

KNOWLEDGE OF BURN FIRST AID AMONG
CAREGIVERS IN PEDIATRIC CLINIC OF HOSPITAL
UNIVERSITI SAINS MALAYSIA

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by

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**PENGETAHUAN PERTOLONGAN CEMAS MELECUR DALAM
KALANGAN PENJAGA DI KLINIK PEDIATRIK, HOSPITAL
UNIVERSITI SAINS MALAYSIA**

ABSTRAK

Pertolongan cemas melecure adalah langkah yang sangat penting dalam proses penyembuhan luka melecure. Jika tiada rawatan awal, mangsa kebakaran akan mendapat banyak masalah dan komplikasi sepanjang pemulihan mereka seperti mengalami jangkitan yang teruk. Objektif kajian ini adalah untuk menentukan pengetahuan tentang pertolongan cemas melecure dalam kalangan penjaga di Klinik Pediatrik, Hospital Universiti Sains Malaysia (USM). Satu kajian deskriptif keratan rentas digunakan dalam kajian ini. Teknik persampelan bertujuan digunakan untuk memilih penjaga di Klinik Pediatrik. Seramai 233 penjaga telah menjawab soal selidik yang disediakan secara bersemuka dan majoritinya ialah wanita iaitu 177 orang dan lelaki adalah 56 orang. Data yang dikumpulkan dianalisis dengan menggunakan statistik deskriptif (min, frekuensi dan peratusan), statistik inferensi (chi-square dan independent t-test). Seramai 120 peserta dikategorikan dalam tahap pengetahuan yang baik dan 113 peserta mempunyai tahap pengetahuan yang lemah. Terdapat perbezaan yang signifikan antara data demografik dengan pengetahuan pertolongan cemas melecure bagi latihan pertolongan cemas melecure ($p= 0.000$), tetapi tiada perbezaan yang signifikan antara tahap pengetahuan dengan jantina ($p= 0.797$) atau dengan sejarah kecederaan melecure ($p= 0.097$). Walau bagaimanapun, tiada hubungan penting antara umur ($p= 0.055$), tahap pendidikan ($p= 0.368$) atau sumber maklumat dengan tahap pengetahuan tentang pertolongan cemas melecure. Tahap pengetahuan tentang pertolongan cemas melecure adalah tinggi tetapi hasil daripada kajian ini mendapati bahawa perlunya peningkatan lebih lanjut untuk

memaksimumkan tahap pengetahuan mengenai pertolongan cemas melecur dalam kalangan penjaga. Kesimpulannya, pendidikan untuk penjaga, termasuk demonstrasi pertolongan cemas melecur diperlukan bagi mengelakkan kecederaan selanjutnya atau sebarang komplikasi yang serius daripada berlaku.

**KNOWLEDGE OF BURN FIRST AID AMONG CAREGIVERS IN
PEDIATRIC CLINIC OF HOSPITAL UNIVERSITI SAINS
MALAYSIA**

ABSTRACT

Burn first aid is a very important step in the process of cooling the burn. If no initial treatment, burn victims might face many problems and complications throughout their recovery such as develop severe infection. The objective of this study is to determine the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital Universiti Sains Malaysia (USM). A cross-sectional descriptive study was used in this study. Purposive sampling technique was used to select the caregivers in Pediatric Clinic. A total of 233 caregivers comprising female was the majority of the respondents which was 177 and male was only 56 were answered the questionnaire provided. The collected data were analysed by using descriptive statistics (mean, frequency, and percentage) and inferential statistics (chi-square and independent t-test). A total of 120 respondents were categorised in good level of knowledge and 113 respondents had poor level of knowledge. There was a significant difference between demographic data with the knowledge of burn first aid for the burn first aid training ($p= 0.000$), but no significant difference between the level of knowledge with gender ($p= 0.797$) or previous burn injury ($p= 0.097$). While there no significant association between age ($p= 0.055$), educational level ($p= 0.368$), or source of information with the knowledge of burn first aid. The knowledge level of burn first aid was high, but finding from this study shows the need for further enhancement to maximise the knowledge regarding burn first aid among caregivers. In conclusion, education for caregivers, including demonstrations regarding first aid of burn is needed to prevent further injury or any serious complication.

CHAPTER 1 INTRODUCTION

1.1 Introduction

This study was conducted to determine the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital Universiti Sains Malaysia (USM). Chapter 1 starts with the background study of burn first aid. Then, it is followed by a problem statement, research questions, objectives, and hypotheses of the study. Lastly, the operational definition of key terms and the significance of the study are described.

1.2 Background of Study

In Malaysia, healthcare services have been adjusted and improved in providing care for burn patients in the past year, especially in severe burns. The latest burn management has combined with specialized intensive care treatment has saved the life of young victims involved with major burn injuries (Tan Chor Lip, Tan, Thomas, Imran, & Azmah Tuan Mat, 2019). Most burn injuries are highly preventable and do not cause fatal. Burn may occur at home, school, workplace, and at anywhere and it often occurs among children at home. Children has higher risk to involve with burn because they still not understand the seriousness complication of burn when burn occurs until they experienced it. Caregivers especially parents should have high level of awareness and knowledge of burn first aid because no initial action taken when burn occurs will lead to severity of burns and requires prolong hospitalization (Hudspith & Rayyat, 2004). Burn can be described as tissue damage caused by heat, chemicals, electricity, sunlight, or nuclear radiation. The common causes of burn injuries are due to hot liquid or steam, building fires, flammable liquids, and gases. Next, the deep, location and the large area of burn may determine the severity of burns (National Institute of General Medical Sciences,

2020). In Malaysia, statistics have shown that child has suffered fire and burn injuries and 54% of respondents in a survey have reported incidents of burns and scalds at home (MOH, 2017). In Hospital USM, the percentage of patient involved with scalded burns is higher compared to other types of burn (Burn Unit of USM, 2021).

There are four types of burns which are first-degree burns, second-degree burns, third-degree burns, and fourth-degree burns. Usually, first-degree and most second-degree burns can heal by doing self-treatment at home while third-degree burns and above can be life-threatening and require immediate treatment and specialized medical care. For minor burns such as first and second-degree burns that cover less than 10% of body exposure to burn, it can be managed with proper first aid of burn at home such as running cool water over the burn area (Cleveland Clinic, 2021). For the major burns, it is required immediate treatment at an emergency department and applying the first aid technique just before the treatment to prevent from burns spreading into a large area. To reduce the health burden in healthcare settings, burn first aid management (BFAM) is one of the initial treatments that help victims to preserve life, reduce consequences and burden to wound injury before it goes deeper or sometimes causes death (Markenson et al., 2010).

Moreover, first aid is a very important step in the process of cooling the burn. A study shows that patients with no initial treatment are faced many problems and complications throughout their recovery such as develop severe infection (Lam, & Dung, 2008). People must have an appropriate level of knowledge of first aid management towards burn injury to save themselves and to help others because burn injury may occur everywhere especially at home and the workplace. There is still have gap between knowledge and practice of burn first aid among caregivers over the countries. A study has shown that 82.6% of participants have good knowledge regarding burn (AlQahtani,

Alanazi, Alshalhoub, Alfarhood, & Ahmed, 2019). Next, other study has shown that 66.7% of participants have practice correct first aid of burn (Qtait, Alekel, & Asfour, 2019).

The knowledge and the correct practice of burn first aid among caregivers will develop strategies for them to perform first aid of burn when it happens (Nhu Lam, Li, Tuan, & Xuan Huong, 2017). Besides, the improper practice of burn first aid, such as direct applying ice over the burn area may cause damage to the skin, hence causing cold injury. Therefore, it may leave scars and cause severe infections that lead to amputation or sepsis (Cleveland Clinic, 2021).

1.3 Problem Statement

In the United States, 1.1 million people suffered burn injuries that need medical attention every year. Almost 50, 000 of these victims require hospitalization and 20, 000 suffer major burns which are 25% of their bodies covered with burn and for about 4, 500 burn victims are died (Center for Disease Control (CDC), 2015).

Burn injuries is one of the serious public health problem around the world that cause high mortality and morbidity rate especially among children (Mani, Demado, Abdul Manaf & Yellappan, 2019). In Malaysia, the frequency of children dying due to fire and burn injuries is every two weeks (MOH, 2017). Children have higher percentage involving with burn especially at home. Caregivers who responsible to deliver good care for their children should have adequate knowledge on how to respond when their children involves with burn. Many studies were reported there is still have more parents did not know the initial action on what to do when burn injury occurs at home. In Hospital USM, the number of patients admitted to ward from January to February 2021 due to burn injuries was 15 which includes young children, adult, and elderly (Unit Rekod Perubatan

Hospital USM, 2021). A study reported that more women aged 21 to 40 years involved with burn injuries and the mortality rate amongst women also high (Parray, Ashraf, Sharma, & Saraf, 2015).

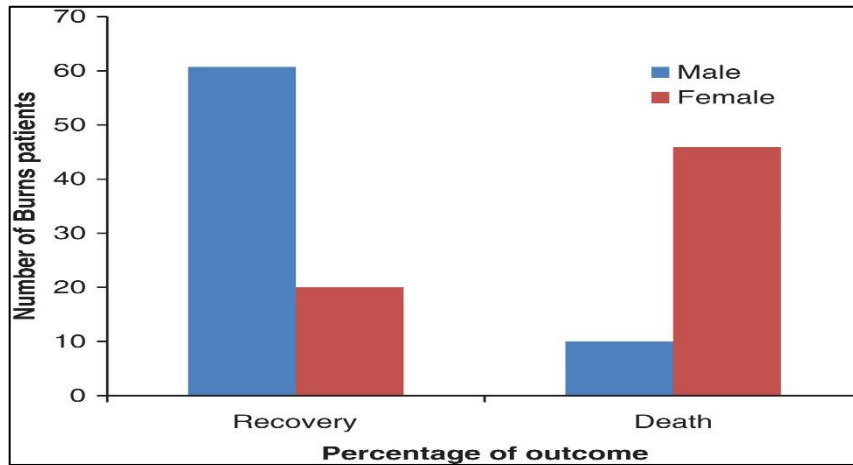


Figure 1.1: Percentage of outcome according to gender in Manipal

(Source: Honnegowda, Kumar, Udupa, & Rao, 2018)

In Malaysia, there is only a few articles have been published regarding the burn first aid knowledge and the search for previous studies related to this study is almost nonexistent and very limited. Burn is one of the common cases presenting at the emergency department and require immediate medical care for the major burns (AlQahtani, Alanazi, Alshalboub, Alfarhood, & Ahmed, 2019). First aid of burn is one of the initial actions before entering the emergency department and preventing patients from having severe burns that may require a surgical procedure and leave scarring. Other than that, there are many studies were reported people had less awareness, lack of knowledge and improper practice of first aid of burn (AlQahtani et al., 2019; Halil et al., 2020; Alatreez et al., 2021; & Qtait et al., 2019).

The study aims to determine the knowledge of burn first aid and its application among caregivers in Pediatric Clinic of Hospital USM. The purpose of the study conducted is to give awareness, improve knowledge, and information regarding the burn first aid to caregivers in the community when they participating in this study. The population used in this study is caregivers who visited and bring their children to the Pediatric Clinic because they can apply and share the knowledge of burn first aid with many people especially with their family members. From the previous study, the good knowledge of burn first aid can be difference according to the age group, gender, educational level, source of information, burn first aid training, and previous burn injury. Hence, these factors need further investigations and study to prove the association of the selected factors with the knowledge level of burn first aid among caregivers.

1.4 Research Questions

The research questions for this study are:

- i. What is the mean score of knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital Universiti Sains Malaysia (Hospital USM)?
- ii. Is there any differences of burn first aid knowledge between gender, burn first aid training, and previous burn injury among caregivers in Pediatric Clinic of Hospital USM?
- iii. Is there any association between age, educational level, and source of information with the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM?

1.5 Research Objective

Research objectives are divided into general and specific objectives.

1.5.1 General Objective

The general objective of this study is to determine the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM.

1.5.2 Specific Objectives

The specific objectives of this study are:

- i. To determine the mean score of knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM.
- ii. To determine the differences of burn first aid knowledge between gender, burn first aid training, and previous burn injury among caregivers in Pediatric Clinic of Hospital USM.
- iii. To determine the association between age, educational level, and source of information with the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM.

1.6 Research Hypotheses

The null hypothesis (H₀) and alternative hypothesis (H_A) for this study are:

1. H₀: There is no significant differences of burn first aid knowledge between gender, burn first aid training, and previous burn injury among caregivers in Pediatric Clinic of Hospital USM.

HA: There is significant differences of burn first aid knowledge between gender, burn first aid training, and previous burn injury among caregivers in Pediatric Clinic of Hospital USM.

2. Ho: There is no significant association between age, educational level, and source of information with the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM.

HA: There is a significant association between age, educational level, and source of information with the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM.

1.7 Conceptual and Operational Terms

Table 1.1: Operational Definition and Conceptual Definition

TERMS	CONCEPTUAL DEFINITION	OPERATIONAL DEFINITION
Knowledge	Knowledge defined as “awareness, understanding, or information that has been obtained by experience or study, and that is either in a person’s mind or posses by people generally” (Cambridge Academic Content Dictionary, 2021)	In this study, knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM will be assessed through questions regarding degree of burn and burn first aid application in the questionnaire.

Table 1.1, continued

TERMS	CONCEPTUAL DEFINITION	OPERATIONAL DEFINITION
Burn First Aid	<p>Burn defined as “an injury to the skin or other organic tissue primarily caused by heat or due to radiation, radioactivity, electricity, friction, or contact with chemicals” (World Health Organization, 2018).</p> <p>First aid refers to “interventions and assessments that are performed by any by-stander (of the victim) in the absence of medical tools or equipment” (Al-Batanony et al., 2021).</p>	<p>In this study, the knowledge of burn first aid and its application will be measured in section B which consist of knowledge of degree of burn and burn first application in the questionnaire.</p>
Caregivers	<p>Caregiver defined as “someone responsible for looking after another person such as a person who has a disability; or is ill, or is very young”</p> <p>(COBUILD Advanced English Dictionary, 2021)</p>	<p>In this study, a caregiver refers to people aged 18 years and above that bring children to the Pediatric Clinic of Hospital USM which includes parents, childcare providers, nannies, grandparents, and family friends (Monterey County Children’s Council, 2020).</p>

1.8 Significance of the Study

This study was carried out to determine the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM. Finding from this research can help in updating knowledge and proper practice of burn first aid among caregivers. Other than that, this research is to determine whether there is any association between selected factors with the knowledge of burn first aid. This study also give benefit in improving the knowledge of burn first aid among caregivers in the community. Therefore, it can reduce morbidity and mortality rate among people who are involved with burn injury. Furthermore, the information and outcomes from this study can be used as a baseline and reference for future research. The researcher can refer to and modify the strength and weaknesses of this study for a better finding of knowledge of burn first aid in their target population. Hence, it can make people aware of the importance of practicing the correct first aid of burn because the wrong technique can cause the severity of burns, disruption of immune systems, and thus result in the death of tissue on a person's body (Caputo & Van Der Walde LLP, 2012).

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter is reviewing the current literature related to knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital Universiti Sains Malaysia (Hospital USM). Lastly, this chapter describes the conceptual framework chosen for this study.

2.2 Overview and Management of Burn

2.2.1 Overview of Burn

Burn injury is categorized as a trauma condition that can affect anyone, at anytime and anywhere that associated with morbidity and mortality rate. Jeschke, Van Baar, & Logsetty (2020) mentioned that friction, cold, heat, radiation, chemical or electrical sources are the cause of burn injuries, but the common cause of burn injuries are due to heat from hot liquid, solids or fire. Every year, many people involve with burn injuries and require them to undergo surgeries and take years of rehabilitation (Goordarzi, Reisi-Dehkordi, & Zargham-Boroujeni, 2014). Usually, severe burn injuries may affect physical, psychological, mental status, economic, social consequences and even death of victims. Next, burn injury may occur at home, school, workplace, and other places, but the percentage of children involves with burn is often occur at home.

There are four degree of burn which are first-degree, second-degree, third-degree and fourth-degree of burn (Simko, Ohrtman, Carrougher, & Gibran, 2018). For the first-degree burns, it involve the top layer of skin and usually sunburn is one of the example for this degree. The signs that may appears are redness of the skin, painful to touch and mild swelling of the skin. If the burn victims is infant or elderly, they need to seek emergency treatment. Next, the second-degree of burn is also known as partial thickness

burns involve epidermis and dermis layer of the skin. The signs appears are deep reddening of the skin, pain, and blisters. For the third degree burns, it affects deeper tissues that may be destroyed. The signs for this degree of burns are skin loss, often painless, skin may appear charred. For the last degree of burn, it destroy the skin and fat, muscle and sometimes until bone. It is estimated number of 180000 deaths are caused by burns every year in Saudi Arabi (Alqahtani, Alanazi, Alshalhoub, Alfarhood and Ahmed, 2019).

2.2.2 Management of burn

There are two difference ways to treat the burn. For the major burn, it require emergency treatment while for a minor burn case is very rare to have an immediate medical care (Mayo Clinic, 2018). The burn first aid is one of the immediate action or initial treatment for burn injury. Proper practice of first aid in the first few minutes after it occurs can make a difference in the severity of the burn between one victim with another victims (Centers for Disease Control and Prevention (CDC), 2021). The first step is burn victims should stop, drop and roll to smother flames. The smother means to extinguish or deaden the fire which it can reduces the oxygen from the equation and this step is applicable for solid fuel fires (Elite Fire, 2021). The next step is victims need to remove all burned clothing and cut or tear around burned area if the clothes attaches with affected skin. Then, victims should remove all the accessory such as jewellery, belt, and tight clothing in burned area and around the neck. The accessory and tight clothing may cause burned area to swell immediately and harm to the victims. These three steps is applicable for both types of burn.

Furthermore, for victims that involve with major burn, they need to cool and cover the burn area with a clean cloth until arrived at emergency department. Hudspith & Rayatt (2004) states the effective time to perform active cooling is within 20 minutes of the injury to remove the heat and the used of iced water was not allowed because it can cause burn progression. Next, they are not allowed to dip the larger severe burns in water because it can cause serious loss of body heat that known as hypothermia, especially in children. Other than that, burn victims should elevate the burned area above heart level and monitor signs and symptoms of shock such as fainting and having shallow breathing. Moi, Haugsmyr, & Heisterkamp (2016) mentioned that major burns may have long lasting impact on the quality of life which are having persisting problems related to permanent scarring, contractures, weakness, thermoregulation, itching, body image disturbance and psychosocial wellbeing.

For a minor burn injury, the appropriate action need to do is place the burned area under running cool water or apply a cool wet compress until the pain is reduce. The advantages of cooling burn with water are it can reduces pain, cleanses wound, minimize oedema and stop the burning process (Hudspith et al., 2004). Besides, victims should not break the fluid-filled blisters that appears on their skin because it is important to protect against infection. Kowalske (2011) recommended victims can apply an antibiotic ointment to the blister that already breaks and stop using the ointment if a rash appears immediately. Next, victims should apply a lotion that contains aloe vera or a moisturizer once a burn cooled. This lotion will helps in maintaining moisture of the skin. Then, victims need to cover the burn with sterile gauze bandage and do not tighten the bandage in order to prevent from putting pressure on burned skin and to protects the blister. After that, victims are allowed to take an over-the-counter pain reliever such as ibuprofen or acetaminophen when needed or in uncontrolled pain. A study done by by AlQahtani et

al. (2019) were mentioned 35.8% burn victims who received no water first aid had higher complication rate compared with those who received water first aid is 18.4%. Lastly, patient with severe burn injury will develop systemic complications such as multisystem organ dysfunction (MODS) (Gauglitz & Williams, 2020).

2.3 Concept of Knowledge

Knowledge is categorized as a complex procedure of remembering, relating, or judging a thought or abstract phenomenon that known as intellectual abilities (Nguyen, Katarzyniak, & Sobecki., 2011). Next, knowledge requires through learning process and these may be formal or informal instruction, personal experience and experiential sharing. There are four types of knowledge which are factual, conceptual, procedural and metacognitive knowledge (Krathwohl, 2002). Factual knowledge is defined as terminologies, specific details and basic elements within any domain. It can be learned through exposure, repetition, and commitment to memory. Next, conceptual framework is that the interrelationships and functions among details and elements make up a larger structure. It is important to identify and understand our own knowledge strengths and areas of need in order to meet personal and organization's goals. Other than that, the adequate knowledge will help in increasing the awareness level among people in community.

2.4 Knowledge of Burn First Aid among Caregivers

2.4.1 Knowledge of Burn First Aid

Knowledge of burn first aid is one of the most elements that influence the outcome of a burn. Regarding to the knowledge, Qtait, Alekel and Asfour (2019) had done the study among relatives in Palestine. They were reported 51.3% out of 150 relatives had general knowledge regarding first aid and 32% out of the sample size is a school teacher. Next, a study done by Nhu Lam, Li, Tuan, and Xuan Huong (2017) among high risk groups in Vietnam were reported 86.1 % out of 674 workers knew to use cool fresh water to reduce the temperature of the burn wound. For about 29.5% of participants get score over 75% which it can conclude as they had a good knowledge and 13.9% had score less than 50% which indicates poor level of knowledge. According to this study, participants who works in oil industry have highest level of knowledge which 74.36% followed by electrical industry group which 67.58% and fire fighters was 56%.

Moreover, a study done by Ramli, Prawoto, Riasa, Saputro and Mas'ud (2021) in rural area of Kulon Progo, Indonesia were reported 66% out of 115 participants which 24 people had poor knowledge, 31% had fair knowledge and only three percent which is two participant have good knowledge regarding burn first aid. In this study, 82% of the participants had misperception regarding burn that wounds will heal by itself. Furthermore, a study of burn first aid among Majmaah community in Saudi Arabia by Alqahtani et al. (2019) were reported 82.6% out of 390 participants knew that the first step of the burn first aid is to stop, drop, and roll when the clothes catch fire. The majority of the participants which are 73.8% were well educated and had a bachelor's degree. Other than that, 41% out of the samples knew that all burn injuries must be treated at the hospital.

Regarding the study conducted by Halil, Ibrahim, Sidek Ahmad and Che Hasan (2020) among parents of under age in Kelantan, Malaysia, they were reported 6.3% out of 80 participants had good knowledge, 47.5% had moderate knowledge and 46.3% showed minimal knowledge of burn first aid. They also reported parents were lack of information on how to react when their children involves with burn injury. The last study conducted by Alatreez, Alfarhan, Ghawa, and Alhifzi (2021) in Saudi Arabia were reported 54.2% out of 764 parents knew the that first-degree burns is only shows redness of the skin and about three respondents did not know the degree of burns. The finding shows parents have inadequate knowledge and requires improvement of the knowledge regarding burn first aid to prevent from burns goes deeper when it occurs to their child.

2.5 Burn First Aid Application

A study done by Ramli et al. (2021) in Indonesia, were reported 95% out of 115 participants answered correctly where the initial step when burn occurs is removing clothing and accessories on the burn wound. About 70% of the participant run the water at burn area for one to 10 minutes, 18% for 10 to 15 minutes, one percent for 30 minutes and only four percent of participant apply water for 20 minutes. 77% of participants applied honey to the burn wound and study prove that honey can improve certain wounds compared to other home remedies. Next, a study done by Alatreez et al. (2021) were reported 56.4% of participant agree that place burn area under cool water for at least five to 15 minutes. Other than that, this study also reported 68.3% participant disagree with applying ice directly to the burned skin. It means that participant in this study is have good knowledge on practicing right first aid of burn. Regarding a study done by AlQahtani et al. (2019) only 10% of participants applying water on the burned area more than 15 minutes and 61.3% wrapped the burned area with a clean cloth. In this study, almost all the participant which 98.5% seek medical assistance.

In addition, a study done by Halil et al. (2020) were reported 7.5% of participant strongly agree that put burned area under running water for 20 minutes. The finding of this study were reported all the participants agree to remove all the accessory items that constricts before the skin is swelling. Lastly, a study done by Seow, Halim, Wan Sulaiman, Mat Saad and Mat Johar (2020) in Malaysia, were reported only five percent out of 485 patients practiced the correct first aid technique where they run the burned area under cool water for more than 20 minutes. Other than that, 6.5% of patients apply “Minyak Gamat”, 3.6% apply ointments and 0.4% apply honey, butter and cooking oil on the burned skin were reported in this study.

2.6 Knowledge of Burn First Aid and Related Factors

There are several factors that affecting knowledge of burn first aid such as age, gender, educational level, source of information, burn first aid training, and previous burn injury. A study done by Qtait et al.(2019) were reported there is significant differences between male and female in practicing proper first aid training. From this study, female have more knowledge which is 91 participants is practicing right first aid compared to male only 59 people. In this study, there is a significant differences in source of information regarding first aid with the having good knowledge in practicing correct first aid. Next, a study conducted by Fadeyabi, Ibrahim, Ugburo, Adejumo, & Buari (2015) were reported there is relationship between level of education with having knowledge and proper practice of burn first aid among patients. Wallace, O’Neill, Wood, Edgar, and Rea (2013) were reported 15% participants gave correct answers if they have attended a first aid training compared to those who had not attended any first aid training. Lastly, Nhu Lam et al. (2017) states there are significantly difference between age group with the proper practices of burn first where it shows young people have poor level of knowledge and practice regarding burn first aid. Lastly, AlQahtani et al. (2019) were

mentioned that participants who had experienced with burn injury have a better knowledge on first aid of burn compared to those who are not involved with burn injury.

2.7 Instruments

The instruments used in this study was adapted by Alatreez, Alfarhan, Ghawa, and Alhifzi in 2021. Their study was conducted among parents in Abha and Khamis Mushait, Saudi Arabia. This study was conducted because they found the knowledge level among parents toward burn in children are very rare and crucial. Next, the reserach design for this study is a cross-sectional study and they used online survey to collect data among parents in Abha and Khamis Mushait. They found out parents had low level of knowledge but had a good practice toward first aid of burn. The questionnaire was divided into two main parts which are knowledge and practice of burn first aid. For the knowledge part, they provide three questions regarding burn and 15 items regarding practice of burn first aid. The knowledge part was provided one correct answer for each question and they will get score “1” for correct answer. In addition, they were assessed the practice part with providing statement that require participant to choose whether they agree, disagree or do not know regarding burn first aid in order to determine the proper practice of burn first aid among parents at there.

Next, a similar study was conducted by AlQahtani et al. (2019) in Saudi Arabia involving 390 participant to assess the general knowledge and practices related to burn first aid. The questionnaire used in their study were divided into three parts which part 1 is for socio-demographics data, part 2 for knowledge and part 3 for practice of burn first aid. Four questions was provided in part 2 and five questions for practice part. The author determine the good level of knowledge and practice based on the higher percentage of

participant get. The total questions provided for both part is only eight and it difficult for researcher to determine the association with demographic characteristics.

Other than that, a study conducted by Halil, Ibrahim, Sidek Ahmad, & Che Hasan (2020) in Pasir Tumbuh, Kelantan, Malaysia involving 80 participant to assess the level of knowledge and practice of burn first aid. The questionnaire used in their study have divided into two part which is part 1 for socio-demographic data and part 2 for knowledge and practice of burn first aid. For the knowledge and practices, the author provides 14 items to assess both components. The measurement used in this study is 4-point Likert scale which is strongly agree, agree, disagree and strongly disagree. From the pilot study, Cronbach alpha value for this questionnaire is 0.53 which is low and not recommended. The reason why this questionnaire is not taken is because of they combine both component that make hard for researcher to differentiate which questions is suitable to assess knowledge and practice. Hence, the outcome of knowledge and practice level cannot be separated and identified.

Moreover, the researcher was adopted the questionnaire from Alatreez et al. (2021) because the main aim for the study is to assess the knowledge of burn first aid and its application. The items used for the knowledge and practice were separated hence, it is more effective to assess the knowledge and practice among population. This is important in order to identify whether people have good knowledge and practice or otherwise. Other than that, the justification for using this questionnaire is because of that study was conducted in larger population which was 764 parents are involved with different background and they able to understand the questions given. Total questions provided for both part is 18 items. In this study, the researcher used the question in practice part as knowledge of burn first aid application because it is more relevant to assess for knowledge part. Even have one similar study conducted by Halil et al. (2020)

in Kelantan, the researcher was not taken the questionnaire from them because they used mix questionnaire to assess the knowledge and practice of burn first aid thus it will make researcher difficult to interpret the result for each components.

2.8 Theoretical and Conceptual Framework of the Study

The researcher used Health Belief Model (HBM) for this study to explain the knowledge of burn first aid among caregivers. This model was created by Irwin M. Rosenstock that concerned about health decision-making and preventive measure of health behavior (Rosenstock, 1974). Then, Health Belief Model will explain regarding burn first aid in response to a vulnerability to one's health such as to protect oneself from getting an infection and serious complication due to burn injuries in the future. Next, these perceptions are influenced by several modifying factors. In this study, the modifying factors are refers to the age, gender, educational level, source of information, burn first aid training, and previous burn injury.

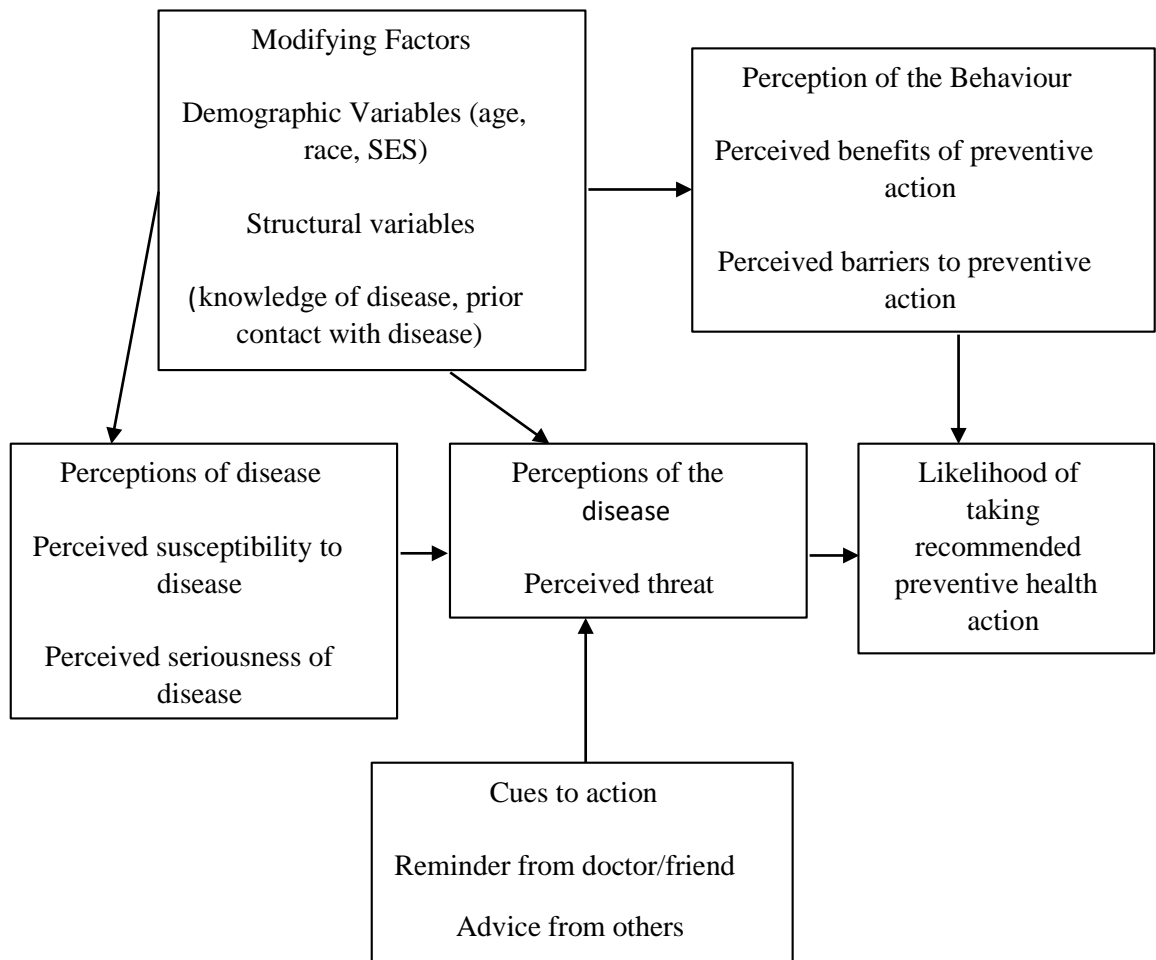


Figure 2.1: The Health Belief Model proposed by Rosenstock in 1974

In this study, the researcher wants to determine the knowledge of burn first aid among caregivers including its related factor such as age, gender, educational level, source of information, burn first aid training, and previous burn injury.

For the outcome of this study, the good knowledge of burn first aid for each participant will be determined when they get higher mean score of overall knowledge. It is according to their selected answer and thought during answering the survey form regarding first aid of burn. Figure 2.2 below shows a conceptual framework that is applicable to determine knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM.

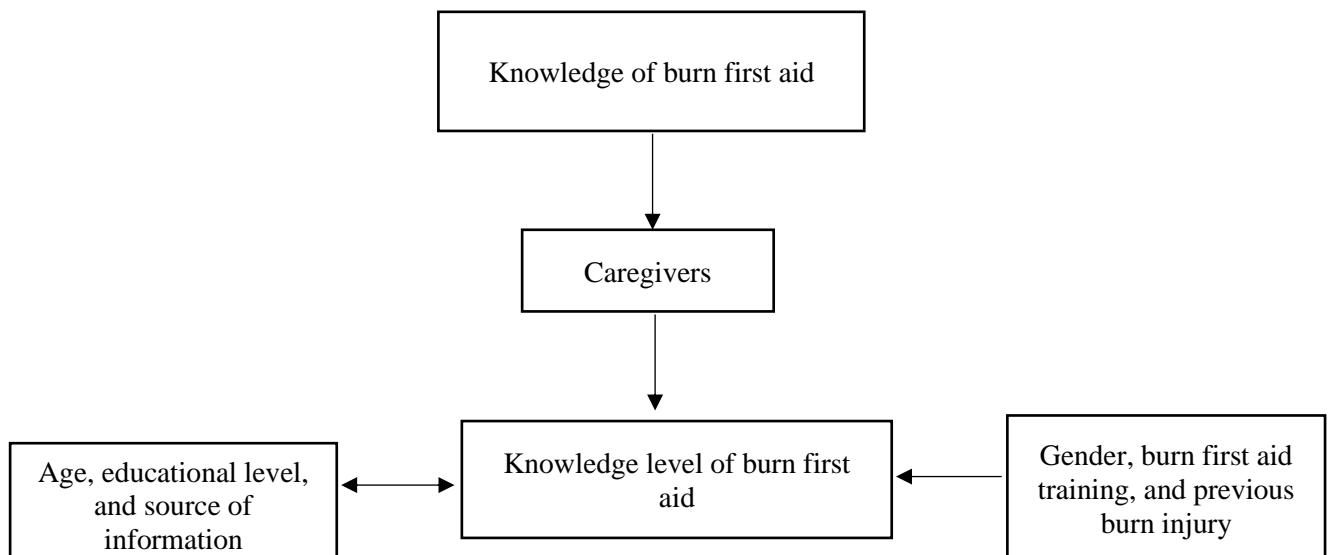


Figure 2.2 Conceptual framework to study the knowledge of burn first aid among caregivers in Pediatric Clinic of Hospital USM adapted from Rosenstock’s Health Belief Model (HBM) in 1974

CHAPTER 3 METHODOLOGY AND METHODS

3.1 Introduction

In this chapter, the information of methodology used such as research design, population and setting of the study, sampling method, sample size determination, variables, instrumentation, ethical consideration, and the data collection plan including statistical analyses will be mentioned and discussed.

3.2 Research Design

This study will apply a descriptive, cross-sectional study design involving caregivers in Pediatric Clinic of Hospital Universiti Sains Malaysia (USM) to determine their knowledge level regarding burn first aid and its related factor. Thomas (2020) mentioned a cross-sectional study as a method of collecting data from many different individuals at a single point in time. The justification for using this study design is because it is convenient to gather initial data and identify the association of some variable used.

3.3 Research Location

This study has been conducted at Hospital USM which is one of the biggest referral hospitals on the East Coast of Peninsular Malaysia and has specialists that will decide which treatment is best and suitable for patients. Hospital USM is a teaching hospital that allows student to clinical training and conducting research studies. Furthermore, hospital USM has a special department to treat burn patients known as Unit Rawatan Kebakaran (URK) which was established in May 2000 and fully operates since September 2004. In total, Hospital USM has 15 clinics including a Pediatric Clinic known as Klinik Pakar Pediatrik, where the research study conducted.

The appointment system at the Pediatric clinic is according to the type of illness experienced by the patient. For example, Thursday is particular for patients with nephrology problems. The justification for choosing a Pediatric Clinic as the study location is because it covered a large population in Kelantan who brings their children for further follow-up at the clinic also we noticed that burn injuries often occur among children and Hospital USM is one of the referral hospitals for burn cases (Reconstructive Sciences Unit, 2021).

3.4 Research Duration

The research study will be conducted from October 2021 until July 2022.

3.5 Research Population

The target population of this study is caregivers who bring their child to the Pediatric Clinic of Hospital USM, including Malay, Chinese, Indian, Siamese, and others that fulfill inclusion criteria. There were 1577 patients had visit the Pediatric Clinic of Hospital USM from September 2021 to October 2021. Therefore, they have a high chance to participate in this study.

3.6 Subject Criteria

3.6.1 Inclusion Criteria

The inclusion criteria for this study are as followed:

- Adult aged 18 years or above (AlQahtani et al., 2019).
- Able to read and write in the Malay language (Halil et al., 2020).

3.6.2 Exclusion Criteria

The exclusion criteria for this study is as followed:

- An individual who works in healthcare settings.

A study shows healthcare workers have more knowledge and practice proper first aid compared to non-healthcare workers (Mortada, Malatani, & Aljaaly, 2020). Hence, these criteria have been excluded to avoid bias toward others in this study.

3.7 Sampling Plan

The sampling plan is a detailed outline of which measurements will be taken at what times, on which material, in what manner, and by whom. Other than that, sampling is defined as a process of selecting entities from a population of interest based on population chosen (Wiley & Sons, 2018).

3.7.1 Sampling Size Estimation

The number of pediatric patients who visited the Pediatric Clinic for the past 2 months is as follows, 726 (September) and 851 (October) patients. The total number of patients who visited the Pediatric Clinic was 1577 patients. As we know, pediatric patients came to the clinic with caregivers since most of them were still underage. American Academy of Pediatrics (2015) defined pediatrics as the specialty of medical science concerned with the physical, mental, and social well-being of children from birth to young adulthood. In this study, pediatrics' caregivers who met inclusion criteria will be taken as a study sample. The sample size of this study is determined by using the Raosoft sample size calculation software (Appendix G).