Assessment of Public Knowledge and Attitudes Towards First Aid in the Al Qassim Region, Saudi Arabia: A Cross-Sectional Study

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KEYWORDS

First Aid Knowledge, Emergency Medical Services, Pre-hospital Care, Saudi Society, Al Qassim Region

ABSTRACT

Accidents, injuries, and medical emergencies can occur unpredictably, with a significant proportion of fatalities in pre-hospital situations resulting from car accidents. Shockingly, about 39% of these fatalities could have been prevented with improved pre-hospital care. This study aimed to assess attitudes and knowledge regarding first aid among 408 individuals through a survey. Participants were surveyed on the importance of first aid learning, advising others to take first aid courses, fear of emergency situations, previous course attendance, and knowledge of specific first aid procedures. Results showed a strong consensus on the importance of first aid training, but many expressed fear of emergencies hindering their aid efforts. Barriers to course attendance included lack of time, unwillingness, and course unavailability. Participants showed varying knowledge levels, correctly identifying the Red Crescent Authority's emergency number but showing discrepancies in appropriate first aid actions for scenarios like car accidents and controlling bleeding. These findings underscore the importance of promoting first aid education and addressing barriers to course attendance. Tailored approaches may be necessary to address specific fears and improve knowledge of first aid procedures, ensuring that individuals are better equipped to respond effectively in emergency situations. By enhancing first aid training and addressing barriers, we can potentially reduce the number of preventable fatalities in pre-hospital settings, improving overall outcomes for individuals in need of emergency care.

1. Introduction

First aid knowledge and attitudes play a pivotal role in determining the immediate response to accidents, injuries, and medical emergencies, potentially influencing the outcomes of these critical situations. The ability of bystanders to provide timely and effective first aid can be the difference between life and death, making it imperative to assess the level of public knowledge and attitudes towards first aid in various communities. This study embarks on an investigation into the public's awareness and disposition towards first aid within the Al Qassim region, Saudi Arabia, shedding light on an essential aspect of community health and safety. Accidents are an unfortunate reality of life, striking without warning and often necessitating immediate medical attention. In many instances, the initial response provided by bystanders or first responders is crucial in stabilizing victims until professional medical help arrives. Recent statistics have indicated that a significant proportion of deaths in pre-hospital care situations result from injuries sustained in accidents, particularly car accidents [1]. This alarming trend underscores the importance of adequate first aid knowledge and prompt intervention in mitigating the severity of injuries and enhancing the chances of survival.

It is even more disconcerting that a substantial portion of these pre-hospital deaths could potentially be prevented through better pre-hospital care. Research has indicated that approximately 39% of fatalities resulting from accidents in such settings could be avoided with improved first aid responses [2]. This statistic underscores the significance of enhancing the public's knowledge and attitudes towards first aid, as better-trained bystanders can make a substantial difference in the outcomes of these incidents. One avenue to improve first aid responses is through comprehensive training programs aimed at the community. Empowering individuals with the necessary skills and knowledge to respond effectively to accidents and emergencies is a proactive approach towards reducing morbidity and mortality rates. Such training programs can encompass basic first aid skills, cardiopulmonary resuscitation (CPR), and the use of automated external defibrillators (AEDs), among other life-saving techniques [3]. This study seeks to

explore the readiness of the Al Qassim region's population in Saudi Arabia to engage in such training and their receptiveness to adopting these life-saving skills.

While studies examining first aid knowledge and attitudes among specific groups such as school children, parents, and teachers are not uncommon, there is a notable dearth of research evaluating the broader population's familiarity with and attitudes towards first aid in Saudi Arabia, particularly within the Al Qassim region. Consequently, this study is motivated by the need to bridge this research gap and provide valuable insights into the current state of first aid awareness and readiness in the local population [4,5,6,7].

This cross-sectional study aims to contribute valuable data on the level of first aid knowledge and attitudes within the Alqassim region, thereby informing future initiatives and interventions aimed at enhancing community preparedness for emergencies. By understanding the existing baseline of knowledge and attitudes towards first aid, policymakers, healthcare providers, and educators can develop targeted strategies to improve public awareness and response, ultimately reducing the burden of pre-hospital mortality and morbidity in the region.

2. Methodology

Study design

A cross-sectional study was conducted among Saudi citizens, Al Qassim region, Saudi Arabia, between October 2023 and January 2024. Ethical approval was obtained from the Committee of Research Ethics, Institutional Review Board, Qassim university, Saudi Arabia (Approval No. 23-60-19 dated 19.10.2023). The data collection involved using a self-reported online questionnaire. Non-probability sampling technique was employed to calculate sample size using Epi-info, Version 3 software with confidence interval 95% and 5% margin of error. The population of the Qassim according to last report of the General Authority for Statistics (GAS) is 928491. The estimated sample size was 384. It is increased 20% more, to be 460 to close the gap of non-response rate. Saudi citizens 18 years old or older were considered to be eligible for inclusion, while Individuals below the age of 18 and non-Saudi residents were excluded from the study.

In this study, a questionnaire survey was comprising three distinct sections. The first section encompassed sociodemographic information, including gender, age, social status, educational level, and occupation. The second section consisted of attitude-related questions, designed as a subjective assessment to gauge participants' attitudes toward first aid. The third section comprised multiple-choice questions, developed to objectively evaluate participants' knowledge of first aid. This section concentrated on specific scenarios related to choking, cardiopulmonary resuscitation, and bleeding. The survey was electronically distributed to participants via email and WhatsApp. Prior to conducting the original study, the survey and the study were piloted on 70 participants. Data were collected using Google Forms. Ethical considerations included participants falling within the age range of 18 to 70 years, anonymity maintained by not collecting names or ID numbers, voluntary participation with the ability to withdraw at any point, and prompt deletion of email addresses and WhatsApp numbers after data collection.

Data Analysis

All data gathered during the study were solely for research purposes and treated with the utmost confidentiality to ensure participant privacy. The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20 (IBM, USA), and results were presented as means ± standard deviations. As all variables analyzed were non-parametric, significance was tested using Chi-square tests with reported P values based on two-tailed tests. Statistical differences were considered significant at a P value less than 0.05.

3. Results and Discussion

Table 1 presents the demographic characteristics of the study participants. The total number of participants was 408, with 324 (79.4%) males and 84 (20.6%) females. Regarding age groups, the

majority of participants were in the 18-30 age group (266 participants), followed by the 31-40 age group (60 participants), the 41-50 age group (66 participants), and those above 50 years old (16 participants).

The gender distribution in our study revealed a significant disparity, with 79.4% of participants being male and only 20.6% female. This imbalance is consistent with recent research indicating that certain fields or topics may attract more participants of one gender than the other Baerg MacDonald et al. [8]. Factors such as societal norms, accessibility of study materials, and the nature of the research topic can all influence gender representation in studies [9].

The overrepresentation of males in our study sample could have implications for the generalizability of our findings, as gender can influence various aspects of behavior, perception, and cultural such as gender segregation particularly in Saudi Arabia [10]. For example, studies have shown that males and females may perceive and respond to pain differently, which could impact research outcomes related to pain management [11]. Efforts to address gender disparities in research participation are crucial for ensuring that findings are applicable to diverse populations [12]. Future studies could explore strategies to improve gender balance in participant recruitment, such as targeted outreach to underrepresented groups or providing incentives that appeal to a broader audience [13]. The gender distribution in our study highlights the need for researchers to consider and address gender disparities in research participation. By doing so, we can enhance the quality and applicability of research findings across diverse populations.

The age distribution in our study showed that the majority of participants were in the 18-30 age group (65.2%), followed by the 31-40 age group (14.7%), the 41-50 age group (16.2%), and those above 50 years old (3.9%). This distribution is consistent with recent research indicating that younger individuals are often more willing to participate in studies, possibly due to factors such as greater availability and interest in research topics [14]. However, the relatively smaller representation of older age groups in our study sample could have implications for the generalizability of our findings, as age can influence various aspects of behavior, cognition, and decision-making [15].

In terms of marital status, the majority of participants were single (276 participants), while 132 participants were married. Looking at education levels, the majority of participants had a Bachelor's degree (79.4%), followed by secondary school education (14.7%), high school education (4.4%), and a Master's degree (1.5%). This distribution highlights the well-educated nature of our sample, which could impact their understanding of the research topic and their ability to provide informed responses [16]. However, the lack of participants with primary school education or doctorate degrees in our sample could limit the generalizability of our findings to these populations.

Regarding occupation, the majority of participants were students (47.1%), followed by those in government jobs (35.3%), private jobs (8.8%), business (1.5%), and those not currently working (7.4%). This distribution reflects the diverse occupational backgrounds of our sample, which is important for understanding how different professions may influence perspectives, experiences, and responses to the research topic [17]. However, the unequal distribution across occupations could impact the study's findings, as individuals in different professions may have varying levels of exposure or interest in the research topic.

These demographic characteristics provide a comprehensive overview of the study participants, showing a varied distribution across gender, age, marital status, education level, and occupation. The proportion of male participants was approximately four times higher than that of female participants. This significant difference in gender distribution could impact the study findings, as the experiences, perspectives, and behaviors of males and females may differ. It's important to

consider gender-specific factors when interpreting the results and generalizing them to the population.

Table 1. Demographic characteristics of study participants

Variable	Sub Group	Male	Female	Total
Number of Participants	-	324 (79.4%)	84 (20.6%)	408 (100%)
Age Group (Years)	18-30	218 (53.4%)	48 (11.8%)	266 (65.2%)

	31-40	42 (10.3%)	18 (4.4%)	60 (14.7%)
	41-50	48 (11.8%)	18 (4.4%)	66 (16.2%)
	Above 50	16 (3.9%)	0	16 (3.9%)
Marital Status	Single	228 (55.9%)	48 (11.8%)	276 (67.6%)
	Married	96 (23.5%)	36 (8.8%)	132 (32.4%)
Education Level	Primary School	0	0	0
	Secondary School	60 (14.7%)	0	60 (14.7%)
	High School	6 (1.7%)	12 (2.9%)	18 (5.1%)
	Bachelor	252 (61.8%)	72 (17.6%)	324 (79.4%)
	Master	6 (1.7%)	0	6 (1.7)
	Doctorate	0	0	0
Occupation	Student	150 (36.8%)	42 (10.3%)	192 (47.1%)
	Government Job	126 (30.9%)	18 (5.1%)	144 (35.3%)
	Private Job	36 (8.8%)	0	36 (8.8%)
	Business	0	6 (1.7%)	6 (1.7%)
	Not Working	12 (2.9%)	18 (5.1%)	30 (7.4%)

Table 2 presents the participants' responses regarding various aspects of first aid approach. The majority of both male and female participants strongly agreed that first aid learning and training are important (male: 222, female: 72). This result indicates a positive attitude towards the significance of first aid education among the participants, which aligns with previous studies highlighting the importance of first aid knowledge and training in improving outcomes in emergency situations [18].

Regarding advising others to take a first aid course, a similar trend was observed, with a majority of participants, particularly males, strongly agreeing with the statement (male: 282, female: 84). This underscores the participants' recognition of the importance of disseminating first aid knowledge and skills within the community, which can enhance overall preparedness for emergencies [19].

Interestingly, when asked about the fear of emergency cases preventing them from performing first aid, a considerable number of participants, especially females, agreed or strongly agreed with this statement (male agree: 132, female agree: 24; male strongly agree: 42, female strongly agree: 12). This finding suggests that addressing fear and anxiety related to emergencies could be a key aspect of first aid training programs, particularly for certain demographic groups [20].

In terms of previous first aid course attendance, an equal number of male and female participants responded negatively, citing reasons such as lack of time, unwillingness, and unavailability of courses. This highlights potential barriers to first aid education that need to be addressed to encourage more individuals to undergo training [21].

Overall, the responses in Table 2 indicate a positive attitude towards first aid education and training among the participants, with some areas, such as addressing fear and overcoming barriers to course attendance, warranting further attention in future first aid initiatives and programs.

The responses reflect a generally positive attitude towards the importance of first aid training and knowledge. The high number of participants, especially males, who strongly agreed that first aid learning and training are important suggests a recognition of the value of being prepared to provide assistance in emergency situations. This aligns with existing literature emphasizing the role of first aid education in improving outcomes and saving lives in emergencies [18].

The willingness of participants, particularly males, to advise others to take a first aid course further demonstrates a sense of responsibility towards promoting first aid awareness in the community. This proactive attitude can contribute to building a more prepared and responsive society when faced with emergencies [19].

However, the responses also indicate a significant level of fear among participants, especially females, regarding emergency situations potentially preventing them from administering first aid. This highlights a crucial area for intervention in first aid training programs addressing and alleviating fear and anxiety to enable individuals to respond effectively in emergencies [20].

The equal distribution of responses among male and female participants regarding previous attendance at first aid courses and the reasons for not attending suggest that barriers to first aid education are not gender-specific but rather affect individuals across genders. Common barriers cited, such as lack of time, unwillingness, and unavailability of courses, underscore the need for more accessible and tailored approaches to first aid training to overcome these obstacles [21].

Table 2. Participants response for first aid approach

Question	Response Category	Male	Female
First aid learning and training is important	A. Strongly Agree	222 (54.4)	72 (17.6)
	B. Agree	90 (22.1%)	12 (2.9%)
	C. Not Sure	0	0
	D. Disagree	2 (0.5%)	0
	E. Strongly Disagree	0	0
We need to advise others to take first aid course	A. Strongly Agree	282 (69.1%)	84 (20.6%)
	B. Agree	42 (10.3%)	0
	C. Not Sure	0	0
	D. Disagree	0	0
	E. Strongly Disagree	0	0
Being afraid from emergency cases prevents us from doing the first aid	A. Strongly Agree	42 (10.3%)	12 (2.9%)
	B. Agree	132 (32.4%)	24 (5.9%)
	C. Not Sure	72 (17.6%)	24 5.9(%)
	D. Disagree	60 (14.7%)	12 (2.9%)
	E. Strongly Disagree	18 (1.5%)	12 (2.9%)
Did you join first aid course before?	A. Yes	162 (39.7%)	18 (4.4%)
	B. No	162 (39.7%)	66 (16.2%)
If answer is No, what is the reason of not joining first aid course?	A. I don't have time	60 (14.7%)	48 (11.8%)
	B. I'm not willing	12 (2.9%)	6 (1.5%)
	C. First courses not offered	90 (22.1%)	6 (1.5%)
	D. Training didn't reflect reality	0	0
	E. Poor course content	12 (2.9%)	6 (1.5%)
	F. Courses were offered with fees	6 (1.5%)	18 (4.4%)
In case of emergency, the call number for Red Crescent Authority is:	A. 996	42 (10.3%)	12 (2.9%)
	B. 997	240 (58.8%)	72 (17.6%)
	C. 993	12 (2.9%)	0
	D. 911	24 (5.9%)	0
The first aid the first assistant given by the first responder to the injured or ill person before the ambulance arrival.	A. Yes	300 (73.5%)	72 (17.6%)
	B. No	12 (2.9%)	12 (2.9%)
If you face a sudden car accident with casualties, your first action is:	A. Pull the casualties out from the car	48 (11.8%)	6 (1.5%)
	B. Call traffic police	6 (1.5%)	0
	C. Call emergency medical services	270 (66.2%)	78 (19.1%)
	D. Call road services	0	0
If you suddenly face a choking adult	A. Do back blows to the victim until the foreign body is removed	42 (10.3%)	0
	B. Try to do hand sweep to remove the foreign body	6 (1.5%)	0
	C. Stand behind the victim and give abdominal thrust until the foreign body is removed	258 (63.2%)	84 (20.6%)
	D. Give rescue breathing	18 (4.4%)	0
If you suddenly face an unconscious victim with breathing and pulse	A. Turn the victim on his side and call for help	252 (61.7%)	66 (16.2%)
	B. Do the cardiopulmonary resuscitation	60 (14.7%)	18 (4.4%)
	C. Give rescue breathing	6 (1.5%)	0
	D. Keep the victim lying flat on his abdomen	6 (1.5%)	0

If you suddenly face someone bleeding from his arm, the best way to control bleeding is:	A. Apply dressing without pressure to control the bleeding	78 (19.1%)	24 (5.9%)
	B. Direct pressure with elevation of the arm	222 (54.4%)	60 (14.7%)
	C. Apply any powder available in the house	6 (1.5%)	0
	D. Wait until the bleeding has stopped	18 (4.4%)	0

4. Conclusion and future scope

In conclusion, while the participants in this study exhibit positive attitudes towards first aid education and training, addressing fear and overcoming barriers to course attendance are crucial for enhancing community preparedness and response to emergencies. Future first aid initiatives should consider these factors to ensure more inclusive and effective training programs.

Acknowledgements

the authors gratefully acknowledge Qassim University, represented by the Deanship of Scientific Research, on the financial support for this research under the number (MDUC-2022-1-1-J-28694) during the academic year 1444 AH/2022 AD.

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