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Knowledge and Attitude regarding Burn First Aid among Female Campus Students in King Abdul-Aziz University

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Abstract
Background:
Burns can cause a serious traumatic injury to the skin. The immediate burn first aid can prevent complication. Studies showed poor knowledge regarding burn first aid also there are few studies about the knowledge of burn first aid in Saudi Arabia.
Purpose:
The study aim was to assess the attitude and knowledge regarding burn first aid among female campus students in King Abdul-Aziz University.
Method:
Descriptive cross-sectional study with an online survey toward female campus students at KAU with sample size 184 students.
Result:
A total of 184 participants responded to the survey. A 145 respondents (78.8 %) had previous background knowledge on burn first aid. 145 (78.8 %) has had experienced a burn injury .107 (58.2 %) they removed accessories and clothing from the injury area. A 61 (33.2 %) they covered the burned area with a clean cloth and 99 (53.8 %) participants applied water. Cold water was used by 87 (47.3 %) as compared to warm water. In regard water duration, 62 (33.7 %) participants applied water for less than 5 minute, 25 (13.6 %) participants applied water between 5–10 minute, 6 (3.3 %) participants applied for 10–15 minute, and 3 (1.6 %) participants applied for more than 15 minute. 90 (48.9 %) participants sought medical assistance.
Conclusions:
The majority of respondents had a previous knowledge about burn first aid, however participants had poor attitude regarding the application. Our recommend to target larger number of sample size.
Keywords: *Burn, First Aid, Knowledge.*

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I. Introduction

There are many risk factors that can harm the human, one of this harms is burn. Worldwide, 195,000 cases of death caused by burn. According to Othman and Kendrick (2010) meta-Analysis, the incidence of burns in the Middle East around 112 to 518 per 100,000 per year; with mortality rate between 0.2 to 5.6 per 100,000/ year, and the homes were reported as the most common location of burn injuries with range of 72 to 94 %. Burns are critically traumatic injuries to the skin issues that consequence from hazard exposure to different burn sources such as chemical, radiation, electrical, thermal and friction (Jones, F. (2018). Burns could be caused by thermal sources (e.g. Iron, hot water, hot coals, oil, and flame), chemical sources (e.g. Acids that are found in household and in industrial cleansers, electrical sources (current or lightning strikes), radiation sources (e.g. Sunburns, electromagnetic radiation and x-ray) and friction sources (e.g. Skin Scraped off by road, carpets or gym floor surfaces). Burn injuries classified according to the depth of burn into: first, second, third, and fourth degree. That first degree affect the first layer of skin. Second degree divided into two types: the first type injures the first and second layer of skin (superficial partial-thickness burns) and the second type injures deeper skin layers (deep partial-thickness burns). Third degree injures all the skin layers and tissues; it is also called (full-thickness burns).The fourth degree extended to muscles, ligaments, tendons, nerves, blood vessels and bones (Jones, F. (2018). A first aid must be done immediately after injury to prevent and reduce any further complication of burning injury. First aid is the urgent caring provided to an injured individual until specialist assistant arrives if necessary (AGREE II, 2016). The positive effect of the burn first aid is by immediate removing of clothes and jewelries that at the area of injury, application of running cold water with 2-15 C for 20 min and applying sterile dressing on the wound. The delaying of application of cold water or applied it less than 20 min will lessen the analgesic effect of immediate intervention. There are many traditional remedies used among people, which considered as a misconception, these include using of ice, eggs, toothpaste and mud. Although, using of ice might

be the first choice among public; however, it increases the risk of hypothermia. As for other remedies; they increase the risk of infection. This study is very important because burns have major physical and psychological complication, even death.

Previous studies results shown there is poor knowledge regarding immediate burn interventions; however, there are just a few studies about the knowledge of first aid for burn especially in Saudi Arabia.

According to Eldosoky (2012), in the study used an interview questionnaire sheet with sample of 1450. In home-related injuries the highest percentage of injuries were burns (34.8%). The result showed that 26.6% of the studied mothers were not familiar with the term of first aid. A (56.1%) participants reported that the source of the previous knowledge about first aid from television (TV) and/or radio, 13.8% from the participants gained their knowledge from training courses, 12.0% participants had the knowledge from nurses or doctors, 12.0% from textbooks, 4.1% from the educational courses and 2% from other sources such as relatives and friends. In addition, another study on previous background knowledge on burn first aid showed that the main source was from an special course (44.4 %), followed by the internet websites (43.3 %), then pamphlets (43.0 %), TV (35.5 %) , newspapers (10.4 %), official websites (5.3 %), and finally from a radio (3.1 %) (Kattan ,2016). Also Harvey (2010), the results of the study showed the commonest sources of information on burns first aid were a textbook (41.7%), and the website internet (32.9%), health authorities (9.8%), friends and family (4.8%) were less commonly reported, and just under (3%) reported having no source of information; (13.6%) reported attended a first aid course. Regarding to Kattan (2016), in the study they used electronic survey, the total sample size was 2758. Result showed (72.1 %) removed accessories and clothing from the injured area, water was applied by (63.9 %); (88.6 %) applied cold water and (5.8 %) applied it for more than 15 min. Covering the area was implemented by (33.9 %) and (63.5 %) seek medical help. In regards the traditional remedies, (77.4 %) implemented traditional remedies to treat burn area. Honey and toothpaste were the most common applications among traditional remedies. As well as Harvey (2010), study outcomes were (82%) of participants reported that relive the burn by applying cool or cold water. Generally, (9.4%) of participants reported that they knew that applying water to the burned area for 20 minutes would cool it. Few participants remove clothing and keep the patient warm until assistance arrive. Other techniques were suggested by (10.5%) of respondents use ice pack, burn cream, cold compresses and aloe vera. Of all respondents, (41.5%) reported that they did not know for how long cold running water should be applied. In other hand Olaitan (2004), a sample of 147 clients represent that (51.0%) had records exhibit that they used more than one substances such as engine oil, cassava, raw eggs, gentian violet, and kerosene to their body immediately after their burn. A 75 clients applied raw eggs as an essential burn aid treatment and it was the most common substance (13 patients).

Purpose:

The aim of our study is to assess the attitude and knowledge of the female campus students at KAU toward Burn First Aid and to identify the weakness of burn first aid among students to develop an educational program regarding this problem in the future. The rresearch question: What is the level of knowledge among KAU female campus students regarding the first aid for burn?.

II. Methodology

A. Design

Descriptive cross-sectional study with a survey will design using a questionnaire. The descriptive study will use to assess the attitude and knowledge of the female campus students in King Abdul-Aziz university regard to first aid in burn injuries as well as traditional remedies. Descriptive study it will be easy access to collect data, and allows for gathering in-depth information that may be either quantitative (surveys) as we will do in this study or qualitative (observations or case studies) in nature (DerSarkissian, 2020). Descriptive studies result in rich data that is collected in large amounts. Also, descriptive research may be a precursor to future research because it can be helpful in identifying variables that can be tested. Participants may not be truthful. Also the results are not repeatable and typically the study cannot be replicated (DerSarkissian, 2020). The researcher used descriptive design because we need to collect data based on knowledge regarding with burn first aid and because it's less time consuming and we want to measure the knowledge only one time. The study period to collect the data were for one month April 2018.

B. Sampling

We will use non-probability sampling (convenience sampling method) because it is easy to reach the sample and to collect the data for a specific period. Based on the other studies the sample size it will be 200.

C. Measurement tool

We asked permission to use questionnaire from another study related to this study. The tool that we will use it, it's Burn first aid questionnaire. It is consisting of 33 multiple choice questions. The survey was translated

into Arabic language to make it easier for the participants to read and understand. The questionnaire included information on demographic variables and retrospective questions on what first aid measures respondents' use.

The web-based questionnaire was developed and designed by original researcher, and the researcher was mentioned he was developing the questionnaire and tested by the pilot study to examine the validity and reality.

D. Procedure

The researcher obtained IRB approval from King Abdul-Aziz university nursing faculty. The potential risk of this study would be minimal, but the questions might upset the participants. The inclusion criteria, consists of the female students at King Abdul-Aziz University and exclusion female medical students. There was no direct benefit to the participants who participated in this study but would benefit others in the future. Also, there were no incentives to participate or to withdraw from the study at any time. It was very clear that no any penalty if they withdraw or if they refuse this study as it was a voluntary to participate in this study.

A. Describing variables

The study variables of our study include burn first aid, knowledge and attitude, where burn first aid represents the dependent variable and knowledge and attitude represent the independent variable.

B. Statistical test used

Our research question was (what is the level of knowledge among KAU female campus students regarding the first aid for burn?). Therefore, the statistical analysis will be used for this question is descriptive; to identify the mean, mode and median by using the SPSS version 16.0.

III. Result

At the end of the assembling and assessment period of data, 215 participants responded to the survey, but we excluded 31 individuals responded because they did not meet our criteria. Regarding the distribution of respondents, the demographics of screen population (86.4 %) of respondents ages were between 19 to 25 and were females. The 80.4 % of them had a bachelor's degree which is considered well educated.

Nearly most of the sample (82.6%) had an income less than 10,000 Saudi Riyals per month (Table 1). Among the 184 individuals' respondents, 145 (78.8 %) has had experienced a burn injury to close family members or themselves. These respondents were directed to additional questions regarding the first aid measures implemented in their experiences (Table 2).

According to the burn injury, 107 (58.2 %) they removed clothing and accessories from the area of injury, 61 (33.2 %) they covered the area with a clean cloth and water applied by 99 (53.8 %). Among those who applied water, cold water was applied by 87 (47.3 %). In regarding the duration of water application, 62 (33.7 %) participants applied water for 5 min or less, 25 (13.6 %) participants applied between 5–10 min, 6 (3.3 %) participants applied for 10–15 min and 3 (1.6 %) participants applied for more than 15 min, while one responder did not specify the duration of application. Only 90 (48.9 %) sought medical help.

According to previous background knowledge on burn first aid was present in 145 respondents (78.8 %). The main source of knowledge was an internet in 104 (35.9 %), followed by the television in 56 (19.3 %), then official course 40 (13.8 %), in pamphlet 36 (12.4 %), specialized website in 9 (3.1 %), and finally, from a radio and newspaper both have the same number of responders in 3 (1 %) (table 3).

According to the knowledge and preference and predilection toward the application of home remedies to burn wounds was also assessed (Fig. 1). Among the 184 people respondents, honey was used to treat burns by 42.2 %, then toothpaste was chosen by 25.5 %, while tomato paste was chosen by 6.1 % of participants.

IV. Discussion

This cross-sectional study aimed to assess respondent's knowledge and attitude, using an online survey called (Burns awareness survey), which was created by Kattan and collegues (2016). Before collecting the data, we were expecting that the knowledge about burn first aid among King Abdul-Aziz University female campus students would be low according to results showed by previous studies (Olaitan et al., 2004). In this study just 42.7% which is less than half of participants who have received information about burn first aid. However, after analyzing the data, the results showed the opposite of our expectations; where we found that 78.8% of our participants have received previous information about burn first aid. We were also expecting that the majority of participants would not know how to start the burn first aid, which is by removing the clothes and accessories from the injured area, though; the results surprisingly revealed that more than half of respondents 58.2% commented that they removed clothes and accessories firstly. Despite the high result of knowledge, there were 33.7% who applied water to the injured area for less than 5 minutes, which is not even close to the appropriate duration (15-20 minutes).

By performing statistical analysis of the data, the results showed that a large number of respondents 78.8% have experienced a burn injury, which is supporting to the percentage of participants in 56.2%(Olaitan et

al., 2004). Also, our study showed that the same percentage of respondents 78.8% have received previous information on burn first aid, which is a very good outcome. However, in the study found that less than half of respondents have received previous information 42.7% (Olaitan et al., 2004). In our study, we found that the main source of information was the Internet with 35.9%, whereas in their main source was the official course in 44.4% (Harveyet et al., 2011). While in it was the first aid book 41.7% (Olaitan et al., 2004). On the other hand, the highest percentage of information source found (Eldosoky, 2012), was TV by 56.1%. As for the lowest sources of information used in the studies, we found that there was close percentage in radio use between our study 1% and 3% (Olaitan et al., 2004). While in the other two studies, the least source was family and relatives, 4.8% (Harveyet et al., 2011) and 2% (Eldosoky, 2012).

One of the steps of burn first aid that we analyzed as a data, is taking off clothes and accessories of victim's burned area. The analysis of our study, revealed that 58.2% of respondents have removed clothes of the burned area. On the other hand, found much higher percentage for this kind of data than our results by 72.1% (Olaitan et al., 2004).. Nevertheless, a study showed the lowest percentage in this kind of result by 0.4% (Harveyet et al., 2011).

According to water application, 53.8% of respondents motioned that they applied water on the injured area. In contrast, had a higher percentage by 63.9% (Olaitan et al., 2004). While in there are 82% of respondents applied cold water (Harveyet et al., 2011).. In addition, regarding to the application of cold water on the injured area, our results showed that 47.3% have applied cold water, whereas 88.6% of their respondents applied cold water (Olaitan et al., 2004). Beside that, we analyzed the duration of applying water, the appropriate duration of water application is 15 – 20 minutes. We found in our study 1.6%, 9.4% and 5.8%(Harveyet et al., 2011). Despite the appropriate duration of water application, there were respondents who applied water for less than 5 minutes, which had the highest percentage in both our study ; 33.7%, 59.4% sequentially (Olaitan et al., 2004).

There are many traditional remedies used for burn among people, which can affect either positively or negatively on the injury's process of healing. The two highest remedies used among respondents honey and toothpaste; in our study: honey 42.2% and toothpaste 25.5%; honey 69.9% and toothpaste 53.7% (Olaitan et al., 2004). There are many other remedies used including: ice packs, burn cream, cold compressors and aloe vera, with 10.5% divided on each one of them (Harveyet et al., 2011). Also in the two highest remedies used among their respondents are raw egg 27.7% and gentian violet 15.6% (Olaitan et al., 2004). Our results share similarity with study's findings about covering the wound with clean clothes by 33.2% and 33.9% sequentially (Kattan et al.,(2016). There are a large percentage of respondents who were seeking medical assistance for burn, in our study 48.9% and a higher result by 63.5%(Olaitan et al., 2004).

After all, the most results that were supporting our study, are the results of only that the level of knowledge result were contradicting with our result (Olaitan et al., 2004). While the other studies' results, were either supporting or opposing some of our results, not completely supporting or opposing.

Limitations: we aware that there are many sources for possible error and limitation in our research. The first one is the sample size; which is small comparing to the number of the students of KAU female campus; therefore, we cannot generalize the final findings of this study on the entire campus. The other limitation is that we used online survey; this limitation could affects on the outcomes accuracy because of two reasons: firstly, we cannot guarantee that all participants are giving the honest answers. The second reason that some questions could be misunderstood by some participants.

Recommendations: Our recommendations to the future researchers regard the topic are: targeting larger number of sample size include both genders female and male. Also interviewing participants instead of using an online survey for more accurate data collection. In addition, a larger setting is preferable.

V. Conclusion

This study represent knowledge and attitude regarding burn first aid among female campus students especially in King Abdul-Aziz University. This project undertaken to identify the level of knowledge between the female campus students at KAU. The majority of respondents had previous information about first aid, however they had poor attitude toward appropriate application of those information.

VI. Implication

Our findings could be useful for health agencies take it into their serious consideration and provides training programs about burn first aid for the general population. this finding has the important role to minimize the serious complication of burns if the responsible agencies enhancing the knowledge about immediate burn first aid. Also, we hope that our findings will be helpful for the doctors and nurses to provide a correct information about traditional home remedies that may have a side effect on the burns or maybe it is not effective and help the doctors and the nurses to provide correct and enough information about what should be applied on the burns and the appropriate practice for it.

Conflicts of interest

There are no conflicts of interests to disclose.

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TABLE 1: Demographic characteristics

NO	Demographic characteristic of respondents		
	Demographic variable	*Number*	*Percentage*
1	Age group		
	15-18 years old	17	9.2%
	19-25 years old	159	86.4%
	26-35 years old	3	1.6%
	More than 35 years old	5	2.7%
2	Gender		
	Male	0	0%
	Female	184	100%
3	Level of education		
	High school	34	18.5%
	Diploma	1	0.5%
	university degree – bachelor's	148	80.4%
	Master, PhD	1	0.5%
4	Nationality		
	Saudi	172	93.5%
	Non-Saudi	12	6.5%
5	Residence location		
	Central	4	2.2%
	Western	158	85.9%
	Northern	3	1.6%
	Southern	7	3.8%
	Eastern	12	6.5%
6	Monthly income in Saudi Riyals		
	Less than 10000	152	82.6%
	10000-20000	18	9.8%
	21000-30000	9	4.9%
	More than 30000	5	2.7%
7	Type of residence		
	Villa	67	36.4%
	Department	117	63.6%
8	With children / adolescents / teenagers (under 18)living at home		
	Yes	161	87.5%
	No	22	12%
	Missing	1	0.5%

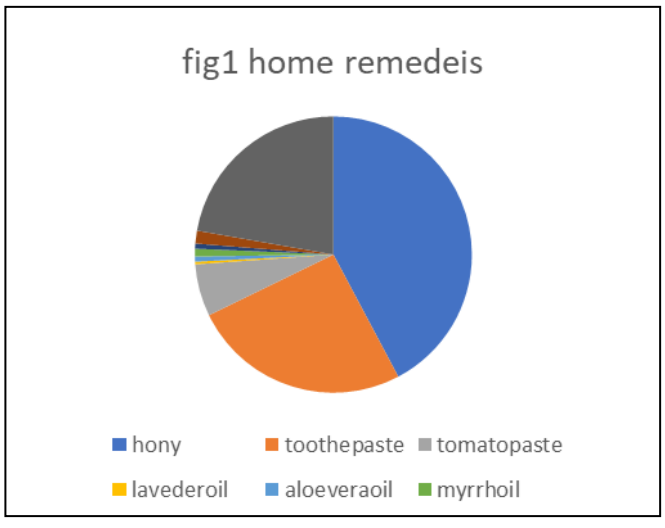
TABLE 2: Burn first aid implementation

NO	Burn first aid implementation		
	Question and choices	***Number***	***Percentage***
1	*History of exposure to burn injury (self or family member)*	*145*	*78.8%*
2	*Directed questions based on history previous exposer:*		
	Remove clothing or accessories	*107*	*58.2%*
	Seek primary medical assistance	*90*	*48.9%*
	Warp injury with clean piece of clothe	*61*	*33.2%*
	Apply water to injured area	*99*	*53.8%*
	Apply cold water to injured area	*87*	*47.3%*
3	*Apply water for:*		
	Less than 5 min	*62*	*33.7%*
	5-10 min	*25*	*13.6%*
	10-15 min	*6*	*3.3%*
	15-20 min	*3*	*1.6%*
	More than 20 min	*2*	*1.1%*
	Missing data	*1*	*0.5%*

TABLE 3: PREVIOUS BACKGROUND KNOWLEDGE

NO	Previous background knowledge		
	Question and choices	***Number***	***Percentage***
1	*Previous information on burn first aid*	*145*	*78.8 %*
2	*Sources of information*		
	Internet	*104*	*35.9%*
	Television	*56*	*19.3%*
	Official course	*40*	*13.8%*
	pamphlet	*36*	*12.4%*
	Specialized website	*9*	*3.1%*
	Radio	*3*	*1%*
	Newspaper	*3*	*1%*

Fig.1Home remedies



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