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ORIGINAL ARTICLE

Assessing the Need and Effect of Updating the Knowledge About Cardio-Pulmonary Resuscitation in Experts

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ABSTRACT

Background:

Cardiopulmonary resuscitation [CPR] is an emergency medical procedure for the victims of cardiac arrest, which should be performed by skillful individuals. This study was done to assess the level of knowledge in 35 CPR staff of a hospital which was affiliated to the Golestan University of Medical Sciences.

Materials and Method:

Simple Sampling with a before-after method was applied. Data Collection was done by a questionnaire of 43 questions about knowledge which was completed by the participants before and after teaching and after a two-month duration. Educational lectures were held by expert professors. The data were analyzed by the Wilcoxon test. P-values less than 0.01 were considered to be significant.

Results:

The mean age was 37.16 ± 6.21 years. The results showed that the level of knowledge had improved to 85% after training and to 87% after two months [P-value<0.01].

Conclusion:

It is suggested that a periodic training of practical skills should be scheduled for these staff.

Key words:

Cardio Pulmonary Resuscitation, Knowledge, CPR staff, training

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Background

Immediate response to a cardiac arrest, which is defined as Cardiopulmonary resuscitation [CPR], is a critical component of basic life support and the established first line before advanced life support. CPR as a potential life saver is associated with survival and has the potential to prevent sudden death [1]

The American Heart Association (AHA) resuscitation guidelines recommend that all hospital staff who are in contact with the patients should have regular resuscitation training. [1].

Nagashima et al concluded that 80% of the nurses did not have enough knowledge about CPR, despite passing educational programs about resuscitation [2].

Suzuki et al studied the levels of knowledge in 3305 Japanese medical students and showed that less than 20% of them could perform standard CPR [3]. Other similar studies confirmed this, too [4],[5],[6],[7].

Updating the knowledge and skills about CPR is a necessary option in the field of medicine [8].

This study was designed to assess the effect of teaching CPR skills on the level of knowledge in the CPR team of a hospital which was affiliated to the Golestan University of Medical Sciences.

Materials and Methods

This study was conducted on 35 personnel of CPR in a hospital which was affiliated to the Golestan University of Medical Sciences, 2007 in the Northeast of Iran. The before-after method was applied by simple sampling without substituting. A questionnaire which was completed by each case contained demographic data and 43 questions about theoretical and practical points in basic and advanced CPR, based on the latest version of CPR guidelines.

A scale was designed for scoring the level of the knowledge per group, ie: 965 for physicians, 710 for nurses and 655 for technicians of anaesthesia. The questionnaire was completed before the programs, immediately after the educational programs and then after 2-months. This model of assessing the effectiveness of educational programs was used in other studies too [1].

The validity of the questionnaire was evaluated by the latest version of the American Heart Association (2005) and by the post test method. A pilot study on 10 persons was done to evaluate the stability of the forms.

Results

Most of the cases which were studied were females [60%]. The mean age was 37.16 ± 6.21 years and the mean employing time was about 12.03 ± 7.25 years. Among these, 71.52% were nurses, 11.42% were physicians and 17.14% were technicians of anaesthesia.

The results showed that in the 5 items including: basic and advanced knowledge in maintaining the airway, circulation, chest compression, medicines in CPR and probable adverse effects; the level of knowledge had improved by more than 85% of basic one.

In cardiac arrest signs, it had improved from 45% to 71%, in performing DC shock it had increased from 30% to 76%, in applicants after resuscitation it had increased from 11% to 74% and in diagnosing a foetal arrhythmia it had increased from 34% to 59.5% [Table/Fig 1].

[Table/Fig 1] Mean and Standard Deviation of the knowledge level of CPR team before and after the educational programs

		No.	Mean± SD		
			Knowledge before the intervention	Knowledge after the intervention	Knowledge 2-months after the intervention
Nurses	Male	9	335.55±88.08	570±55.17	593.88±65.94
	Female	16	279.37±71.49	620.93±40.34	638.75±33.14
	Total	25	299.6±80.85	602.6±51.52	622.6±51.17
Physicians	Male	4	520±76.7	853.75±123.17	872.5±61.84
	Female	0	-	-	-
	Total	4	520±76.7	853.75±123.17	872.5±61.84
Technicians of anesthesiology	Male	1	320	590	505
	Female	5	231±77.16	544±51.76	552±79.8
	Total	6	245.83±78	551.66±49.96	544.16±73.92
Total	Male	14	387.14±117.27	652.5±151.15	667.14±149.23
	Female	21	267.85±73.95	602.61±53.7	618.09±59.42
	Total	35	315.57±109.5	622.57±105.10	637.71±57.6

Discussion

As the results showed, most of the study subjects, ie: the CPR personnel had a weak knowledge before education [43%] and it improved significantly to 85% after the lectures and to 87% 2-months later, in all items related to basic and advanced CPR. Madenc et al conducted a study about the effect of 4-hours of teaching courses on the knowledge of nursing students about CPR and showed a significant impact [1].

Other studies showed a similar significant effect of education on the knowledge of health care workers and medical or nursing personnel about CPR [9],[10],[11].

In a project done on medical doctors who were employed in the emergency department, it was reported that although 94% of them were the head of the CPR team in their department, 77.6% of them had not undergone any previous educational courses on CPR [11].

Bakhsha et al, in a previous study done on CPR nurses in hospitals which were affiliated to the Golestan Medical University [2006], concluded that their knowledge about foetal arrhythmias and therapeutic protocols were very low and that education can improve it but not at the standard level [12].

It was suggested that all nurses and physicians should have enough knowledge about CPR [13] and that the present level of knowledge is unsuitable for the personnel.

Updating this knowledge is a necessity and it should be suggested per 3-months or even per month according to the latest version of the world suggestions of CPR [14].

Limitations

The sample size was too small to be distributed to all the health care workers and more studies are

needed. Also, we had no equal numbers of male and female personnel in order to compare the skills between them.

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