International Journal of Current Research and Review
DOI: http://dx.doi.org/10.31782/IJCRR.2019.11152

Research Article

IJCRR
Section: Healthcare
Sci. Journal Impact Factor: 5.385 (2017)
ICV: 71.54 (2015)

A Study to Assess the Effectiveness of Simulation on Neonatal Basic Life Support Among Nursing Students – A Narrative Review

Ms. Wichamjailiu Ringkangmai[1,*], Mr. Siva N.[2]

[1]M.Sc Nursing 1st Year, Department of Child Health Nursing, School of Nursing Sciences and Research, Sharda University, Greater Noida, Uttar Pradesh; [2]Assistant Professor, school of Nursing science and Research, Sharda University, Greater Noida, Uttar Pradesh

ABSTRACT

Introduction: Neonatal period is characterized by transition to extra uterine life and rapid growth and development. Newborn period, just first 28 days of life, carries the greatest risk of mortality. Despite being less than 2% of total period of under 5 children, the newborn period accounts for over half of under 5 child mortality. Good care therefore not only improves survival of children but lays foundation of optimal log term physical and neurocogitive development.

Aim: The aim of the study is to assess the effectiveness of simulation on neonatal BLS(basic life support) among selected colleges of nursing in Greater Noida , UP. The findings of the study can help the teacher to gain knowledge regarding the effectiveness of simulation on neonatal BLS(basic life support).

Methodology:

Intervention: Simulation of Neonatal BLS(basic life support).

Types of studies: True Experimental study.

Types of participants: Nursing students

Setting: Selected colleges of Greater Noida, UP.

Results: This narrative review result has proved that simulation of neonatal BLS(basic life support) has increased in terms of knowledge and skills among nursing students.

Key Words: Simulation of neonatal BLS (basic life support), Nursing students

INTRODUCTION

Neonatal asphyxia accounts for the major neonatal mortality rate which is a great hindrance in the country health status therefore it is essential for the health team members to have the required knowledge regarding the neonatal BLS (basic life support)**.** Newborn health is the key to child health and survival. In India, neonatal death account for 56% of under 5 and 69% of infant death. First week deaths alone account for 45% of total under 5 deaths. Preterm complications accounts for 35% of all neonatal death and constitutes the most important cause of neonatal mortality. Causes of mortality are birth asphyxia, congenital malformation and sepsis. Almost three forth of all neonatal death occurs among the low birth weight newborn.

Of all the neonatal deaths, about 40% occur within 72 hours and three fourths within one week of birth. Health of the mother and child during pregnancy and childbirth has a profound influence on neonatal outcome. Of the 25 million infants born every year in India, 3-5 % experience asphyxia at birth. Asphyxia is characterized by a progressive hypoxia, hypercapnia, hypo perfusion and acidosis. When an infant is deprived of oxygen an initial brief period of rapid breathing occurs, if the asphyxia continues, the respiratory movements

Corresponding Author:
Ms. Wichamjailiu Ringkangmai, M.Sc Nursing 1st Year, Department of Child Health Nursing, School of Nursing Sciences and Research, Sharda University, Greater Noida, Uttar Pradesh; Contact no.: 2018002125; Email: wichamjailiu@pg.sharda.ac.in

ISSN: 2231-2196 (Print) **ISSN:** 0975-5241 (Online)

Received: 15.06.2019 **Revised:** 09.07.2019 **Accepted:** 26.07.2019

cease and the infants enters into a period of apnoea known as primary apnoea.

Neonatal deaths are a major hindrance for the improvement of survival of children in developing countries. An estimated 4 million babies die in the neonatal period yearly and approximately all of these deaths occur in developing and underdeveloped countries. The need for information on neonatal deaths is increasing because of an increase in the percentage of mortality with a current report of about 40% of global under-five mortality occurs in the neonatal period. World Health Organization defined birth asphyxia as the failure to initiate and sustain breathing at birth. Every newborn should be considered at a high risk of birth asphyxia since most cases of asphyxia cannot be predicted. Although neonatal death is multifactorial, the most important single causes of neonatal deaths are preterm birth, birth asphyxia, sepsis and pneumonia.

An experimental study was conducted at SRM (Sri Ramaswamy Memorial) College of nursing. The students were explained about the nature and purpose of the study and a written consent was obtained from the participants prior to their recruitment in the study. 25 students for interventional group and 25 students for control group sample were randomly selected for this study. Firstly pretest knowledge was assessed from control and interventional group with the help of multiple choice questions on Neonatal BLS (basic life support) were done and it was collected back after 15 minutes. Simulation teaching was given to interventional group only. On the 7th day pos ttest was taken for both the groups and skill was checked for both the group through OSCE (objective structured clinical examination). Then data was collected for analysis. By using student's unpaired t test statistically no significant difference was found in pretest knowledge score in between control and interventional group (t=1.21 , p- value=0.56) and statistically significant difference is found in post test knowledge score between control and experimental group (t=15.37, p value=0.000). Hence it was concluded that the simulation teaching increase the post test knowledge score and psychomotor score of nursing students and simulation teaching is more effective for nursing students. Archana Maurya , (2016)

A quasi experimental study was conducted at Rufaida College of Nursing New Delhi. Data was collected after obtaining formal permission from principal of Rufaida College of nursing, Jamia Hamdard University New Delhi. The sample of 24 students nurses studying GNM nursing 3rd year were selected by total enumerative sampling technique. Data was collected by self-introduction for establishment of rapport with students, provision of conductive environment for data collection; the samples were screened based on inclusion and exclusion criteria, taking informed consent from the participants for the research study. The mean pre test knowledge scores of control group were higher than the mean pre test knowledge scores of experimental group with a mean difference of 0.35. The mean post test knowledge scores of experimental group was higher than the mean post test knowledge scores of control group with a mean difference of (16.1). Therefore it was concluded that the training program on PBLS(paediatric basic life support) on 2015 AHA(American heart association) guidelines is more effective in enhancing the knowledge and practice of 3rd year GNM nursing students regarding PBLS(pediatric basic life support). (Swati Sharma (2017)

Another quasi experimental study was conducted at college of nursing Sultan Qaboos University. This study was to evaluate the effectiveness of simulation in critical care nursing among students in a public university. A single quasi experimental design was used to evaluate the effectiveness of simulation compared to videos and high fidelity simulation. A convenient sample of 100 students in the critical care nursing course was selected in the year 2015-2016. Standardized simulation instruments were used to measure the knowledge and performance and ANOVA and t test was used to analyze the findings. Mean overall satisfaction was higher among students exposed to high fidelity students than those students with video. Hence the study confirms that the overall satisfaction and self confidence was higher among the students exposed to high fidelity simulation students compared to the students exposed with video learning. (Melba Sheila D'souza 2017)

Experimental research study was conducted at Afyonkarahisar city of Turkey health training school. This study aimed to detect the overall evaluation of nursing students towards simulation throughout the practice education and to reveal their learning styles in relation to certain individual features. The study included 3rd yr nursing students in nursing department in Afyonkarahisar city of Turkey. An instructor demonstrated the practice steps by doing with a group of 10-12 students each week after theoretical lesson by means of utilizing simulation in the related topics. The questionnaire was administered to the students. According to the results 70.9% of the participants stated that laboratory setting along with simulation was suitable for education. (Yasemi Celik (2015)

A cross sectional study was conducted in private medical college Mangalore, Karnataka India. This study was conducted to explore the perception of medical students towards simulation-based learning (SBL). A total of 247 participants from fourth, sixth, eighth semester and internship were chosen by convenience sampling method. Attitudinal data on perception towards simulation-based learning were collected using a self-administered questionnaire with responses in a 5-point Likert's scale. The mean age of students was 21.3 (standard deviation 1.9) years, and males constituted 55.5% (137/247). Most participants 72.5% (179/247) had favour-

able perceptions of simulation based learning , with scores of 92-118 out of a possible 118 points. Favourable perception towards simulation based learning was seen significantly more among female students (P = 0.04) and senior MBBS students of sixth and eighth semesters (P = 0.05). Nearly, all students (90.7%; 224/247) agreed that simulation supports the development of clinical skills. As many as 29.6% (73/247) agreed that real patients might be replaced with simulated patients in practical examinations. Hence it was concluded that simulation based learning was perceived as favourable by a large number of participants in this study indicating a bright prospect for its implementation in the medical curriculum**.** (S Jindal 2013)

MATERIAL AND METHOD

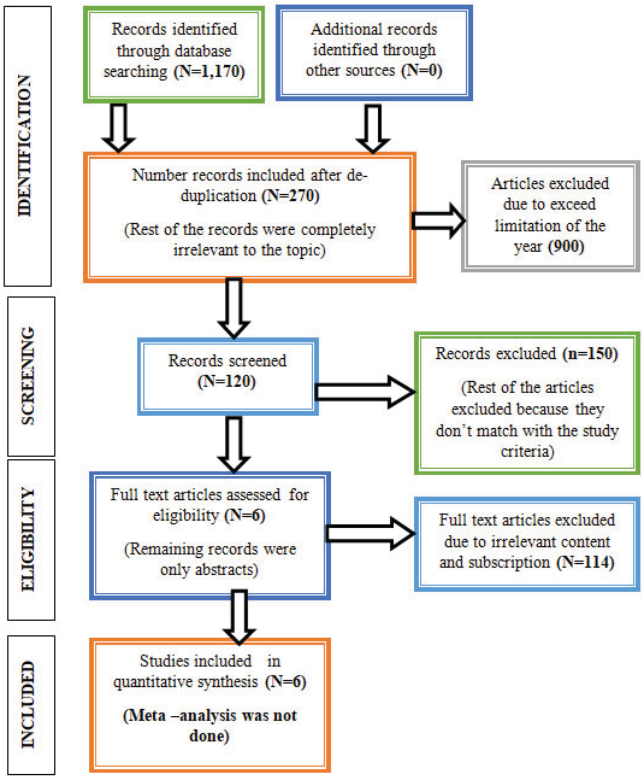

Figure 1: Prisma flow diagram of narrative review.

RESULTS

The systematic search was conducted by formulating the terms separately and in integration with all synonyms, also according to the database. Likewise, a manual Google scholar search was undertaken using the keywords and search synonyms from already articles. An addition of 6 articles was found in the database. Initial search recovers 1270 articles over which 180 articles were selected manually. 100articles were rejected as a result of replication in the database. Replication was removed and reviewed 80 articles for acceptability. 74 more studies were rejected because of unreachable of the full text. Hence 6 articles were screened which includes quantitative study.

DISCUSSION

These findings are supported by a study conducted by Archana Maurya an experimental study conducted. An experimental study was conducted at SRM (Sri Ramaswamy Memorial) college of nursing. The students were explained about the nature and purpose of the study and a written consent was obtained from the participants prior to their recruitment in the study. 25 students for interventional group and 25 students for control group sample were randomly selected for this study. Firstly pre-test knowledge was assessed to the control and interventional group with the help of multiple choice questions on Neonatal BLS were done and it was collected back after 15 minutes. Simulation teaching was given to interventional group only. On the 7th day post-test was taken for both the groups and skill was checked for both the group through OSCE (objective structured clinical examination). Then data was collected for analysis. By using student's unpaired t test statistically no significant difference was found in pre-test knowledge score in between control and interventional group (t=1.21 , p- value=0.56) and statistically significant difference is found in post-test knowledge score between control and experimental group(t=15.37, p value=0.000). Hence it was concluded that the simulation teaching increase the post-test knowledge score and psychomotor score of nursing students and simulation teaching is more effective for nursing students.

CONCLUSION

There was a significant increase in knowledge and skills related to simulation of neonatal BLS(basic life support) among the nursing students. Therefore the method of teaching by the means of simulation must be initiated in the academic and hospital setting for the health care professionals.

Sourse of Funding: Self-funding

Conflict of Interest: Nil

Ethical Clearance:

- Prior permission was obtained from the Dean of school of nursing sciences and research , Sharda university
- Permission was also obtained from the university ethical committee
- Informed written consent was taken from each participant under the study. Objective of the study was maintained with honesty, privacy confidentiality and anonymity.

ACKNOWLEDGEMENT

We would like to thank the authors whose works have cited and included in this study such as Archana Maurya, Swati Sharma, Melba Sheila D' souza, Yasemi Celik, AL Kadi AS Donnon T, S Jindal and N Srivastava. We acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. We are also grateful to authors / editors / publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

REFERENCES

1. Archana Maurya (2016). A study to assess the effectiveness of simulation teaching of neonatal BLS among nursing students. International Journal of Science and Research volume 4 issue 1 page no 2319-3462.
2. Swati Sharma, Smriti Arora, Urmila Bhardwaj (2017) A quasi experimental study to assess the effectiveness of training programme on knowledge and practice regarding pediatric Basic life support based on 2015 AHA guidelines among student nurses in a selected college of nursing, in Delhi, India. International Journal of Current Research volume 9 issue 05 page no 44935-49939.
3. Melba Sheila D' souza, Ramesh Venkatesaperumal (2017). A study to evaluate the effectiveness of simulation in critical care nursing among students in a public university. Pubmed volume 6 issue 3 page no 2864-3056.
4. Yasemi Celik, Yesim and Ceylantekin and Ibrahim Kiliv (2015). A study to detect the overall evaluation of nursing students towards simulation throughout the practice education. Journal of Nursing and Allied Health Science, volume 9 issue 7 page no 1862-174.
5. AL Kadi AS Donnon T (2013). A study to assess the effectiveness of laparoscopic simulators on medical students. Journal of Medical Science and Clinical Research volume 4 issue 2 page no 2893-2898.
6. S Jindal and N Srivastava (2013). A study to assess the perception of medical students in simulation based learning. Journal of Medical Science and Clinical Research. Volume 12 issue 8 page no 1864-1872.