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Knowledge, attitude and practice of basic life support among nursing staffs at a tertiary care hospital

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Abstract

Introduction: Basic life support is medical care that is provided for life threatening illnesses or injuries until a medical team arrives. The conditions can be cardiac arrest, respiratory distress or airway obstruction. This care can be provided by trained medical personnel or qualified bystanders. If basic life support is provided on time after prompt recognition of the situation, this helps to increase the chance of survival of the patient.

Method: This is a hospital based cross-sectional study done for the duration of three months (June 15, 2023-September 15, 2023). Questionnaire sets were distributed to all the participants after taking ethical clearance and their response was evaluated. The data were analyzed using Statistical Package for the Social Sciences (SPSS version 23). Descriptive statistics were used for demographic variables. Categorical data were presented as number (n) or percentage (%). Chi-square test was applied between two categorical variables. Pearson's correlation analysis was used to investigate the relationship between knowledge, attitude and practice.

Result: The total number of participants were 145. Our study showed good knowledge 126 (86.9%), good practice 120(82.81%) and poor attitude 90 (62.1%) among the nurses. Significant correlation was seen between knowledge and practice with p value 0.0

Conclusion: The nursing staff had good knowledge and practice regarding basic life support. They had a poor attitude regarding the same. Majority of them have provided basic life support volunta rily and thought it should be a part of their curriculum. Most of them were interested in undergoing basic life support training in a workshop center with hands-on practice under supervision.

Keywords: Attitude; Basic Life Support (BLS); Knowledge; Nurses; Practice

INTRODUCTION

BLS (Basic Life Support) is a life-saving method that includes recognition of cardiac arrest, activating emergency response system, initiation of chest compression and mouth to mouth resuscitation as soon as possible and using defibrillation without any delay.[1-3] The chances of survival after return of spontaneous circulation after cardiopulmonary arrest is usually low but it depends on how fast and adequately CPR is given and defibrillator is applied.[4-7] Nearly about 70% cardiac arrest occurs outside hospital setting and if acted promptly can increase the chances of survival.[8]

Basic life support is a care that is provided by health care professionals, first responders or any other personnel who have been trained for it in the patients of any age group undergoing cardiac arrest, respiratory distress or an obstructed airway. This care can be provided by any person and at anywhere but has to be trained by certified registered healthcare institute/registered health care providers. This process aims at giving support to the respiratory and cardiovascular system of the body by utilization of minimal resources, by implication of CPR (Cardiopulmonary Resuscitation), use of AED (Automated Electronic Defibrillator) and relieving airway obstruction in patients of every age .In the context of developing countries, one of the leading etiologies of morbidity and mortality is found to be out of hospital cardiac arrest that accounts for approximately 10%.[8] One of the studies has shown that about 92% of patients who have experienced cardiac arrest outside the hospital have lost their lives just because of limited availability of BLS facilities.[9] Such emergency situations are commonly encountered by health care professionals so they must be acquainted with knowledge of BLS. The level of knowledge and attitude of health care professionals including nursing and paramedics can vary from person to person. However, the demand for BLS trained professionals is being increased mostly in the developed countries for prompt and active resuscitation of the patients from the very beginning.

The skills and training received from BLS will help to quickly recognize the patients undergoing cardiac arrest, activate the emergency response team promptly, act quickly and confidently, and perform high quality CPR effectively. Knowledge in BLS will ensure that if provided at the right time by skilled professionals, the patient will have a better chance of survival. This type of study will be valuable in assessing knowledge, attitude and practice regarding BLS so that proper care and stabilization of the patients can be done as soon as possible, even prior the patients reach the nearest medical center which in turn can have a significant impact on morbidity and mortality. There has been limited research being published regarding this. The objective of this study is to assess knowledge, attitude and practice and their association regarding BLS among nursing staffs of Birat Medical College and Teaching Hospital. The demand for BLS Trained professionals is being increased mostly in the developed countries for prompt and active resuscitation of the patients from the very beginning. The concept of BLS is evolving in developing countries. This type of study would be valuable to know about the knowledge, attitude and practice of BLS among hospital nursing staff so that cardiac arrest can be identified quickly, defibrillation can be done early so that there will be better chances of survival of the patient.

METHOD

This is a hospital based cross sectional study done for the duration of three months (June 15, 2023-September 15, 2023) at Birat Medical College and Teaching Hospital. A questionnaire set was distributed to all the participants after taking ethical clearance from the IRC (Institutional Review Committee), Birat Medical College Teaching Hospital (REF: IRC-PA-316/2023) and their response was evaluated. For data collection, brief orientation regarding questionnaires were given to incharge of all the departments (emergency ward, general wards Including pediatric, medicine, surgery, gynaecology and obstetrics, ENT, Intensive care unit, High dependency care unit, Postoperative ward). Sample size calculation was done as a total enumeration sample. Total number of nursing staff willing to participate in the study was 145. Questionnaire was developed from thorough online search based on literature review that included 15 questions 5 for each (knowledge, attitude and practice) as Per American Heart Association (AHA), Basic Life Support (BLS) guidelines.[10] Content validity and reliability was ensured. It was validated through two American Heart Association (AHA) certified Basic Life Support (BLS) expert trainers. Questionnaire was translated into the local language. Pre testing was done among 10% of the study participants and feedback was taken regarding allotted time and contents of the questionnaire. It was again revised after that. Questionnaires were distributed as per total number of staff present in the particular wards and each person was allotted a time of 15 min to fill up the form. All the study participants were female nursing staff. Each question was allotted a score of 1. Correct response was given 1 point in case of knowledge and practice. 1 point was given to yes responses in questions from the attitude section. Total score was calculated by summation of each point in each section of questions from knowledge, attitude and practice. Those who scored 3 or more were considered to have good knowledge, attitude and practice. Those with scores less than 3 were considered to have poor knowledge, attitude and practice. Written informed consent was taken from all the participants. Those participants who were willing to get enrolled in the study were only included. Data were collected from 5 departments (Emergency ward, High Dependency Unit, Intensive Care Unit, Postoperative ward, General ward including pediatric, medical, surgical, orthopedics, ENT).

Total number of study participants was 145.

Operational definition

1. Knowledge- It is the capacity to acquire, retain and use information, a mixture of comprehension, experience, discernment and skill.[11]
2. Attitude- Refers to inclinations to react in a certain way in a certain situation to see and interpret events according to certain predisposition or to organize opinions into coherent and interrelated structures.[11]
3. Practice- It means application of rules and knowledge that leads to action.[11]

The obtained data were entered in Microsoft Excel. The data were analyzed using Statistical Package for the Social Sciences (SPSS) version 23. Descriptive statistics were used for demographic variables. Categorical data were presented as number (n) or percentage (%). Chi-square test was applied between 2 categorical variables. Pearson's correlation analysis was used to investigate the relationship between knowledge, attitude and practice. P value <0.05 was considered significant.

RESULT

The total number of study participants was 145 (Table 1). The nursing staff had good knowledge 126 (86.9%) and practice regarding BLS 120 (82.81%). 90 (62.1%) participants had poor attitude regarding the same (Table 2).

Table 1. Number of participants from each ward

Departments	N(%)
Emergency ward	11 (7.6%)
High Dependency Unit	15 (10.3%)
Intensive Care Unit	36 (24.8%)
Postoperative Ward	22 (15.2%)
General Ward	61 (42.1%)
Total	**145**

Table 2. Knowledge attitude and practice of nursing staffs

	Good (N%)	Poor(N%)	Total
Knowledge	126 (86.9%)	19 (13.1%)	145
Attitude	55 (37.9%)	90 (62.1%)	145
Practice	120 (82.81%)	25 (17.24%)	145

Fifty-eight (40%) of nursing staffs had voluntarily provided BLS. Around 127(87.6%) think that BLS training should be a part of their curriculum. 113 (77.9%) participants were hesitant to provide mouth to mouth ventilation for the person of opposite gender; 28(19.3%) didn't know about the correct site for chest compression and 65(44.8%) knew about the depth of chest compression.

They also knew about characteristics of high-quality CPR 136(93.8%) and knew about BLS sequence of steps 86(59.3%). Around 119(82.1%) of nursing staff knew where to check for pulse (Table 3).

Significant correlation was seen between knowledge and practice with p value 0.0. However, there was no significant correlation between (knowledge and attitude) and (attitude and practice) (Table 4).

Also, we found significant correlation between department and attitude, department and practice with p value 0.0and 0.033. (Table 5).

DISCUSSION

This study has been conducted to assess knowledge, attitude and practice among nursing staff. Our study shows more that 80% of the participants have good knowledge and practice which was consistent with the study done at Dilla University which shows more than 50% of the study participants have shown good knowledge and practice regarding the same.[14] The higher percentage in our study can be due to the reason that during recruitment, nurses

Table 3. Questionnaire and response

Questions (Knowledge)	Correct response (n%)	Incorrect response (n%)
1. Full form of BLS	143 (98.6%)	2(1.4%)
2. First step to approach unresponsive person as per BLS	105 (72.4%)	40(29.6%)
3. Site for chest compression	117 (80.7%)	28(19.3%)
4. Depth of chest compression	65 (44.8%)	80(55.2%)
5. Full form of AED	96 (66.2%)	49(33.8%)
Questions (Practice)		
1. Chest compression to ventilation ratio for lone rescuer	136(93.8%)	9(6.2%%)
2. Characteristic of high-quality CPR	107(73.8%)	38(26.2%)
3. Correct BLS sequence of steps	86(59.3%)	59(40.7%)
4. Where is the site to check pulse	119(82.1%)	26(17.9%)
5. First step BLS (adult)	72(49.7%)	73(50.3%)
Questions (Attitude)	**Yes (n%)**	**No (n%)**
Have you voluntarily performed BLS?	58(40%)	87(60%)
Would you perform mouth to mouth ventilation for person of same gender.	36(24.8%)	109(75.2%)
Would you perform mouth to mouth ventilation for person of opposite gender.	32(22.1%)	113(77.9%)
Would you like to go BLS training in a Workshop/center under supervision?	83(57.2%)	62(42.8%)
Do you think BLS should be a part of your curriculum?	127(87.6%)	18(12.4%)

Table 4. Correlation between knowledge, attitude and practice

	Poor practice	Good Practice	Total	P value	Correlation Coeff (r)
Poor Knowledge	11	8	19	0.0	0.418
Good Knowledge	14	112	116		
Total	25	120	145		
	Poor attitude	Good attitude	Total		
Poor Knowledge	11	8	19		
Good Knowledge	79	47	126	0.690	-0.33
Total	90	55	145		
Poor practice	Good practice	Total			
Poor attitude	15	75	90		
Good attitude	10	45	55	0.816	-0.019
Total	25	120	145		

Table 5. Correlation between knowledge, attitude, practice with department

	Poor knowledge	Good Knowledge	Total	P value	Correlation Coeff (r)
Emergency ward	3	8	11	0.27	0.091
High dependency care unit	3	12	15		
Intensive care unit	2	34	36		
General ward	9	52	61		
Postoperative ward	2	20	22		
Total	19(13.10%)	126(86.89%)	145		
	Poor attitude	**Good attitude**	**Total**	**P value**	**Correlation Coeff (r)**
Emergency ward	2	9	11	0.0	-0.320
High dependency care unit	2	13	15		
Intensive care unit	32	4	36		
General ward	35	26	61		
Postoperative ward	19	3	22		
Total	90(62.06%)	55 (37.93%)	145		
	Poor practice	**Good Practice**	**Total**	**P value**	**Correlation Coeff (r)**
Emergency ward	6	5	11	0.033	0.178
High dependency care unit	3	12	15		
Intensive care unit	1	35	36		
General ward	14	47	61		
Postoperative ward	1	21	22		
Total	25(17.24%)	120(82.75%)	145		

who have already received Basic life support training are given topmost priority and those who have not received yet are mandatory sent for the training to enhance their skill and confidence. Another study done among health professionals in eastern part of Nepal also has similar results showing about 67% have good knowledge of BLS.[15]

Our study included a total number of 145 nursing staff and all were female nursing staff. In one of the studies published in Malaysian nursing journal, they have also included paramedical staffs together with nursing staffs .[12] Our study didn't include paramedical health workers (Health assistant, Community medical assistant, Auxiliary nurse midwife) as they were very few in number and there is scarce male nurse in our part of the world. One of the studies done in a tertiary hospital in Nepal stated that around 58% of nurses had already done CPR[13]. In contrast, our study showed that about 40% of the participants had already voluntarily performed CPR. This difference can be explained as there could be lack of BLS training among nurses and they couldn't confidently recognize the situation for prompt starting of CPR.

A significant association was found between specialty departments of the participants and knowledge among health care workers done in one of the teaching hospitals of south Asia.[16] Their research has shown medical and surgical departments had good knowledge regarding BLS. However, findings of our study didn't match with this as the study showed good knowledge among nurses of the ICU department and there was no significant association between department and level of knowledge. The difference in the study can be due to the fact that the aforementioned study also included all other health workers including paramedical staff, medical officers, resident doctors. Nurses in the ICU department have more exposure regarding management of critically ill patients and they can quickly identify them to initiate the resuscitation process. Also, there can be variation in level of knowledge, clinical skills among doctors and other health professions as BLS has been incorporated into the study curriculum in most of the teaching hospitals. A study done among registered nurse in one of the private hospitals in Seremban showed significant association between level of knowledge and practice with p value

0.0319 which was consistent with our study.[12] This indicates if there is good knowledge, it will help in enhancement of the clinical management skills and practice in BLS to save lives and improve overall survival of the patients. Majority of the participants felt comfortable to provide mouth to mouth breathing while providing BLS in the study done among doctors and medical students in the tertiary hospital. In contrast to our study, most of the participants were hesitant to provide mouth to mouth breathing for same or opposite gender.[17] As mouth-to-mouth resuscitation involves direct contact with a person's mouth and respiratory secretions, many people hesitate to give breaths especially when the victim is stranger. Lack of knowledge regarding use of pocket mask (barrier device) and its easy availability can also be another reason for this. This can be improved by giving BLS training to nurses, integrating BLS in study curriculum and conducting frequent in-service education.

However, the study has several limitations. First, the sample size was relatively small and drawn from only nursing staffs which might limit generalization of the findings as other health workers were not included. Some questions might have been interpreted in a different way by participants. Complexity and length of the question might have led to incomplete or hurried responses from the participants.

Basic Life Support is an integral part of basic emergency services. It is considered as one of the life saving measures to prevent life threatening emergencies such as cardiac arrest, severe respiratory distress and airway obstruction. Nurses are involved round the clock for providing nursing care to the patients and they have a critical role in identifying the patients undergoing cardiac arrest and start quick treatment for the same. For this, knowledge and practice regarding Basic Life Support is must.

CONCLUSION

The nursing staff had good knowledge and practice regarding Basic Life Support (82.81%). They had poor attitude regarding the same. Majority of them have provided BLS voluntarily and think it should be a part of their curriculum. Most of them were interested in undergoing BLS training in a workshop center with hands-on practice under supervision. Introduction of BLS in the curriculum or making BLS training mandatory for health care workers will help to provide prompt care in patients with cardiac arrest that improves their chance of survival. Advocating for the integration of BLS training into healthcare education curriculum and adopting monitoring measures to check the effectiveness of training will contribute to better emergency response.

DECLARATIONS

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Conflict of Interest

None

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None

Ethical Clearance

Taken on 11th June 2023 From IRC BMCTH, no: IRC-PA-316/2023

Consent for publication

Taken

Consent for study

Written informed consent taken from all the participants.

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