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KNOWLEDGE, ATTITUDE AND AWARENESS OF BLS AMONG NURSING STAFF WORKING IN GOVERNMENT MEDICAL COLLEGE

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Abstract

Background: Basic life support (BLS) is a life-saving method that includes instant recognition of cardiac arrest, initiation of the emergency response systems, adopting adequate cardiopulmonary resuscitation (CPR), and implementing rapid defibrillation. To assess the knowledge, awareness and attitude about basic life support (BLS) among nursing staff practicing at government medical college Bharatpur and attached hospitals. **Material and Methods:** A questionnaire comprising of 20 questions was circulated to 250 nurses to assess the levels of awareness and attitude towards BLS and its practical knowledge. **Results:** A total of only 10% nurses had good knowledge about BLS, while 50 % had moderate i.e between 60 to 80% and 40 % nurses had poor knowledge (below 50%).However maximum were aware about BLS and had a positive attitude towards the need for knowing BLS and its training. **Conclusion:** Awareness and knowledge about BLS was not satisfactory and needs to be improved.

Keywords: BLS, Cardiopulmonary Resuscitation, AED, EMS, Nurses.

Introduction

Basic life support (BLS) is a life-saving method that includes instant recognition of cardiac arrest, initiation of the emergency response systems, adopting adequate cardiopulmonary resuscitation (CPR), and implementing rapid defibrillation. It can be effective in reducing mortality and morbidity in several medical emergencies. Hence it is very important that every person in the community know about Basic Life Support to save lives and improve the quality of community health. The American Heart Association (AHA) initiated a program named Basic Life Support (BLS) which is the foundation for saving the person's life in response to cardiac and respiratory arrest. As per the survey conducted by Lybrate around 98 per cent Indians are not trained in the basic life-saving technique of cardiopulmonary resuscitation (CPR) during sudden cardiac arrest.[1,2]

At least the doctors, nursing and paramedical staff are expected to know about it, as they are frequently facing life threatening situations and the knowledge of BLS will be definitely

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useful. Studies conducted among clinical faculties and undergraduates worldwide do not provide satisfactory information among nursing staff community, which is the backbone of medical and health facility. It has been found that the knowledge and awareness on BLS was exceptionally poor among wellbeing experts like doctors and attendants of medical, dental, homeopathy and nursing universities. Nursing staff is the major pillar of medical health profession.In this context, we sought to assess the attitude, awareness and level of knowledge of BLS among nursing staff working in government medical college, Bharatpur and attached hospitals.[3,4]

Material and Methods

A cross-sectional study was conducted by assessing the responses to 20 selected basic questions regarding BLS among nurse practicing at government medical college Bharatpur and attached hospitals. After approval from institutional Ethical Review Committee a questionnaire (annexure 1) comprising of 20 questions regarding the demography, attitude, awareness and knowledge of BLS components was used. We used a structured questionnaire which was adapted from pretested questionnaires that have been used previously in similar studies in India. The questionnaire was then assessed by carrying out a pilot study among the experienced medical fraternity and the necessary corrections were made accordingly after consultation. 250 questionnaires were circulated among nurses working in Govt. medical college and hospital, Bharatpur. Out of which 225 were complete and so included in the study. Incomplete questionnaire responses were excluded from the study. Those with equal to or more than 80% score were considered to have adequate satisfactory knowledge. The aspects on which they were interrogated were about the abbreviation of BLS, AED and EMS (Emergency Medical Service), sequential steps in BLS, assessment and resuscitation techniques with regard to airway, breathing, circulation in unresponsive victims.

Results

Maximum nursing staff belonged to age group 31 to 40 years i.e 60 %(135), 30% between 21 to 30 years and 10% between 41 to 50 years. None of the respondents were above 50 years of age. In terms of experience maximum i.e. 70 % had an experience of 11 to 20 years, while 20% nursing staff had an experience less than 5 years. None had experience more than 20 years. Approximately 90 % (203) nursing staff said they had heard of BLS, knew the full form of BLS and that nursing staff should know about BLS. While all of them had sometime or the other seen perform BLS, but only 80 %(180) had performed BLS at least once. Only 60% (135) nursing staff had attended workshop/training regarding BLS. (Chart 1).

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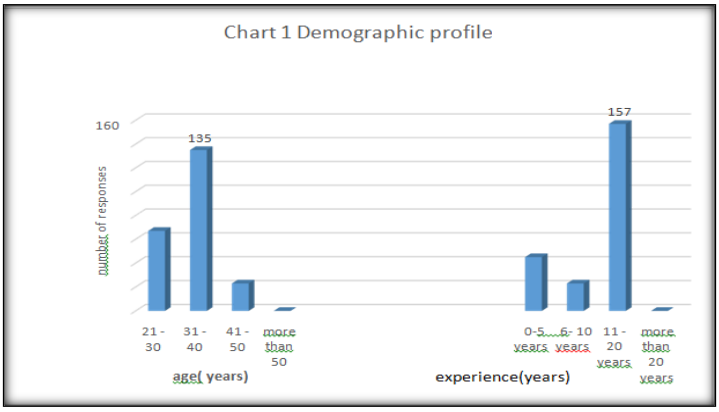
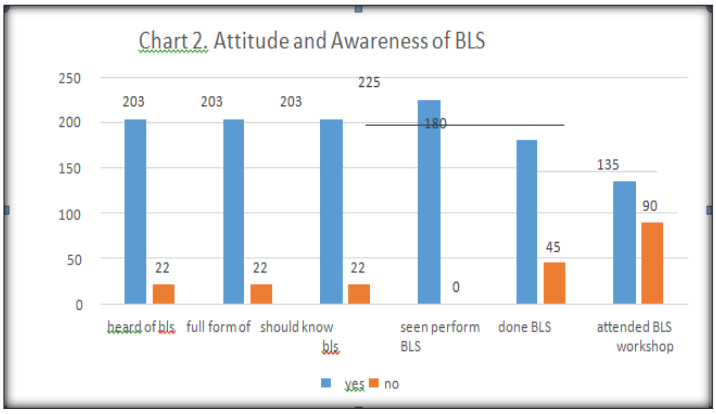
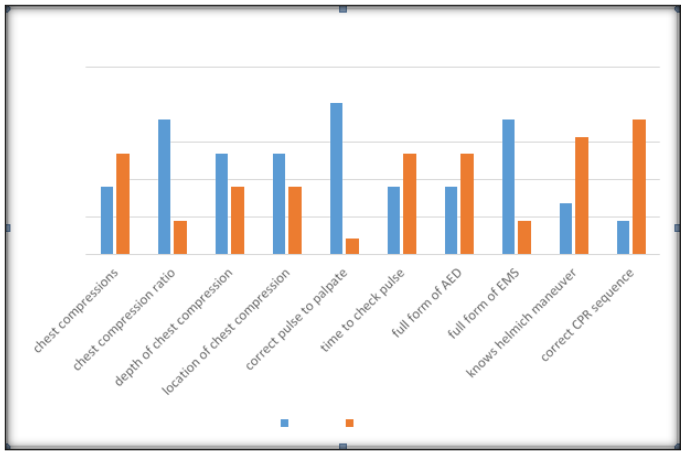




Regarding assessing individual components of BLS, 40 % knew that100 chest compressions are to be performed in a minute, while 60 % knew that the depth of compressions should be 1.5 to 2 inches and that the correct location of chest compression was mid chest. 80 % knew the correct ratio of chest compressions and breath is 30:2. 90 % knew that carotid pulse was to be palpated and looked for in an unresponsive person, but only 40% knew for how long it was to be looked for.



Also 40 % nurses knew the full form of AED correctly as automated external defibrillator.80% staff nurses could correctly expand EMS. Only 30 %(157) had heard of

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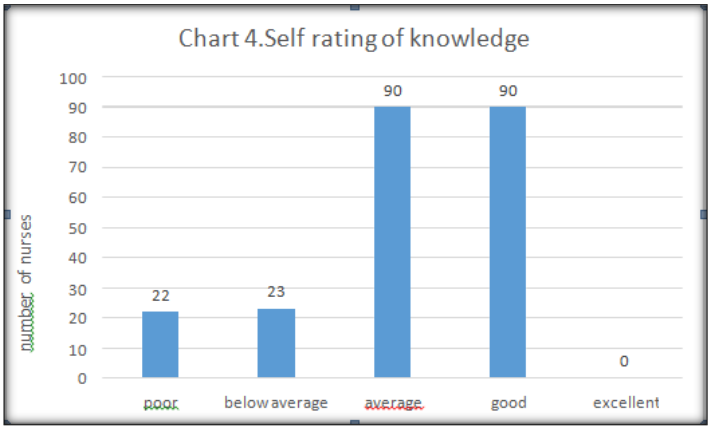
heimlich manoeuvre. Only 20 % correctly knew the sequence of performing CPR being circulation, airway and breathing.

Table 1: Relation between Experience of Work in Years and Knowledge

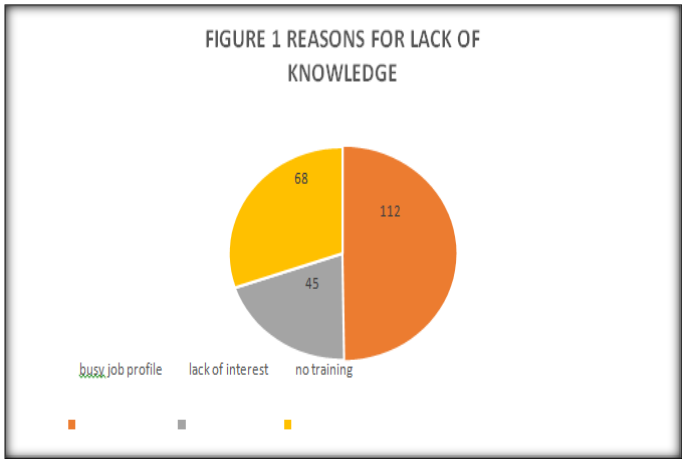
	Knowledge		**Total**
Experience In Years	**Adequate**	**Inadequate**	
0-5 Years	30	15	45
6-10 Years	20	3	23
11-20 Years	130	27	157
More Than 20 Years	0	0	0

P<0.039: significant

There was relation seen between number of years of experience and adequate knowledge. Those with greater experience had better knowledge (more than 60%).



40 % nursing staff could rate their knowledge as average and good each. 10 % said it was poor and nearly 10 % said that their knowledge was below average (chart 4). Regarding reasons for lack of knowledge about BLS, around 50% attributed it to busy job profile, 30%to no training courses and 20% to lack of interest. [Figure 1]



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Discussion

According to the World Health Organization, about 17.3 million people died from Cardio Vascular Diseases (CVDs) in 2008. This represented 30% of all the global deaths. Out of these most were due to coronary heart disease and stroke. For patients who have a cardiac arrest, survival rates and neurologic symptoms are grave. In these conditions, early Cardio Pulmonary Resuscitation (CPR) and early defibrillation might be useful to improve the survival and neurologic outcomes. It is important that every member of our community should be trained in effective BLS technique to save lives. At least doctors and medical and paramedical staff should be trained in high quality CPR, as it is a basic medical skill which can save many lives if implemented timely and correctly.[2-4]

Cardiopulmonary resuscitation (CPR) increases the probability of survival of a person with cardiac arrest. Repeating training helps staff retain knowledge in CPR and in use of automated external defibrillators (AEDs). Retention of knowledge and skills during and after training in CPR is difficult and requires systematic training with appropriate methodology. Providing efficient basic life support (BLS) training is crucial for practicing nurses who provide direct patient care.

Our study was conducted to identify the awareness, attitude and knowledge regarding basic life support among nursing staff in tertiary care hospital. The study was conducted on a total sample of 225 nursing staff. A similar study was conducted by Rajashekhar et al to evaluate knowledge of basic life support among 388 health care professionals in which 64.5% were medical students, 8.7% were doctors, 10.3% were nursing staff and 16.5% were nursing students (3). In a similar study by Asadi P et al, the knowledge of 183 nurses working in emergency departments, intensive care unit and coronary care unit regarding the 2015 American Heart Association basic life support guideline algorithm was investigated.[3,4]

Maximum nursing staff belonged to age group 31 to 40 years (60%) and 70 % had an experience of 11 to 20 years. Nearly 90 % (203) nursing staff had heard of BLS, knew the full form of BLS and that nursing staff should know about BLS. While all of them had sometime or the other seen perform BLS, but only 80 %(180) had performed BLS at least once and only 60 percent had attended workshop or training regarding the same. Maximum were aware about BLS and had a positive attitude towards the need for knowing BLS and its training. This was consistent with other studies too. In a similar study in Nepal, all had heard of BLS, while only 56 % had performed BLS (5).Positive attitude of nurses towards CPR is good foundation to create change and develop new strategies in practice and training of CPR.[5-7]

Provision of up-to-date information and skills training related to basic life support practices is very important for nursing students.A study was carried out by Kose S et al (6) in 2019 where by they examined the effectiveness of basic life support training on knowledge and practices among nursing students. The sample consisted of 65 nursing students. The students' knowledge and practices were assessed before basic life support training. Data were collected using the knowledge assessment questionnaire. The pre-and post-assessment practice scores were compared. They found that after basic life support training, level of knowledge and practical skill scores were higher compared to pre-training scores. The study showed that basic life support training improved knowledge and skills related to basic life

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support practices in nursing students. Periodic basic life support training is very important for competency in this area among nursing students.

In our study almost more than 80 percent nurses were aware about BLS and EMS full forms. But only 40 percent could expand AED correctly. 80 % knew the correct ratio of chest compressions and breath but only half of the individuals were able to correctly identify the location (60.0%), depth of compressions, and number of chest compressions (40%) required in an adult per minute. While these results were in contrast with the study carried out by Shekhawat and Chauhan, but similar results were seen in a study carried out in Nepal by Bajracharya S and others (5).

A study was carried on 183 nurses working in emergency departments, intensive care unit (ICU) and coronary care unit (CCU) regarding the 2015 American Heart Association basic life support guideline algorithm in 2021 by Asadi P etal (4). Data were collected by a 20-item questionnaire regarding the knowledge needed for resuscitation operations as well as the identification of the early stages of cardiac arrest. Nurses with a score of 10 and less were put in the poor group, 11-15 in the fair group, and score of more than 15 in the good group. A statistically significant difference was observed between knowledge of ICU nurses with an experience of basic life support educational course and those with no experience of such education. This study indicated that ICU nurses do not have enough knowledge about basic life support of the 2015 American Heart Association guideline.

While in our study only 10% nurses had good knowledge about BLS, 50 % had moderate i.e between 60 to 80 % and 40 % nurses had poor knowledge (below 50%).In a study carried out in Oman too the knowledge of the nurses in BLS and ACLS was found to be low (7). In a study by Babar Irfan et al also the doctors, nurses and dentists did not perform well when their knowledge regarding BLS was tested: with only 67.1% of the doctors, 35% dentists and 22.9% of the nurses having an adequate amount of knowledge regarding BLS (score $\geq$ 50%). A similar study from South India observed similar orderliness when adjusted according to scores. Another study from Nepal found the mean score of nurses to be greater than that of the dentists. The former study had only 15.2% of the participants scoring greater than 50%. There was a significant relation between years of experience in years and adequacy of knowledge about BLS, which was in contrast with the study in Nepal carried by BajracharyaS etal,[8-11]

Toubasi S did a pilot study on impact of simulation training on Jordanian nurses' performance of basic life support skills. This study aimed to assess the effectiveness of a BLS simulation training on Jordanian nurses' skill improvement in cardiopulmonary resuscitation.A pre-test was conducted following a CPR scenario to test the skills using 9-item checklist extrapolated from the American Heart Association guidelines. After debriefing, an interactive on spot training was provided. Later, participants undertook an unscheduled post-test after four weeks that included the same nine items. BLS simulation training sessions are associated with significant improvement in skills and performance among Jordanian nurses. A refreshment BLS training session for nurses is highly recommended to guarantee nurses' preparedness in actual CPR scenarios.[12]

Abolfotouh MA et al studied impact of basic life-support training on the attitudes of health-care workers toward cardiopulmonary resuscitation and defibrillation. The aim of this study was to determine the effect of basic life-support (BLS) training on the attitudes of health-care

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providers toward initiating CPR and on use of AEDs, and to investigate the factors that influence these attitudes. All participants had previously received BLS training. Both groups were given a validated questionnaire to evaluate the status of life-support education and certification, attitudes toward use of CPR and AED and concerns regarding use of CPR and AED. Multiple linear regression analyses were applied to identify significant predictors of the attitude and concern scores.Repeated educational programs can improve attitudes toward CPR performance and the use of AEDs. Training that addressed the concerns of health-care workers could further improve these attitudes.[13]

Elbaih AH et al did assessment of cardiopulmonary resuscitation knowledge and experiences between emergency department nurses hospital pre and post basic life support training courseThe study revealed 73% of nurses do not have previous training. Twenty-seven percentage nurses not have any information about CPR and 22.5% of them the main source of the information gained through training program more than one year ago. While the 94.6% of them willing to attend CPR training program and report they need to perform high quality CPR respectively. The study gives a clear view of the current knowledge and practice of CPR among nursing staff in institution and can help in developing it. It also gives detailed information about the exact weak points, which would improve, in next workshops.[14]

Terzi B et al did evaluation of basic life support training program provided for nurses in a university hospital. Lima SG et al assessed the impact of a permanent training program in BLS and ALS on the knowledge of nursing professionals. Pre-training level of knowledge was inversely proportional to the time elapsed since the completion of undergraduate course or technical course. Main deficiencies were related to the initial approach of airways, to post-resuscitation cares and to the external cardiac massage technique. The permanent training program in BLS and ALS resulted in important increment in the level of knowledge of nursing professionals.[15,16]

Nurses should have cardiopulmonary resuscitation (CPR) knowledge and skills to be able to implement effective interventions during in-hospital cardiac arrest. The aim of this descriptive study by Pareek M et al was to assess mortality impact after nurses' CPR training with pre-CPR training data at our institute.Training regarding CPR was given to nurses, and CPR mortality 1-year before basic life support (BLS) and advanced cardiac life support (ACLS) training were collected and compared with post-training 1-year CPR mortality.There was no significant association between either the age or sex with the outcomes in the study.Training nurses in cardiopulmonary resuscitation resulted in a significant improvement in survival to hospital discharge after in-hospital cardiac arrest.[17]

Development of knowledge is one of the important components of professional expansion in nursing education programs. Nursing professional is usually the first to witness cardiac arrest and call for help. Hence they need to have proficient knowledge and skill about BLS to contribute more efficiently in the cardiac arrest manuvers. BLS training should be made compulsory and should be a part of CMEs at regular intervals with mock drills for not only faculty members but also nursing staff; as appropriate training of BLS improves survival rates following resuscitation of cardiac arrest patients and such courses with hands on practice are essential for the betterment of CPR outcomes. The limitation of this study was its sample size and the fact that it was a questionnaire based study and not a skill based one.

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Conclusion

Nursing professional is usually the first to witness cardiac arrest and call for help. Hence they need to have proficient knowledge and skill about BLS to contribute more efficiently in the cardiac arrest manuvers. Awareness and knowledge about BLS was not satisfactory and needs to be improved. Periodic basic life support training is very important for competency in this area among nursing students.

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