Original Research Article

International Journal of Silkroad Institute of Research and Training (IJSIRT)

Vol-1. No. 2, Jul-Dec 2023 DOI:10.3126/ijsirt.v1i2.61660 ISSN: 2990-7837 (Online & Print)

Knowledge, Attitude and Practice Regarding Cardiopulmonary Resuscitation among Nurses in Selected Hospitals of Bharatpur, Nepal

Babita Ghimire,[1] Sujana Aryal,[1] Hari Prasad Upadhyay[2]

[1]Department of Nursing, Shree Medical and Technical College, Bharatpur, Chitwan Nepal, [2]Department of Statistics, Birendra Multiple Campus, Bharatpur, Chitwan, Nepal.

ABSTRACT

Background: Cardiac arrest is a significant public health problem projected to account for 15–20% of all deaths. It is also recorded by WHO to be an important cause of cardiovascular morbidity and mortality in both developed and developing countries. Cardiopulmonary resuscitation is a lifesaving medical procedure for victims of sudden cardiac arrest. The objective of the study is to assess the knowledge, attitude and practice regarding cardiopulmonary resuscitation among nurses in selected hospitals of Bharatpur, Nepal.

Methods: A cross-sectional analytical study design was employed. A convenience sampling method was used to select the study areas as well as for data collection in selected hospitals of Bharatpur. A self-administered questionnaire and Likert scale was used to obtain data. Data obtained were summarized as frequencies, percentages, mean, standard deviation and associations were then tested using Likelihood, Fisher exact and Pearson's chi-square test, at 5% Significance.

Results: Total 216 nurses participated in the study, the result of the study indicated that majority of nurses in selected hospitals had poor knowledge (52.3%), with majority of positive attitude 52.3%. Out of 216 subjects, 27.8% had taken part in in-service education/ training while only 98(45.4%) nurses had performed CPR and has good practice 64.3%.

Conclusions: The study result shows that the nurses still had inadequate level of knowledge, attitude and practice. In these facilities need further training and periodic workshop on cardiopulmonary resuscitation to help nurses improve upon quality of care given to cardiac arrest patients.

Keywords: knowledge; attitude and practice; cardiopulmonary resuscitation; nurses.

Received: 13th July, 2023 Accepted: 24th August, 2023 Published: 31th December, 2023

INTRODUCTION

Cardiac arrest is the cessation of cardiac mechanical activity resulting in the absence of circulating blood flow. Cardiac arrest stops blood from flowing to vital organs, depriving them of oxygen, and, if left untreated, results in death. Sudden cardiac arrest is the unexpected cessation of circulation within a short period of symptom onset. In adults, sudden cardiac arrest results primarily from cardiac disease.[1] Cardiopulmonary resuscitation (CPR), is a lifesaving procedure that is performed after someone suffers sudden cardiac arrest. It includes a combination of rescue breathing and chest compressions, which serve to deliver oxygen to a person's lungs and help circulate the blood. Process of CPR Compressions – 30 compressions at 2 inches deep, 100 per minute. If the rescue personnel is trained in CPR, they should give 2 rescue breaths, otherwise, continue with compressions. Rescue breaths begin by tilting the victim's head back and lifting the chin slightly to open the airway, then pinching the nostrils closed and giving 2 normal breaths, watching the victim's chest rise and fall. Continuing the cycle of continued compressions or 30 compressions and two rescue breaths. In 2017, primary-cause sudden cardiac death (SCD) mortality was 18,835, and any-mention SCD mortality in the United States was 379,13.[2] Global survival rate among adult out-of-hospital cardiac arrest patients who received cardiopulmonary resuscitation, pooled incidence of return of spontaneous circulation was 29.7%, the rate of survival to hospital admission was 22.0%, the rate of survival to hospital discharge was 8.8%, the pooled 1-month survival rate was 10.7%, and the 1-year survival rate was 7.7%. The survival to discharge is 9.9% 2010–2019,1-month survival 13.3% in 2010–2019, and 1-year survival 13.3% in 2010–2019 rates of cardiac arrest patients who underwent CPR significantly increased.[3] South

Correspondence: Mrs. Babita Ghimire, Department of Nursing, Shree Medical and Technical College, Bharatpur, Chitwan Nepal, Email: babitaghimire299@gmail.com, Phone: +977-9855054928.

India in tertiary care center medical records of 223 patients, 181 had sudden cardiac death, 163 of them had identifiable cardiac death and 18 had non-identifiable cardiac death.[4] Study was performed in Department of Forensic Medicine, Maharajgunj among 51 cases in a year, death was between 40 –60 years.[5] Cardiac arrest is an unexpected sudden event occur at any location, at any time, henceforth survival depends on rapid and proper intervention by trained personnel. As per anecdotal evidence it is likely to be a significant health care problem in Nepal.[6]

A study on Greater Accra Regional Hospital and Legon Hospital in Ghana among 248 nurses had low knowledge 44.76% and had fair practice on CPR 52.8%.[7] also study conducted on North East Ethopia at Dessie Referral Hospital among 182 nursing professionals 40.1% have poor knowledge, 15.4% have a poor attitude and only 69% of nurses have poor performance of cardiopulmonary resuscitation.[8] Study in Pakistan of District Headquarter Hospital among 110 nurses 69.1%, 10%, 4.5% and 7.3% nurses showed excellent, good, fair and poor knowledge of CPR respectively while 56.3%, 11.8%, 16.4% and 15.5% nurses scored excellent, good, fair and poor practices of cardiopulmonary resuscitation, respectively.[9] In Nepal, tertiary level of hospital among 50 nurses 66 % had inadequate knowledge, 32% had moderate knowledge while the minority 2% had adequate knowledge.86% of the respondents had seen CPR being done, 58% of the respondents had done CPR,[10] and study on Medical Colleges, knowledge is particularly less 16.38 ± 2.39 in nursing faculties. Knowledge correlated with having received CPR training. A few of the nursing faculties have had CPR training, indicating their low priority.[11] CPR is the procedure provided in an emergency condition to save a life. Nurses are the one who are around the patient and can identify the need of resuscitation earlier in a hospital. After reviewing, researchers find there is still inadequate knowledge, attitude and practices of nurses regarding CPR. So, Researcher is interested in conducting research in order to determine the knowledge, attitude and practice regarding CPR among nurses in selected hospitals of Bharatpur. The findings of the research also help the health administration, health personnels, and other concerned people for planning and implementing the training programme for the nurses regarding cardiopulmonary resuscitation.

METHODS

A cross sectional analytical study was conducted among nurses working in Bharatpur Hospital and College of Medical Science Teaching Hospital, Bharatpur of different units. Total population of Nurse were 482 (Bharatpur Hospital-147) and (College of Medical Sciences and Teaching Hospital-335). Hospitals were selected purposively and non-probability convenient sampling technique was used for data collection. In this research 216 respondents were selected proportionately from both hospitals. Semi structured self-administered questionnaire and Likert scale was used to assess knowledge, attitude and practice regarding CPR among nurses. The ethical approval was obtained from the Institutional Review Committee of Shree Medical and Technical College (SMTC-IRC). Then all the collected data was entered in Excel, analyzed in SPSS- 17. Descriptive and inferential statistical tools were used for data analysis. In descriptive statistics frequency, percentage were used while mean, standard deviation were used for continuous variables. In the inferential statistics Likelihood, Fisher exact and Pearson's chi-square test were used. P-value <0.05 was considered as statistically significant.

RESULTS

Out of 216 respondents majority of 199(92%) respondents were in age group of 20-30 years and 17(8%) were in age group of 31-40. The mean value of age was 25.93 and standard deviation was 3.6. Regarding qualification, highest percentage of respondents had done PCL Nursing 73.1% and Bachelor Nursing 26.9%, 57.4% respondents had working experience of less than and equal to 36 months and 42.6% respondents had working experience more than 36 months. Out of 216 respondent's majority were from medical ward 16.7% and least 2.8% from

cabin. Where 27.8% had taken part in in-service education or had taken training, and 45.4% have performed CPR during their working period (Table 1).

Table 1. Socio-demographic information of the respondents. (n=216)

Variables	Frequency (%)
Age	
20-30	199(92)
31-40	17(8)
Mean ±SD	25.93 ± 3.6
Qualification	
PCL nursing	158(73.1)
B.Sc. Nursing	58(26.9)
Working Experience (in months)	
≤36 months	124(57.4)
>36 months	92(42.6)
Working Unit	
Emergency	8(3.7)
Medical	36(16.7)
Surgical	10(4.6)
Post-Op	20(9.3)
ICU	34(15.7)
Obstetric	26(12)
Pediatric	22(10.2)
Dialysis	18(8.3)
Ortho	16(7.4)
Cabin	6(2.8)
OT	20(9.3)
Inservice/Training	60(27.8)
CPR performed	98(45.4)

Table 2, shows respondent's level of knowledge attitude and practice regarding CPR among nurses, out of 216 respondents, 52.3% respondents had good knowledge while 47.7% respondents had poor knowledge with mean 10.33 and S.D 2.73, 47.7% respondents had positive attitude while 52.3% of respondents had negative attitude with mean 33 and S.D 3.76. Out of 98 respondents regarding practice of CPR 35.7% had poor practice while 64.3% had good practice with mean 7.9 and S.D 1.2.

Table 2. Respondent's level of knowledge, attitude and practice. (n=216)

Domains	Frequency (%)	95% CI	
		Lower	Upper
Level of Knowledge			
Good	103 (47.7)	41.309	54.361
Poor	113(52.3)		
Mean±SD =10.33±2.73			
Level of Attitude			
Positive	113(52.3)	45.63	58.96
Negative	103(47.7)		
Mean±SD=33±3.76			
Level of Practice (n=98)			
Good Practice	63(64.3)	57.91	70.68
Poor Practice	35(35.7)		
Mean±SD=7.9±1.2			

Pearson Chi square test were applied to study association between level of knowledge regarding CPR among nurses of selected hospitals of Bharatpur and sociodemographic variables. There were no statistical significance between level of knowledge regarding age and work experience. However, there was statistical significance relationship between qualification (P=0.001), inservice education/ training(P=<0.001) and CPR performed (P=<0.001) and knowledge regarding CPR (Table 3).

Pearson Chi square was applied to study association between level of attitude regarding CPR and selected socio-demographic variables. There was statistical significant relationship between in-service education/training (P=0.003)and CPR performed(P=<0.001) (Table 4).

Likelihood ratio, Pearson Chi and Fisher exact square test were applied to study association between level of practice regarding CPR among nurses of selected hospitals of Bharatpur and selected socio-demographic variables There were no association between level of practice regarding age, qualification, working experience, working unit, inservice education and CPR performed (Table 5).

Table 3. Association between level of knowledge and sociodemographic variables. (n=216)				
Variables	**Level of knowledge**		**Chi-Square**	**p-value**
	Poor	**Good**		
Age				
20-30	110(90.2)	89(94.7)	1.494	0.222**
31-40	12(9.8)	5(5.3)		
Qualification				
PCL Nursing	93(82.3)	65(63.1)	10.107	0.001**
Bachelor in Nursing	20(17.7)	38(36.9)		
Work Experience (in months)				
≤36 months	69(56.6)	55(58.5)	0.083	0.773**
>36 months	53(43.4)	39(41.5)		
Working Unit				
Medical	18(15.9)	18(17.5)	20.42	<0.001**
Obstetric and Gynaecology	17(15%)	9(8.7%)		
Emergency+ICU+Post-op	19(16.8)	43(41.7)		
OT+Surgical+Cabin	20(17.7)	16(15.5)		
Pediatric +Dialysis +Ortho	39(34.5)	17(16.5%)		
Inservice education/training	19(16.8)	41(39.8%)	14.198	<0.001**
CPR performed	35(31%)	63(61.2%)	19.817	<0.001**

Likelihood ratio (*), Pearson Chi Square (**), Fisher exact test (***)

Table 4. Association between level of attitude and sociodemographic variables. (n=216)				
Variables	**Level of attitude**		**Chi Square**	**p-value**
	Negative	**Positive**		
Age				
20-30	31(88.6)	107((94.7)	2.143	0.143
31-40	11(10.7)	6(5.3)		
Qualification				
PCL Nursing	79(69.9)	79(69.9)	17.708	0.261
Bachelor in Nursing	24(23.3)	34(30.1)		
Work Experience (in months)				
≤ 36 months	61(59.2)	63(55.8)	0.266	0.606
≥ 36 months	42(40.8)	50(44.2)		
Working Unit				
Medical	20(19.4)	16(14.2)	7.675	0.104
Obstetric and Gynaecology	14(13.6)	12(10.6)		
Emergency + ICU + Post op	21(20.4)	41(36.3)		
OT+ surgical+ cabin	21(20.4)	15(13.3)		
Pediatric+dialysis+ortho	27(26.2)	29(25.7)		
Inservice education/training	19(18.4)	41(36.3)	8.545	0.003
CPR performed	34(33)	64(56.6)	12.187	<0.001

Likelihood ratio (*), Pearson Chi Square (**), Fisher exact test (***)

Table 5. Association between level of practice and sociodemographic variables. (n=98)				
Variables	**Level of Practice**		**Chi Square**	**p-value**
	Poor	**Good**		
Age				
20-30	31(88.6)	56(88.9)	2.34	0.96
30-40	4(11.4)	7(11.1)		
Qualification				
PCL Nursing	27(77.1)	38(60.3)	2.852**	0.091
Bachelor in Nursing	8(22.9)	25(39.7)		
Work Experience (in months)				
≤ 36 months	18(51.4%)	31(49.2)	0.44**	0.833
> 36 months	17(48.6)	32(50.8)		
Working Unit				
Medicine	2(5.7)	12(19%)	4.536	0.54
Obstetric and Gynaecology	4(11.4)	4(6.3)		
Emergency+ ICU+Post-op	17(48.6)	31(49.2)		
OT+surgical + cabin	4(11.4)	6(9.5)		
Pediatric + dialysis + ortho	8(22.9)	10(15.9)		
Inservice education/training	15(42.9)	28(44.4)	0.023**	0.879
CPR performed	35	63		

Likelihood ratio (*), Pearson Chi Square (**), Fisher exact test (***)

DISCUSSION

The study shows that, majority of respondents 92% were between the age group 20-30 years which is different from a study on examining Nurses' Theoretical Knowledge, Attitude, and Practice of Cardio-pulmonary Resuscitation in Hospitals and Primary Health Care Settings in Oman, more than half of the participants (58.3%;n=148) were belonged to the age group of 31-40 years.[12] The study shows that, the majority 73.1% of respondents were of Proficiency Certificate Level (PCL) which is similar to the study "Knowledge Regarding Basic Life Support Among nurses of a Tertiary Level Hospital of Nepal", where majority 52% of respondents were from PCL. Majority of respondents were from medicine ward 16.7% which was similar to the study "Knowledge of nurses towards CPR in a tertiary Care teaching hospitals in Nepal" where majority of respondents 11.43% were from medicine ward.[13] About, 75.9% knew the compression/ ventilation ratio for an adult victim, 40.7% knew the correct rate of compression in a minute, and which is less than 77% and 46%, respectively however 68.5% knew the depth of compression in adults during CPR and 63.9% knew the correct answer how long should a pulse check last which is greater than 64% and 63.9% respectively however some result differ from the current study that is 64.4% had knowledge on correct hand position during CPR which is less than 82% in study "Examining Nurses' Theoretical Knowledge, Attitude, and Practice of Cardio-pulmonary Resuscitation in Hospitals and Primary Health Care Settings in South Sharqiyah, Sultanate of Oman".[12] A study to assess knowledge and practice of basic life support among nurses working in tertiary care hospital, New Delhi, India, 19% had lack of knowledge on carotid pulse assessment[14] compared to the current study where 76.9% had the knowledge on carotid pulse assessment and 90% had knowledge on correct hand position during CPR which is differ from current study that is 63% had knowledge on correct

hand position. The study "Knowledge, Attitude and Practice of Cardiopulmonary Resuscitation Among Nurses in Babcock University Teaching Hospital in Ilishan-Remo, Ogun State, Nigeria" has supported the study. Majority of respondents 35.2% disagree to the statement doctors should be responsible for initiating CPR which is supported by in which majority 68.9% had disagree to the statement however, the study did not support the statement inadequate supply of CPR equipment discourages most of nurses from practicing CPR where 88.9% had strongly agree which differ from the current study where 37.5% disagree to the statement and 45.9% disagree to the statement it is futile to perform CPR for elderly patient is different compared to current study in which 41.2% are neutral to the statement. [15] Among 216 respondents, 45.8% strongly agree to the statement CPR is part of nursing role, 45.8% agree to the statement mastering CPR intervention should be mandatory to all nurses, 68.1% strongly agree to the statement it is important to provide in-service education and training for nurses which is supported by the study "Examining Nurses' Theoretical Knowledge, Attitude, and Practice of Cardio-pulmonary Resuscitation in Hospitals and Primary Health Care Settings in South Sharqiyah, Sultanate of Oman" in which 65.9%, 58.8% and 60.6% had positive attitude to the statements respectively.[12] The study is also supported by the study "Knowledge and Skills of CPR among Critical Care nurses in Kuwaiti Hospitals" conducted which indicates moderate skill level 56.4% and low level of knowledge 15.7% regarding CPR.[16]Similarly, a study had also supported the present study on their study knowledge and practice of nurses regarding CPR in private tertiary care hospital, Pakistan with its result of poor practice of CPR compared to the knowledge since only 98 subjects out of 216 respondents had performed CPR in current study.[17] Contrary to this findings in their research on "knowledge attitude and practice of CPR among nurses in Babcock University Teaching Hospital in Ogun state Nigeria" showed 74.9% of respondents had good knowledge of CPR, with negative attitude however this study had supported the good level of practice with the present study.[15] Current study is similar to the study "Knowledge of Cardiopulmonary Resuscitation among Nurses In Public Hospital Lahore Pakistan" in their study conducted majority nurses had poor knowledge regarding CPR.[17] Similarly, a study conducted in Ghana on knowledge and practice of CPR among nurses at Greater Accra Regional Hospital and Legon Hospital had also supported the author's study nurses had low knowledge and had fair practice.[7] The result on Knowledge of nurses towards CPR in a tertiary care teaching hospital in Nepal, also supported the present study, their study showed that majority of nurses had low knowledge.[13] Overall participants have poor knowledge regarding most of the CPR aspects. The question that was answered correctly by most of participants was question 1 i.e. the meaning of CPR 99.5% had answered correctly while the least number of participants 29.6% had their correct answer to the question Cycles to be performed before switching role during two rescuer. American Heart Association (AHA) suggests that training regarding the CPR for nurses and physicians is needed every 2 years. The current study revealed that CPR knowledge is associated with qualification, working unit, in-service education, CPR-performed rather than working experience and age of the respondents. The study however had revealed that despite having inadequate knowledge majority of nurses had positive attitude and good practice.

Limitation

This study was conducted in Bharatpur Hospital and College of Medical Science Teaching Hospital, Chitwan and the sample size was 216. The study was conducted only on nurses.

CONCLUSIONS

The current study conducted in selected hospitals of Bharatpur among 216 nurses. In general, majority of nurses showed inadequate level of knowledge regarding CPR, positive attitude and good practice among the nurses who have practiced CPR.

Recommendation

Analyzing the findings of the study, it is suggested

for the need of regular CPR training including the in-service education. There should be an audit like drills to assess CPR practice and further studies to examine knowledge, attitude and practice among nurses working in hospitals and other settings.

ACKNOWLEDGEMENT

We are thankful to all the nurses for their valuable participation in this research during data collection.

Conflict of Interest: None

REFERENCES

1. Cardiac Arrest—Critical Care Medicine. (2019). MSD Manual Professional Edition. Retrieved July 6, 2021, from https://www.msdmanuals.com/professional/critical-care-medicine/cardiac-arrest-and-cpr/cardiac-arrest
2. American Heart Association's 2020 CPR Updates—CPR Training. (2020, January 17). CPR Educators, Inc. https://cpreducatorsinc.com/american-heart-associations-2020-cpr-updates/
3. Yan, S., Gan, Y., Jiang, N. et al. (2020) The global survival rate among adult out-of-hospital cardiac arrest patients who received cardiopulmonary resuscitation: a systematic review and meta-analysis. Crit Care 24, 61 https://doi.org/10.1186/s13054-020-2773-2
4. Srivatsa, U. N., Swaminathan, K., Sithy Athiya Munavarah, K., Amsterdam, E., & Shantaraman, K. (2016). Sudden cardiac death in South India: Incidence, risk factors and pathology. Indian Pacing and Electrophysiology Journal, 16(4), 121–125. https://doi.org/10.1016/j.ipej.2016.10.004
5. Chaudhary, A., Kadel, T., Wasti, H., & Shrestha, P. K. (2020). Spectrum of sudden cardiac death in Nepalese population—An institutional based study. Sri Lanka Journal of Forensic Medicine, Science & Law, 11(2), 26–33. https://doi.org/10.4038/sljfmsl.v11i2.7813
6. Mal, P. R., & Suneel, P. (2019). Out-of-Hospital Cardiac Arrest (OHCA): A Critical Healthcare Problem. 8.
7. Ofori, D. (2019). Knowledge and Practice of Cardiopulmonary Resuscitation (Cpr) Among Nurses at Greater Accra Regional Hospital and Legon Hospital. 66.
8. Dagnew,K. Tilahun,L. (2020) Study on Knowledge, Attitude and Practice of Cardiac Resuscitation Among Nursing Professionals at Dessie Referal hospital, North East Ethiopia. Int. J. Nur. Edu. and Research. 2020; 8(4):478-482. doi: 10.5958/2454-2660.2020.00105.2
9. Akram,F. Perveen,K. Afzal,M. Gilani,SA. and Musadaq,M. (2020) Study on Knowledge, Attitude and Practice of Cardiac Resuscitation Among Nursing Professionals at Dessie Referal hospital, North East Ethiopia.
10. Bajracharya,S. and Nagarkoti,L. (2016) Knowledge regarding Basic Life Support Among Nurses of a Tertiary Level Hospital Nepal; MJSBH Vol 15 Issue 1 Jan- Jun 2016
11. Amatya, M., & Gorkhali, B. (2016). Cardiopulmonary resuscitation: Knowledge amongst Nepalese health personnel. Janaki Medical College Journal of Medical Science, 3(1), 25–30. https://doi.org/10.3126/jmcjms.v3i1.15372
12. Nasri AA, Bulushi AA. Examining nurses' theoretical knowledge, attitude, and practice of cardio-pulmonary resuscitation in hospitals and primary health care settings in south Sharqiyah, sultanate of Oman. Am J Nurs Res. 2020;8(5):577-87.
13. Parajulee, S., & Selvaraj, V. (2011). Knowledge of Nurses Towards Cardio-pulmonary Resuscitation in a Tertiary Care Teaching Hospital in Nepal. Journal of Clinical and Diagnostic Research., 5, 4.
14. Sachdeva, S. (2020). A study to assess knowledge and practice of basic life support among nurses working in tertiary care hospital, New Delhi, India . Nursing & Care Open Access Journal vol.7 issue 2
15. Ihunanya, O. M., Michael, O., Babcock, Bns., Amere, L. T., & Ihunanya, M. (n.d.). Knowledge, Attitude and Practice of Cardiopulmonary Resuscitation Among Nurses in Babcock

University Teaching Hospital in Ilishan-Remo, Ogun State, Nigeria. 10.

16. Alwataifi, N. (2021). Knowledge and Skills of Cardiopulmonary Resuscitation among Critical Care Nurses in Kuwaiti Hospitals. American Journal of Nursing Research, 9, 64–70. https://doi.org/10.12691/ajnr-9-2-4
17. Shah. M, Jan.O, Hussain.A, Gul.T, and Naila. N, (2019) Knowledge and Practice of Nurses Regarding CPR in Private Tertiary Care Hospital Peshawar, KP, Pakistan
18. Akber, N., Ayub, S., Murad, N., Yasmeen, S., Amir, S., & Hanif, M. A. (2020). Knowledge of Cardiopulmonary Resuscitation among Nurses In Public Hospital Lahore Pakistan. American Research Journal of Humanities & Social Science, vol.03, Issue-05, pp 07-14

Citation: Ghimire B, Aryal S, Upadhyay HP. Knowledge Attitude and Practice Regarding Cardiopulmonary Resuscitation among Nurses in Selected Hospitals of Bharatpur, Nepal. IJSIRT. 2023; 1(2): 45-52.