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Original Research Paper

The Level of Awareness of Cardiopulmonary Resuscitation and Heart Attack Symptoms in AL-Hasaa

Cardiology

KEYWORDS: - awareness, Cardiopulmonary, Heart Attack Symptoms, Alhasa

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ABSTRACT

Introduction: Coronary heart disease is considered as the biggest cause of death in Saudi Arabia. Twenty-three percent of the population dies because of (CHD) (20.877). The study's aim is to evaluate the heart symptoms and CPR knowledge of Alhassa adult's residents. Method: A cross sectional analytic and descriptive survey based study among Population in Hofuf, KSA. In October 2013, online-form questionnaires were published in the social network and the filled questionnaires were filtered to meet the selection criteria. **Results**: The mean age of the sample was 29-years, most of them were females (53, 3%) (Table1), and most of the respondents were highly educated (75, 3 %). Only (19, 7%) had CPR training courses and only (6.0%) had seen someone experiencing heart attack. The percentage of the respondents that had a relative or friend with heart disease was (43%). The respondents' knowledge about CPR was insufficient. When asked twelve questions about CPR, only (34.9%) were able to give 8 right answers or above whilst (50.7%) could only give 5 right answers or less. Our findings do not suggest any demographic differences in CPR knowledge, but they show a significant gender difference in knowledge of heart attack symptoms. **Conclusion**: Therefore, CPR outreach programs might be needed in AL-HASSA to improve the population's knowledge and confidence in performing CPR and recognizing heart attack symptoms and thus reducing CHD mortality rate.

Introduction :

Coronary heart disease, (CHD), a narrowing of the small blood vessels that supply blood and oxygen to the heart, is considered as the biggest cause of death in Saudi Arabia. Twenty-three percent of the population dies because of these diseases (20.877%).

Sudden cardiac death, which can be caused by cardiac arrest and other coronary heart diseases, is a widely common phenomenon all over the world and according to the WHO latest statistics, deaths from cardiac arrest will remain the biggest cause of death till 2030 (12.2% of the total deaths in 2004 were due to cardiac arrest). Therefore, appropriate lifesaving actions must be taken by the bystanders. For such actions to be taken, bystanders must be aware of the signs and symptoms of a heart attack such as shortness of breath, chest pain and loss of consciousness. Life-saving actions should be performed with the initiation of the chain of survival. The chain consists of four links: early access to emergency medical services (e.g. Calling 997), early initiation of basic cardiopulmonary resuscitation (CPR), which is an emergency lifesaving procedure that is done when someone's breathing or heartbeat has stopped, early defibrillation, and early advanced care.

Many studies have shown that the level of awareness of heart attack symptoms and CPR was insufficient among adults. A 7-minute survey was designed in 2000 in New York city to evaluate community awareness of early warning signs and appropriate responses to heart attack symptoms and cardiac arrest reported that out of 1880 respondents above the age 18, 36.6%(275) of males and 38.1%(431) of females were confident in recognising myocardial infarction and 40.1%(301) of males and 42.8%(483) of females had been trained to perform CPR. Also, another research was made in 2010 in Nepal. This study aimed to explore the level of knowledge and type of attitude towards BLS among medical/paramedical staffs in Kist Medical College Hospital. This study revealed that the CPR knowledge of health care professionals was insufficient and that the participants had an inadequate knowledge of BLS. Although 52% of the participants answered ≥7 of the 15 questions, only 7.4% of them could answer 75% of the questions correctly.

To strengthen knowledge of the chain of survival and to reduce deaths due to delayed responses, many CPR training centers were established in Saudi Arabia such as Saudi National Cardiopulmonary Resuscitation Committee (NCPR). Since 1984 till now NCPR has been working on dissemination of the resuscitation science throughout the kingdom of Saudi Arabia. It has worked through building up human capabilities for training the CPR courses and the accreditation of training sites (centers) at governmental and private levels.

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In order to assess the extent of spread and getting the benefits from these courses and centers among adults in Alhassa, our research is designed to measure the level of awareness of CPR among adults in Alhassa and their ability to recognize heart attack symptoms.

Objective :
To determine the ability of the adults to recognize heart attack signs and symptoms that require rapid response.

To measure the level of adults' awareness of CPR according to their previous training, and source of their information.

Method :
This study was a cross-sectional, descriptive study of a sample of the population of AL-Hassa, Saudi Arabia. The selection of this sample included villages and cities in AL-Hassa so as to ensure that sample is inclusive.

The research was conducted in accordance with national and international ethical guidelines and didn't demand the sample's names to be anonymous.

The sample was randomly chosen and included a large variety of ages (>=20), genders and educational levels. All occupations were included with the exception of health sector employees and students. From a collected sample of 300, 225(75%) are 20-35 years and 75 (25%) are>= 35 years.140 (46.7%) are male and 160(53.3%) are female. The sampling method was developed in two stages. The first stage consisted of designing a questionnaire, then distributing them. The second phase consisted of filtrating it from wrong Fillings by people contrast themselves in answers. The participation of sample in the research was voluntary and was filling the questionnaire by them.
The questionnaire was constructed based on: recent researches and suitable questions for the target population.

The questions were based on three sets. The first set of questions was about the demographic information such as age, sex, level of education and marital status. The second set of questions evaluated the adult's information by measuring their knowledge of the signs and symptoms of heart diseases whereas the last set determined their level of awareness of CPR and the sources of their knowledge.

Knowledge of the CPR procedure was classified into quartiles according to the number of questions answered correctly: first quartile (no knowledge) which is 0-1 correct answers, second quartile (considerable)which is 2-7 correct answers, third quartile (sufficient knowledge) which is 8-12 correct answers. Education was classified into three levels based on the last level stop at it of education: low (elementary school), middle (secondary school), and high (collage). The residential area was classified into three areas: villages, Al Hofuf and Al Mobaraz.

The frequencies of a friend or relative with heart disease, age and martial states were collected. By using chi-square, comparing between their knowledge about CPR and gender, residential area, educational level and age. Also, between heart attack symptoms knowledge and if there was a friend or relative with heart disease and gender.

For continuous variables, the mean difference between genders, age and if there was a friend or relative with heart disease was analyzed using a T-test for independent samples. A one-way analysis of variance (ANOVA) was used to determine differences between three or more categorized groups. The analysis of differences within each ANOVA was conducted using scheffe post hoc test. An analysis of variance (ANOVA) was used to assess the effects of an educational level and a residential area .

Results:
Out of 340 respondents 300 per met the criteria. The mean age of the selected sample (300 per) was 29 years, most of them were females (53, 3%)(Table1), and most of the respondents were highly educated (75, 3 %). Only (19, 7%) had CPR training courses and only (6.0%) had seen someone experiencing heart attack. The percentage of the respondents that had a relative or friend with heart disease was (43%).

The respondents were not highly knowledgeable about heart attack symptoms. When asked to give 1 to 3 heart attack symptoms, only 24.7 % were able to list some of the major signs of heart attack. When asked about what the first thing they should do when they suspect that someone is having a heart attack is, nearly 55% correctly responded that they would call 997.

There was no significant difference in the knowledge of heart attack symptoms between those that have a friend or relative that has a heart disease or those that do not, however, knowledge of heart attack symptoms was significantly higher among females than males(P=.002).

The respondents' knowledge of CPR was insufficient. When asked twelve major questions about CPR, only (34.9%) were able to give 8 correct answers or above whilst (50.7%) could give only 5 correct answers or less. Only 7(2.3%) scored 12 which indicates that they have the ability to perform CPR. When the respondents were asked about the reason of their lack of CPR Knowledge (80, 3%) answered as" lack of courses and difficulties in reaching them" is the main reason.

There was no significant age, gender, type of education, or residential areas difference in CPR knowledge. Also, there was no significant age or gender difference in the number of CPR training courses taken by the respondents.

Discussion:
Although the study results showed that almost all of the respondents (98%) think that knowledge about CPR is critical, only (19.7%) of the total participants had previous CPR training courses. When comparing that with another study which evaluates the awareness of heart symptoms and lifesaving actions among New York City residents, a higher percentage (41,7%) of the selected sample had been trained in CPR. Most of the respondents in our study (80.3%) attributed their insufficient knowledge of CPR to the lack of courses that teach it and the difficulties in reaching them, others (5.3%) said that they themselves do not want to be trained in CPR whereas (6%) listed other causes such as that they have busy schedules, it is too expensive to take such a course, it is not part of the compulsory subjects taught in schools or that there is a lack of awareness of CPR's importance in saving lives of heart attack/disease victims. In our study, only (24.7%) of the members in the sample were able to list some of the major signs of heart attack which represents a very low level of knowledge when compared with the very high rate of heart diseases in this area as (57.7%) of the participants stated that they have friends or relatives with cardiac problems. However, the respondents of the New York report were fairly knowledgeable about heart attack symptoms for when asked to give three common symptoms of a heart attack, two thirds responded with “chest pain and difficulty in breathing”. Calling 997 as the first action when witnessing someone with a sudden heart attack was answered by (55.3%) of our study population whilst a higher percentage of the respondents (70%) in the New York study responded with would call 991 as the immediate action when they see someone experiencing sudden heart attack.

Our study indicates that there were no significant sex, age or educational level differences in CPR training statuses. The New York report also showed no significant sex or race differences.

To evaluate theoretically the level of awareness cardiopulmonary resuscitation and heart attack symptoms among our study population, we had asked 12 major questions about CPR and the mean score of the respondents was 4.8 which may be interpreted as a low score when we measure it against the effective role of CPR in

rescuing the lives of others and modifying the fatal outcomes of a sudden heart attack. A similar study was carried out in Nepal to evaluate the knowledge of basic life support (BLS) and the attitude towards it among medical and paramedical professionals, surprisingly showed that the mean score of the participants was 6.6 when they asked them 15 self-prepared multiple choice questions (MCQs) based on 2005 European Resuscitation Council Basic Life Support Guidelines. This study has revealed that even medical staff lack adequate knowledge in CPR which being a critical issue, should be addressed promptly. Since medical professionals are expected to have sufficient knowledge on CPR so as to act correctly when it is needed, we have excluded this group of the population (doctors, nurses, medical students.....etc.). However, too many studies showed the opposite of our expectation as did the example above.

Increasing the number of people trained on CPR and teaching them to recognize the signs and symptoms of a heart attack is very important in every community especially among adults with relatives or friends with heart problems. Responsible people such as teachers and parents must be targeted by special training programs to rescue their students and children when they have needs for CPR. Training can be achieved through taking organized CPR courses or through the media which were listed as common resources of those who have information on CPR in our study population.

Conclusion:

This study has shown that most adults who are not related to health care staff have insufficient knowledge about preforming CPR and low ability to recognize heart attack symptoms. It also showed that there was a significant gender difference in CPR knowledge, but no significant difference between people that have a relative with a heart disease, or those that do not. These findings do not suggest any demographic differences in the knowledge. This survey measures the awareness of Alhssa's adult residents of cardiopulmonary resuscitation and heart attack symptoms in AL-Hasaa by the distribution of questionnaires to a sample of the population. The results of this survey can assist in improving the population's awareness of CPR and increase their ability of recognising heart attack symptoms. Therefore, CPR training centers must establish their activities in different ways and different places.

Recommendation:

Since CPR is very important in helping save someone's life from death, and our research showed the lack of knowledge regarding CPR among the population we recommend increasing awareness of this matter in the community. This can be done by several ways such as the preparing of teams of volunteers to visit schools and give lessons to students on how to perform CPR. Also, providing courses for girls in the age of marriage, such as university students, will ensure passing the information down to their future children as well as giving courses to employees, such as teachers and bank employees, that work in places with a large number of people. Targeting the population in public gathering areas like malls for a campaign could be helpful too. Finally, we believe that hospitals should pass awareness of this matter through the patients, especially people with a high risk of having cardiac arrest, and their relatives so they'd be ready for any emergencies.

Table1. Demographic characteristic of the study population

Characteristics(N=300)	N%
<35years	225 (75)
>= 35 years	75 (25)
Female	160 (53.3)
Male	140 (46.7)
College (high education)	226 (75.3)
Cardiopulmonary resuscitation trained	59 (19.7)
Residential areas	
Villages*	152 (50.7)
Al Hufuf	92 (30.7)
Al Mojarra	56 (18.7)
Source of information about CPR (N=101)**	
CPR courses	53 (52.5)
The internet	22 (21.8)
Other	26 (25.7)

Where the majority are from Al Qara 59(19.7%). **missing data 199 per.

Table2. Respondent's immediate action to take in case of suspecting MI

Variable	N%
Called 997	166 (55.3)
Left him on the floor then tried to wake him then performed CPR	83 (27.7)
Called someone for help	51(17)

Table 3. Cardiac awareness and training according to demographic variables

Variable	N (%)	CPR Knowledge*	CPR Training
		P	P
Gender			
Male	140(46.7)	.693	.111
Female	160(53.3)		
Age			
<35	225(75)	.605	.054
≥35	25(25)		
Educational level			
-elementary school =low			
-secondary school = intermediate	10(3.3)	.019	**
-collage = high			
	64(21.3)		
	226(75.3)		
Residential area			
Villages	152(50.7)	.165	**
Al Hufuf	92(30.7)		
Al Mobaraz	56(18.7)		

Table 4. Knowledge of heart symptoms according to demographic variables

Variable	N (%)	Knowledge of heart symptoms
		P
Gender		
Male	225(75)	.002
Female	25(25)	
Have a friend or relative that has heart disease.		
Yes	173(57.7)	.019
No	127(43.3)	

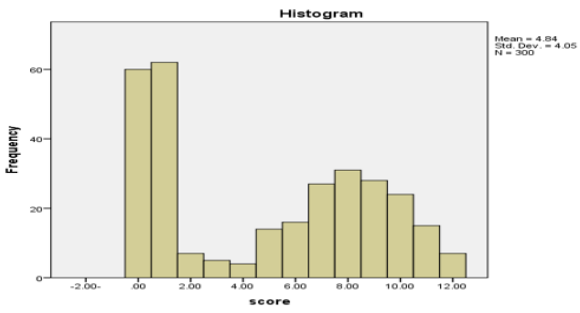

Figure: The scores of the sample in question about CPR

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