

Bystander CPR during out- of- hospital cardiac arrest among patients brought to emergency Department

***Mr. Sajithkumar. P, **Dr. Ratna Prakash**

** PhD Research Scholar, INC Consortium and Assistant Professor, Government College of Nursing, Kozhikode*

*** Professor & Principal, Pal College of Nursing, Nainital.*

Abstract: Sudden cardiac arrest (SCA) refers to the sudden cessation of cardiac mechanical activity with hemodynamic collapse, most frequently due to sustained ventricular tachycardia/ ventricular fibrillation. Almost 8 lakh people die off sudden cardiac arrest every year in India with over 80% of these emergencies occur outside a hospital setting. On average, a victim begins to suffer irreversible brain damage 4 minutes after the cardiac arrest takes place if no CPR (a combination of rescue breathing and chest compressions) is administered. For every minute that a cardiac arrest victim does not receive CPR, his chances of survival drops by 10%. An effective CPR from a bystander can double a victim's chances of surviving a sudden cardiac arrest. Among 350 bystanders only eight participants performed out of hospital CPR until they reach the health care facility. The reported reasons for non performance of CPR by the bystanders were ignorance (63%), lack of proper training (98%), fear of making mistakes (14%), lack of facility in the transportation systems (6%) and fear of legal issues (23%). Nurses being the committed health care task force both in hospital and community settings have to extend their knowledge and skills to prepare the public force to achieve the goal of early identification of the emergency and Cardio Pulmonary Resuscitation including the use of automated external defibrillation to the people in need.

I. Introduction

Sudden cardiac arrest (SCA) refers to the sudden cessation of cardiac mechanical activity with hemodynamic collapse, most frequently due to sustained ventricular tachycardia/ ventricular fibrillation. Almost 8 Lakh people die off sudden cardiac arrest every year in India with over 80% of these emergencies occur outside a hospital setting. On average, a victim begins to suffer irreversible brain damage 4 minutes after the cardiac arrest takes place if no CPR (a combination of rescue breathing and chest compressions) is administered. For every minute that a cardiac arrest victim does not receive CPR, his chances of survival drops by 10%. An effective CPR from a bystander can double a victim's chances of surviving a sudden cardiac arrest.

Statement of the Problem

A study to identify Bystander CPR during out- of- hospital cardiac arrest among patients brought to emergency department of selected multispecialty hospitals in Kerala.

The objectives of the study were to:

- Identify Bystander CPR during out of hospital cardiac arrest among patients brought to emergency department.
- Identify the factors contributing to performance/ non performance of bystander CPR.

Background of the problem:

The administration of CPR by a lay person bystander is important in determining patient outcome after out of hospital SCA. Survival after SCA is higher among those who had bystander CPR when compared with those who initially receive CPR from health care personnel. Also early restoration or improvement in circulation is associated with better neurologic function among survivors (Aufderheide. TP, et al. 2010). Bystanders are often reluctant to perform CPR out of fear of disease transmission, lack of confidence, fear of legal liability or as a result of lack of proper training. (Worcester. S, 2008)

II. Methodology

Quantitative non-experimental approach with descriptive survey design was selected for study. The sample consisted of 350 bystanders who have witnessed an out of hospital sudden cardiac arrest and brought the victim to the emergency department selected through convenient sampling technique. The study was conducted in 21 emergency Departments of multispecialty hospitals in Kerala.

Data Collection Tools and Technique:

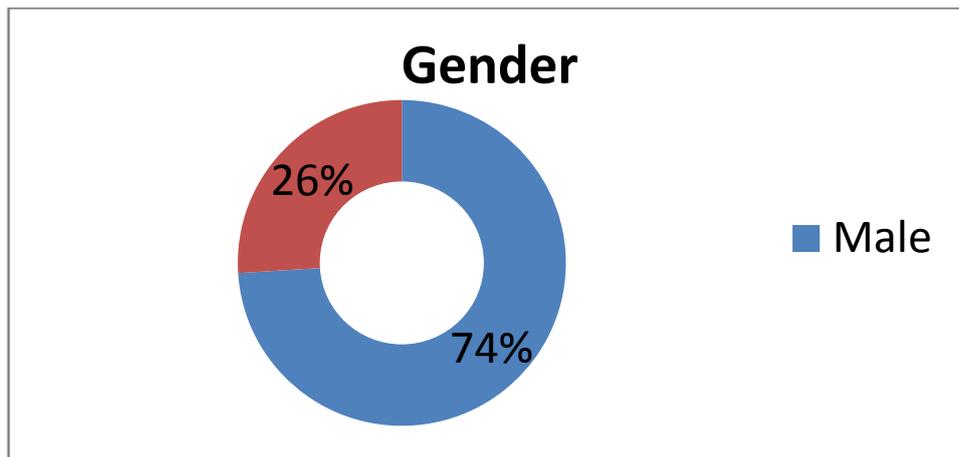
Demographic Proforma, Clinical Proforma, Performance checklist, non performance data sheet to assess factors contributing to non initiation of CPR were used to collect the data. Data collection technique was self reporting and interview. The bystanders who brought the victims with out- of -hospital cardiac arrest after handing over to the emergency room staff/ NRHM or other NGO led ambulance staff were interviewed.

Data Analysis:

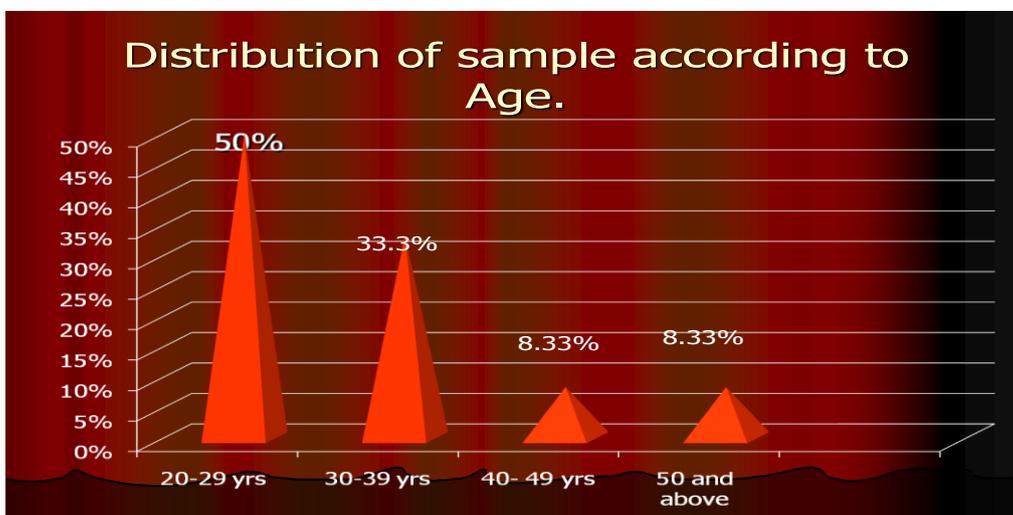
The collected data were analyzed using descriptive and inferential statistics using spss version 17.

III. Results

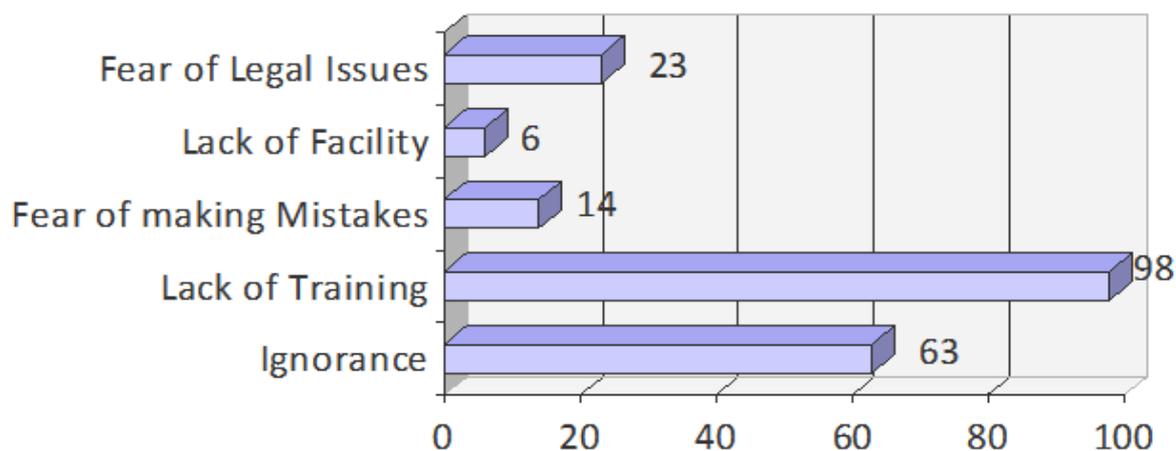
Distribution of sample according to gender



Distribution of sample according to age



Distribution of sample based on the factors contributing to nonperformance of CPR



Most of the bystanders had college education (58%). Only 2% of the bystanders (7) had previous knowledge on CPR from health care professionals. With regard to the relationship with the victim 52 % of the samples were non relatives. 8% of the patients were transported to the hospital in ambulance system. 61% of the victims had previous history of cardiac diseases and were on treatment. Among 350 bystanders only eight participants performed out of hospital CPR until they reach the health care facility. A participant who did not receive any public CPR training also attempted Hands only CPR until reaching hospital with a vague idea got from a movie scene. The survival rate was minimal and only 3 victims who received CPR were successfully resuscitated without neurological deficits. The reported reasons for non performance of CPR by the bystanders were ignorance (63%), lack of proper training (98%), fear of making mistakes (14%), lack of facility in the transportation systems (6%) and fear of legal issues (23%).

IV. Interpretation and Conclusion

The findings of this study reveal that effective bystander CPR is independently associated with statistically significant improvement in survival outcome following out-of-hospital cardiac arrest. Public in the state are far behind in the global surge to learn cardio pulmonary resuscitation. While several countries in the world are training the common man about CPR to save sudden cardiac victims from dying, the world Heart Federation says less than 1% of Indians would presently know how to carry out a CPR (Sinha K, 2012).

Implications

Preparing Public to perform Life saving skills in the emergency situations they witness is a challenging task of every health care professional. CPR is an inexpensive and readily available technique that can save lives. Nurses being the committed health care task force both in hospital and community settings have to extend their knowledge and skills to prepare the public force to achieve the goal of early identification of the emergency and Cardio Pulmonary Resuscitation including the use of automated external defibrillation to the people in need.

Reference

- [1]. Aufderheide TP, Yannopoulos D, Lick CJ, Myers B, Roming LA, Stothert JC, et al. Implementing the 2005 American Heart Association Guidelines improves outcomes after out-of-hospital cardiac arrest. *Heart Rhythm* 2010;7(10):1357-62
- [2]. Worcester. S, Call Issued for Widespread Public CPR Training: The potential exists to save the lives of thousands of victims of sudden cardiac arrest each year. *Elsevier Global Medical News , ACEP News* March 2008
- [3]. Sinha K, Less than 1% Indians know Cardiopulmonary Resuscitation, *Times of India* 2012