

Awareness of Cardiopulmonary Resuscitation (CPR) Among General Public

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Abstract

Introduction: Cardiac arrest is a common medical emergency with grave consequences. Cardiac arrest occurs when the heart stop to produce an effective pulse and fails to circulate blood throughout the body. CPR is an emergency procedure that involves the application of external chest compression and ventilation when heart and lung action stops. *Aim:* This study designed to assess the Awareness of Cardiopulmonary Resuscitation (CPR) Among General Public. *Materials and Methods:* A cross sectional study was conducted in general hospital, ministry of health, Wadi Al Dawasir, Saudi Arabia. The participants were randomly selected from the visitors of outpatient department and explained the purpose of the study and verbal consent was obtained from the individuals. Employees of the hospital and visitors below 16 were omitted from this study. Data was collected through self-administered questionnaire developed by the researcher which includes 19 questions regarding demographic data and information about CPR training and practice. The questions were asked in Arabic and English language. The data were calculated and analyzed by using SPSS Software 20.0. *Results:* A total 358 surveys distributed out of which 235 were completely filled with response rate of 65.6%. The study identified 42.1% of the participants had theoretical awareness of the signs of sudden cardiac arrest. 48.4% of them were able to properly establish the 2 elements of CPR as chest compressions and rescue breath. It is vital to concern that 86.3% participants said that they do not know how to perform CPR. Over 68.4% of them did not properly identify the location, depth and ratio of chest compressions. This shows that individuals have limited knowledge about CPR. Its worrying 77.2% of them did not answer the need of cardiopulmonary resuscitation in an unresponsive person who has airway obstruction while eating and stopped breathing and fell unconscious. 86.8% of participants have no formal training. Regarding the practice 87.4% have not performed CPR on any person. *Conclusion:* This study revealed lack of awareness of when and how to perform CPR among general public. The study featured an excellent potential for extensive public based education program among people to raise CPR awareness to save the life of people. *Recommendations:* Government and private organization and educational institution in the Wadi Al Dawasir ought to be inspired to incorporate CPR training programs and public should value the importance of CPR as life-saving skills that is important for the community.

Keywords: Awareness; Cardiopulmonary Resuscitation (CPR); General Public.

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Introduction

Cardiac arrest is a common medical emergency with grave consequences. Cardiac arrest occurs when the heart stop to produce an effective pulse and fails to circulate blood throughout the body. It is manifested by loss of consciousness and absence of pulse and blood pressure. The high mortality is associated with it can be easily prevented most of the time be some very simple maneuver and skills.

Cardiopulmonary Resuscitation (CPR) is an art of restoring life of the death or nearly dead person. Early response with initiation of care is very important and hence providing this care is being shifted from health care professionals to community members who actually witness the emergencies.

Most people think only health care professionals need to know the CPR skills properly, but in most cases no health care professionals present during the time of cardiac arrest and delay in arrival of ambulance at the scene. Early bystander initiated CPR can increase the chance of survival in pre hospital sudden cardiac arrest. General public play an important part as bystanders to save the life of the person.

CPR is an emergency procedure that involves the application of external chest compression and ventilation when heart and lung action stops.

Magnitude of the Problem

Cardiovascular diseases persist as the foremost cause of death in developed countries and are increasing in number in developing countries. Approximately 40–50% of all cardiovascular deaths happened due to sudden cardiac deaths (SCDs).¹ A life-saving measures plays an important role in sudden cardiac deaths.

The survival of patient in case of cardiac arrest depends on the application of CPR technique. Awareness regarding this technique is likely to raise the life expectancy of patients suffering from cardiac arrest.²

Cardiopulmonary resuscitation is the first assistant given to the collapsed person and little is known by the general public. So it would be worthwhile to assess the awareness about CPR and help raise awareness about sudden cardiac death. It is very essential that every responsible person who comes across an accident victim should be aware of essential help the victim may need right at the scene till the person is transferred to the hospital. Hence, this study intended to investigate the awareness of CPR among general public.

Aim

This study designed to assess the Awareness of Cardiopulmonary Resuscitation (CPR) Among General Public.

Materials and Methods

A cross-sectional study was conducted in ministry of health hospital, Wadi Al Dawasir, Saudi Arabia in the month of November 2018–January 2019 to evaluate the awareness of CPR in general public. Wadi al Dawasir is the homeland of the tribe of Al Dawasir with a total population of 1,06,152 at the 2010 census.³ The participants were randomly selected from the visitors of outpatient department and explained the purpose of the study and verbal consent was obtained from the individuals enclosed during this study. Confidentiality of the data was strictly adhered to by reassuring the attendees that no details concerning their standing are discharged and data are solely used for analysis purpose.

Data was collected through self-administered developed questionnaire which was targeted to reach at least 400 people include demographic information like gender, nationality, occupation, marital status, educational level and income. Furthermore survey was collected data on awareness of cardio-pulmonary resuscitation, training and practice of individuals in CPR skills. The questionnaire was developed by the researcher which includes 19 questions. Employees of the hospital and visitors below 16 were omitted from this study. The questions were asked in the language understood and preferred by participants (Arabic and English). The survey distributed were calculated and analyzed by using SPSS Software 20.0.

Results

There were 358 surveys was distributed out of which 235 were completely filled with response rate of 65.6%.

Table 1: Frequency and Percentage Distribution of Demographic Data of Participants: (n=235)

Variables	Category	f (%)
Gender	Male	130 (55.3)
	Female	105 (44.7)
Nationality	Saudi	210 (89.3)
	Non-Saudi	25 (10.7)
Occupation	Full time	90 (38.2)
	Part time	25 (10.6)

Variables	Category	f (%)
	Self Employed	50 (21.2)
	Unemployed	48 (20.4)
	Retired	7 (2.9)
	Student	10 (4.2)
	Other	5 (2.1)
Marital status	Married	123 (52.3)
	Single	95 (40.4)
	Widow	8 (3.4)
	Divorced	9 (3.8)
Family income in Saudi Riyal (SAR)	<1000	20 (8.5)
	1000-5000	85 (36.1)
	5000-10,000	92 (39.1)
	10,000-15,000	28 (11.9)
	>15,000	10 (4.2)

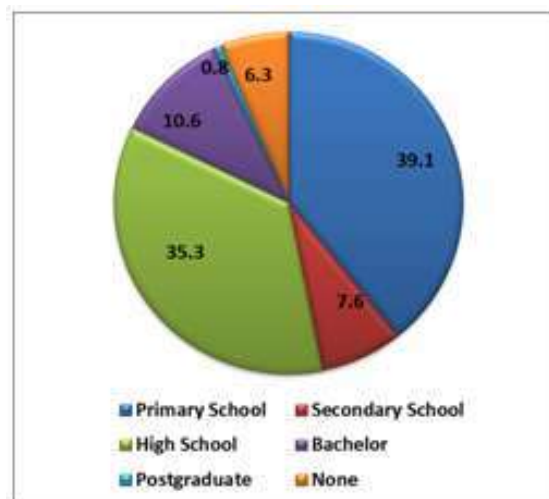


Fig 1: Percentage of level of education of participants (n=235)

Table 1: Shows the demographics of participants. The proportion of male was higher than that of female. Saudis constituted 89.3% of participants. 38.2% of participants were full time and half of the participants were married. 36.1% of participants have the income around 5000 to 10000 SAR.

The highest level of education among participants was attended primary school and high school.

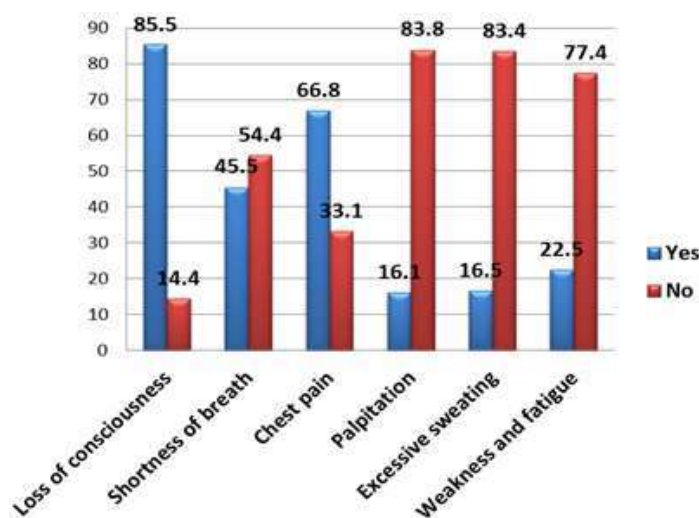


Fig. 2: Percentage distribution of awareness of sudden cardiac arrest.

As regard to assessment of awareness of sudden cardiac arrest out of the total of 1410 responses to questionnaire, 595 (42.1%) were correct and 815 (57.8%) were incorrect as shown in the Figure 2.

Table 2 shows the awareness of CPR among general public of Wadi Al Dawasir. 48.4 percent of participants identified properly that the 2 parts of cardiac resuscitation are chest compressions and rescue breathing. Participants were given a scenario to know whether cardiac resuscitation is secured, 32.3% respondents properly indicated they might perform cardiac resuscitation to an older person after a sudden cardiac arrest and collapsed

unconsciously and 34.8% would perform CPR for a person who had road traffic accident and fell unconscious. Unfortunately only 22.5% indicated that CPR would be performed in person who chokes and not breathing and fell unconscious. From this survey it is recognized that 86.3% of participants have no knowledge to perform CPR.

When participants were asked to point what they are do 1st when responding to an individual with unconsciousness, 41.2% indicated that they would call 997 and starts CPR. In road traffic accident scene 73.4% of participants unsuccessful to recognize safety is the beginning step to make

sure before attending injured person. 46.8% of participants identified correctly the location of chest compression that within the middle of the chest, while rest of them unable to find it correctly. Furthermore 18.7% correctly identified the depth of chest compressions. Furthermore, only 28.5% of respondents reported they would recommend the ration of 30 compression and 2 rescue breath while performing CPR.

Table 3 shows 26.8% of participants specified that the reading is that supply of knowledge regarding CPR and 22.1% through internet. From the total participant 13.1% has a previous training about CPR and 86.8% reported having no formal training in CPR. Of the total survey 12.3% had previous exposure to a scene and they performed CPR and 87.6% of them failed to perform cardiopulmonary resuscitation.

Table 2: Cardiopulmonary Resuscitation (CPR) Awareness:

(n=235)

CPR Awareness	f (%)
In your opinion, what does CPR means?	
Chest compression and rescue breaths	114 (48.4)
Chest compression only	68 (29)
Rescue breaths only	28 (11.9)
I don't know	25 (10.7)
In which of the following situation do you think would need immediate CPR?	
An elderly person had a sudden cardiac arrest and collapsed unconsciously	76 (32.3)
A hypertensive patient started feeling fatigue and dizzy	14 (5.9)
A person had road accident and fell unconscious	82 (34.8)
If a person chokes while eating and stopped breathing and fell unconscious	53 (22.5)
A person fell on the ground and had minor injuries	10 (4.2)
Do you know how to perform CPR?	
Yes	32 (13.6)
No	203 (86.3)
What would you do first if you saw an unconscious person?	
Call 997 and start CPR	97 (41.2)
Call nearest hospital	18 (7.6)
Call the police	27 (11.4)
Take the person to nearest hospital	23 (9.7)
Call for help	54 (22.9)
Not sure what to do	16 (6.8)
What would you do first in road traffic accidents scene and witnessed an unconscious person?	
Check airway	125 (53.1)
Start chest compression	62 (26.3)
Check the scene safety	29 (12.3)
Watch the scene and leave	19 (8.0)
What is the most important component of the CPR?	
Chest compression	27 (11.4)
Rescue breaths	23 (9.7)
Both	155 (65.9)
None	5 (2.1)
I don't know	25 (10.6)
Where would you perform chest compression?	
Right side of the chest	38 (16.1)
Middle of the chest	110 (46.8)
Lower part of the chest	68 (28.9)
I don't know	19 (8.0)
How deep should the chest compression be while performing CPR?	
One and a half inches	48 (20.4)
Two inches	44 (18.7)
Two and a half inches	39 (16.5)
Three inches	29 (12.3)
I don't know	75 (31.9)
How many chest compression and rescue breath should you do in each cycle of CPR?	
30 Compression and 2 rescue breath	67 (28.5)
10 Compression and 1 rescue breath	33 (14.0)
10 Compression and 5 rescue breath	47 (20.0)
15 Compression and 3 rescue breath	61 (25.9)
I don't know	27 (11.4)

Table 3: Cardiopulmonary Resuscitation (CPR) Training and Practice

(CPR) Training and Practice	f (%)
What is your source of information about CPR?	
Reading (newspapers, books, magazines)	63 (26.8)
School and college studies	42 (17.8)
Television	49 (20.8)
Internet	52 (22.1)
CPR awareness programs	9 (3.8)
Friends and family	6 (2.5)
Other	14 (5.9)
Have you had training in CPR?	
Yes	31 (13.1)
No	204 (86.8)
Have you performed CPR for any person?	
Yes	29 (12.3)
No	206 (87.6)

Discussion

This study made an effort to evaluate awareness of cardio-pulmonary resuscitation among general public in Wadi Al Dawasir, Saudi Arabia. The study emphasized major issues.

The study identified that only 42.1% of the participants had theoretical awareness of the signs of sudden cardiac arrest. This is far less compared to awareness level seen in developed countries.⁴ This difference can be explained due to organized and coordinated efforts from health care organizations in spreading the awareness about medical emergencies and bystander CPR in developed countries.⁵ Survey found that only 48.4% of participants were able to properly establish the 2 elements of CPR as chest compressions and rescue breath. This result's comparatively similar to a survey conducted in Saudi Arabia that was conducted among university students within which 31% were able to establish properly the 2 elements of CPR.⁶

It is vital to concern that 86.3% participants said that they do not know how to perform CPR. Further questioning of these respondents showed that over 68.4% of them did not properly identify the location, depth and ratio of chest compressions. This shows that individuals have limited knowledge about CPR. In comparison, Oman study showed that 60% of participant did not properly identify these findings.⁷

Besides, 41.2% of the participants willing to call emergency number before starting CPR is lesser than other researches done in Saudi Arabia.⁷ This indicates that many participants from this region have limited knowledge. As compared, with Oman study 56% of respondents familiar with the emergency number to call.⁷

Furthermore, the survey participants were questioned about situation in which they perform CPR, its worrying 77.2% of them did not answer the need of cardiopulmonary resuscitation in an unresponsive person who have airway obstruction while eating and stopped breathing and fell unconscious. The study was done in London where respondents were asked about what they going to do if encountered an unresponsive person on the road, most of the respondents expressed that they would wish to observe the person while waiting for the emergency medical services other than performing basic life support⁸.

Training and practice of CPR in participants:

This study reported that 86.8% of participants have no formal training; nevertheless, this figure seems similar to the study done in Jeddah that only 28.7% of the people received the training in CPR.⁹

Regarding the practice of CPR on a person 87.4% have not performed CPR on any person. Nevertheless, it looks the potential cause behind decreased percentage of individuals willing to perform cardiopulmonary resuscitation could be that people have disturbed concerning inadequate knowledge and practical skills¹⁰ or they worried about transmission of disease in particular when giving rescue breaths.¹¹ Among the sources of information regarding CPR, 27% of participants said reading was the first followed by internet and television severally. This might be crucial ways to be thought to encourage CPR awareness in general population. In some countries broadcasting of CPR program on mass media like television has been found to show significant positive effect on the level of awareness in general population.¹² In developed countries, this problem has been solved by incorporating elements of Basic life support program in school curriculum.¹³

Conclusion and Recommendation

This study evaluated the awareness of cardiopulmonary resuscitation among general public of Wadi Al Dawasir, Saudi Arabia. This study revealed lack of awareness of when and how to perform CPR among general public. The study featured an excellent potential for extensive public based education program among people to raise CPR awareness to save the existence of people. Additionally, government and private organization and educational institution in the Wadi Al Dawasir ought to be inspired to incorporate CPR training programs and public should value the importance of CPR as life saving skills that is important for the community.

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