachman R, Kusumawardani N, Kasnodihardjo. Research Guide and Quality Research Reporting. first ed. Jakarta: Publishing Institute of Health Research and Development Agency; 2018. pp. 9-5.
16. Wirihana L, Welch A, Williamson M, Christensen M, Bakon S, Craft J. Using Colaizzi's method of data analysis to explore the experiences of nurse academics teaching on satellite campuses. *Nurse Res*. 2018 March;25(4):30-34. doi:10.7748/nr.2018.e1516. PMID: 29546965
17. Guba E. G., Lincoln Y. Fourth generation evaluation. Newbury Park, CA: Sage. 1989
18. Golfrooz S, Nikbakht H-A, Fahim Yegane SA, LaGholami GS, Shojaie Y, Ahmad HS, et al. Effective factors of severity of traffic accident traumas based on the Haddon matrix: a systematic review and meta-analysis. *Ann Med Surg*. 2024 Feb;86(3):1622-1630. doi:10.1097/ms9.0000000000001792. PMID: 38463059. PMCID: PMC10923285
19. Yari Y, Ramba H La, Yesayas F. The Relationship between Knowledge Level and Attitude with Flood Disaster Preparedness in Health Students in DKI Jakarta. *J Health Holist*. 2021 Jul;5(2):52-62. doi:10.33377/jkh.v5i2.100
20. Suastrawan PGP, Saputra IK, Yanti NPED. The relationship between first-aid knowledge and motivation to help victims of traffic accidents in the community on Street Prof. Dr. Ida Bagus Mantra, Bali. *Coping Community Publ Nurs*. 2021 Apr;9(2):236-242. doi:10.24843/coping.2021.v09.i02.p15
21. Kase FR, Prastiwi S, Sutriningsih A. The Relationship between the Knowledge of the General Public and the Initial Action of Traffic Accident Emergency in Tlogomas Village, Lowokwaru District, Malang. *Nurs News (Meriden)*. 2018;3(1):662-674. doi:10.33366/nn.v3i1.838
22. Saqer AO. Knowledge and attitude towards first-aid: A cross-sectional study in the United Arab Emirates. *J Anesth Clin Res*. 2018 Jan;09(1):1-7. doi:10.4172/2155-6148-c2-006. PMID: 30697519. PMCID: PMC6335884
23. Pellegrino JL, Charlton NP, Carlson JN, Flores GE, Goolsby CA, Hoover AV, et al. 2020 American Heart Association and American Red Cross Focused Update for First-aid. *Circulation*. 2020 Oct;142(17):E287-E303. doi:10.1161/CIR.0000000000000900. PMID: 33084370
24. Bogdan IV, Gurylina MV, Chistyakova DP. Knowledge and practical experience of the population in providing first-aid. 2020 Oct; 64(5):253-257. doi:https://doi.org/10.46563/0044-197X-2020-64-5-253-257
25. Cook A, Keyte R. Mental Health First-aid Experiences : A Qualitative Investigation into the Emotional Impact of Mental Health First-aid Responsibilities. Published online 2022:1-17. doi:https://doi.org/10.21203/rs.3.rs-1393314/v1
26. Lyashenko SA, Fesenko AM, Kis VN, Yurchenko V V. The Organization Of First-aid In Disasters: The World Experience. *Int Soc Trauma Stress Stud*. 2021 Oct;2(20):100-105. doi:https://doi.org/10.5281/zenodo.7263684. PMID: 36300605. PMCID: PMC10624106
27. Wang L, Norman I, Xiao T, Li Y, Leamy M. Psychological first-aid training: A scoping review of its application, outcomes and implementation. *Int J Environ Res Public Health*. 2021 Apr;18(9):1-23. doi:10.3390/ijerph18094594. PMID: 33926108. PMCID: PMC8123604
28. Tse E, Plakitsi K, Voulgaris S, Alexiou GA. The Role of a First-aid Training Program for Young Children: A Systematic Review. *Children*. 2023 Feb;10(3):1-11. doi:10.3390/children10030431. PMID: 36979990. PMCID: PMC10047314
29. Dyreborg J, Lipscomb HJ, Nielsen K, Törner M, Rasmussen K, Frydendall KB, et al. Safety interventions for the prevention of accidents at work: A systematic review. *Campbell Syst Rev*. 2022 Jun;18(2):1-187. doi:10.1002/cl2.1234. PMID: 36911341. PMCID: PMC9159701