EFFECT OF AN IN SERVICE TRAINING PROGRAM FOR INTENSIVE CARE NURSING STAFF IN THEIR PRACTICE - KHARTOUM STATE 2014-2017

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Abstract

Background: Cardiopulmonary resuscitation is the emergency procedure used to salvage victims of cardiac and respiratory arrest. It should be carried out with great urgency to avoid permanent brain damage or even death that would result if the victim stays from 4 to 6 minutes without oxygen.

The aim of study: To assess the effectiveness of structured teaching program on the skills of cardio pulmonary resuscitation among the nursing staff in the Khartoum Teaching, Ahmed Gasim, Omdurman Teaching, and the Khartoum North Teaching hospitals.

Methods: A quasi experimental design pretest/posttest for the same group. The study was conducted in the intensive care units in Khartoum hospitals. The study sample consisted of 100 nurses. Data was collected by a questionnaire and an observational checklist. The intervention program was in a form of lectures guidelines book. Data were analyzed using Statistical Packages for Social Sciences (SPSS).

Results: the study showed the Nurses' skills before implementation program poor (57%) good (31%) very good (12%). Nurses' skills after implementation program poor (4%) good (18%) very good (78%), (P value 0.002).

Conclusion: The study concluded that educational program had a significant impact related to the improvement of the nurses' practice post application of the program.

Key words: Training program, Practice, Nurses, Intensive Care Unit.

INTRODUCTION

Cardio pulmonary resuscitation (CPR) is a combination of mouth to mouth rescue breathing and chest compressions. It helps to keep blood and oxygen circulating to the heart and brain of a person whose heart has stopped beating. The term CPR is used to describe all aspects of basic life support, the initial establishment and/or maintenance of airway, breathing, circulation, defibrillation and related emergency care ⁽¹⁾. Cardiopulmonary resuscitation is the emergency procedure used to salvage victims of cardiac and respiratory arrest. It should be carried out with great urgency to avoid permanent brain damage or even death that would result if the victim stays from 4 to 6 minutes without oxygen ⁽²⁾. According to the World Health Organization (WHO) in 2008, 17 million people (48% of all deaths) died due to cardiovascular diseases, and mainly because of cardiac arrest ⁽³⁾. It has been documented that 33% to 40% of cardiac arrests in developed countries occur in the hospital setting, and of the arrests that occur in

the hospital setting more than 60% are first recognized by nurses (WHO, 2009). Therefore, in order to ensure patient survival, nurses who are often the first responders in resuscitation should be adequately prepared to provide effective advanced cardiac life support (ACLS) ⁽⁴⁾. Nurses must improve their skill with training and repeated practice. For this reason, nurses must learn this skill, especially in their first aid lectures during nursing education. This training must be repeated, as studies have shown that the current level of CPR knowledge and skills is insufficient, and that there is a significant decrease in knowledge and skill retention of skills after a while. The training must be repeated after a specific period of time. If the skills are not used frequently, they can be forgotten over a short amount of time. CPR skills need to be maintained and practiced regularly. Repeating the CPR training will prevent the loss of knowledge and skills. ⁽⁵⁾

Methodology

The methods begin by presenting the research design, followed by setting and duration of the study, sample, sample size, data collection technique and tools, phases of the study, validity and reliability of instruments and ethical consideration.

2.1. Study design: A Quasi-experimental study: pretest and posttest for the same group.

2.2. Study setting: four hospitals were (Khartoum Teaching Hospital, Ahmed Gasim Hospital, Omdurman Teaching Hospital and Khartoum North Teaching Hospital chosen for this study, Khartoum state, Sudan.

2.3. Sample: Nursing staff providing the patients nursing services in the intensive care unit in Khartoum Teaching hospital, Ahmed Gasim Hospital, Omdurman Teaching Hospital and the Khartoum North Teaching Hospital.

2.4. Sample size: The recommended sample size given by the total coverage of nurses. So the total numbers of participants were 100.

2.5. Data collection technique and tools: one tool was used to collect the needed data to achieve the aim of the study, they was: observational checklist to assess practice.

2.6. Data analysis: The collected data as pretest and posttest organized, categorized, tabulated using mean and standard deviation. The statistical package for social sciences (SPSS version 20) was used for analysis.

2.7. Phases of the study:

2.7.1. Pre intervention phase: Baseline survey was conducted.

2.7.2. Intervention phase: Started from (July-October, 2016), the education was given through Lectures, vides, group discussion, booklets and seminars. The contents of the program were assigned to, include basic knowledge regarding nursing care of CPR.

2.7.3. Post Intervention Monitoring: Posttest was done twice early post interventions and later after three months' post interventions. She was using the same tools to compare between pre and post intervention program which were conducted to evaluate the effect of the program on respondents.

2.8. Ethical Consideration: An official letter was taken from the National Al Ribat University to hospitals administrators for permission to carry out the study. Participants provided verbal consent to participate they have also been assured of confidentiality and of freedom to withdraw without conditions.

Results

Nurses' Practice

Table 1: Practice assessment of the participants regarding initial steps in care of patients with cardiac arrest before and early after implementation of the educational program (n =100).

Statements	Pre		Post		SE	C/I 95%		t	DF	P
	Correct n (%)	Mean±SD	Correct n (%)	Mean±SD		Lower	Upper			
Verbally asked the patient "are you okay, shake gently	50(50.0)	0.50±0.50	91(88.0)	0.91±0.29	0.06	-0.52	-0.30	-7.1	198	0.002
Call for help or activate emergency response system	51(51.0)	0.51±0.50	92(92.0)	0.92±0.27	0.06	-0.52	-0.30	-7.2	198	0.001
Turn victim on to back while supporting head and neck. Place the victim on the floor	50(50.0)	0.50±0.50	95(95.0)	0.95±0.22	0.05	-0.56	-0.34	-8.2	198	0.003
Use a head tilt and chin lift Maneuver	50(50.0)	0.50±0.50	76(76.0)	0.76±0.43	0.07	-0.39	-0.13	-3.9	198	0.001
Place his/her ear over victim's mouth and observed the chest for rising with respiration	42(42.0)	0.42±0.50	92(92.0)	0.92±0.27	0.06	-0.61	-0.39	-8.8	198	0.005
Listen, look and feel for breathing for 3-5 seconds	40(40.0)	0.41±0.49	92(92.0)	0.92±0.27	0.06	-0.63	-0.41	-9.2	198	0.003
Pinch the victim's nostrils with thumb and index finger of the hand holding the forehead	41(41.0)	0.41±0.50	92(92.0)	0.92±0.27	0.06	-0.62	-0.40	-9.0	198	0.002
Take a deep breath and place mouth around the client's moth with a tight seal	47(47.0)	0.47±0.50	94(94.0)	0.94±0.24	0.06	-0.58	-0.36	-8.5	198	0.006
Ventilate two slow breaths. Each breath took 2 seconds to deliver	50(50.0)	0.50±0.50	94(94.0)	0.94±0.24	0.06	-0.55	-0.33	-7.9	198	0.002
Pause between breaths allow for lung deflation and to take another deep breath	49(49.0)	0.49±0.50	93(93.0)	0.93±0.26	0.06	-0.55	-0.33	-7.8	198	0.003
If the victim is breathing but still unresponsive turn on to side (recovery position)	41(41.0)	0.41±0.49	92(92.0)	0.92±0.27	0.06	-0.62	-0.40	-9.0	198	0.002

Table 2: Overall score grade of the practice components of the study participants, compared pre-program and late after program.

Overall score grade	Before program		Late after program		P value
	N	%	N	%	
Poor	57	57%	8	8%	0.001
Good	31	31%	22	22 %	
Very good	12	12%	70	70 %	
Total	100	100%	100	100 %

Figure (1) Comparison of overall total practice between pre and after implementation of educational program (P value 0.007)

Figure (2) Comparison of overall practice grade between pre and after implementation of educational program (P value 0.007)

Discussion

In this study 100 nurses were selected to participate in the program. Concerning Practices: At baseline average level of practices of the participant toward patients with CPR was reported by (42%) of them and their overall grade were poor (57%), which increased at the early post program test to (82%) and (78%) respectively (Figures 1 and 2). Slight decrease in both score and grade of practice were reported by 77% correct practice and 70% very good grade of practice at late post program test (table 2). This study is similar to the study conducted at Al Basra (Iraq) General Hospital (8) . Regarding the practices of the participants on the initial steps in care of the patients with cardiac arrest, the findings of our study detected significant increase ($p < 0.05$) (Tables1) in the level of the practices of the nurses after attendance of the program, that means the program showed positive impact on the participants, which was reflected on the clear improvement in their correct application of the initial steps and procedures of compression for the patients with cardiac arrest. The results of this study were in the same line with other previous studies, one study from India ⁽¹⁰⁾. showed that practices of nurses on CPR was significantly improved with training based on educational program. Two other studies in Egypt ⁽⁷⁾. Showed significant improvement in our nurses` practices regarding application of initial steps of care of patients with cardiac arrest as well as procedures of compression. Being at the heart of the health care delivery is an enormous challenge for nursing, but it is also a golden opportunity to save the life of the patient. A high level of knowledge and skill of CPR is expected from all participants to save the lives of the unfortunate victims of cardiac arrest.

Conclusion

According to the study findings the researcher concluded that: An early evaluating post training program test revealed a significant improvement of both knowledge and practice of the participating nurses. A late (three months) post program assessment to assess the retention of the already gained knowledge and practice demonstrated a little drop in their level.

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