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Effectiveness of simulation based training programme regarding paediatric basic life support on knowledge and skill of nursing students

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Abstract
The present study investigated the effectiveness of simulation based training programme regarding paediatric basic life support on knowledge and skill of nursing students in selected College of Nursing, Kottayam. A quantitative, pre experimental one group pre-test design was used for this study. The conceptual framework used was Modified Daniel L. Stufflebeam's Evaluation Model. Forty-five samples were selected by simple random sampling from Govt. College of Nursing, Kottayam. Tools used were socio personal data sheet, structured knowledge questionnaire for assessing knowledge and paediatric basic life support skill assessment checklist for assessing skill of nursing students. Simulation based training programme regarding paediatric basic life support was given after pre-test for three consecutive days for the samples in three groups. After one week, reinforcement of the training was given to each group of students. A post test was conducted after 15 days of simulation based training programme for each group of students. The results of the study revealed that, simulation based training programme had statistically significant effect on knowledge ($p<0.05$) and skill ($p<0.05$) of nursing students regarding paediatric basic life support. Study also revealed that there was no significant correlation between knowledge and skill of nursing students regarding paediatric basic life support. As a conclusion, simulation based training programme is effective in improving the knowledge and skill of nursing students regarding paediatric basic life support.

Keywords: Knowledge, skill, simulation based training programme

1. Introduction
Cardiac arrest is a devastating event, which has extensive negative impact on the health care system [1]. Cardiac arrest is an uncommon event in children (9 per 100.000 children per year) often with a poor outcome [2]. The knowledge of BLS is a major determinant in the success of resuscitation and plays a vital role in the final outcome of acute emergency situations [3]. Generally nursing students are dealing with live patients in clinical settings to attain the essential skills. But in paediatric settings the students lack their opportunity to become master in lifesaving procedures such as PBLS on real victims. Simulation Based Training (SBT) enhances learning process through facilitating active participation of students as well as enabling them to apply their theoretical knowledge into practice. Moreover, it provides students with opportunities for repetition of a skill more frequently, gain feedback on specific cognitive or psychomotor tasks, evaluation and reflection without the risk of causing harm to the patient. Furthermore, SBT offers many chances to students for acquisition and refinement of behavioural skills such as communication and working in a team. On top of that, the SBT proved to have a powerful positive effect on student's achievement outcomes and competency level as well as it improves their self efficacy regarding performance of skills especially in emergencies [9].

2. Objectives
1. To determine the skill of nursing students in performing paediatric basic life support.
2. To evaluate the effectiveness of simulation based training programme on skill of nursing students in performing paediatric basic life support.

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3. Materials and Methods

Quantitative approach was used for the study. Research design selected for the study was pre experimental one group post-test design. Simple random sampling technique was used to select the study subjects. Students undergoing second year BSc Nursing course in Government College of Nursing, Kottayam were included in this study. Inclusion criteria of the present study was students undergoing second year BSc Nursing course and those who are willing to participate in the study. Tools and techniques used to collect data in the present study were the following: Socio personal data sheet, structured knowledge questionnaire regarding paediatric basic life support and paediatric basic life support skill assessment check list. Initially good rapport was established with participants and they were informed about the purpose of the study and assured the confidentiality of the responses. After obtaining written consent from the participants, they were instructed to fill the socio personal data sheet and the structured knowledge questionnaire regarding paediatric basic life support. The investigator assessed the skill of each student in performing paediatric basic life support using paediatric basic life support skill assessment checklist (pre-test).

After completion of pre-test, the investigator divided all the samples into three groups and conducted simulation based training programme consisting of a video assisted teaching programme regarding paediatric basic life support and demonstration of paediatric basic life support using infant CPR manikin followed by hands own training for each group students during the next 3 consecutive days. After one week reinforcement of the training was given to each group of students. A post test was conducted after fifteen days of simulation based training programme for each group of students. They were instructed to fill the same structured knowledge questionnaire regarding paediatric basic life support. The skill of each student was observed and documented using the same paediatric basic life support assessment checklist. On completion of the data collection process the students were appreciated for their participation and for spending their valuable time. Collected data were analyzed using descriptive and inferential statistics.

4. Results

4.1 Socio personal data of nursing students

Among the study participants, 66% were in the age group of 20-21 years and 33.3% of the nursing students were in the age group of 18-19 years. Majority of the nursing students were females (93.3%) and only 6.7% were males. With regard to the previous source of information regarding PBLS, 80% of nursing students had class room teaching as the source and 20% had from online information resources. Majority (73.3%) of nursing students had no previous experience on PBLS and only 15.6% had witnessed PBLS.

4.2 Skill of nursing students in performing paediatric basic life support

Table 1: Frequency distribution and percentage of nursing students regarding skill in performing paediatric basic life support, (N = 45)

Skill	F	%
Good	0	0
Poor	45	100

Table 1 depicts that all the participants (100%) had poor skill in performing PBLS.

4.3 Effectiveness of simulation based training programme on skill of nursing students in performing paediatric basic life support

Table 2: Mean, standard deviation and t value of pre-test and post-test skill scores of nursing students regarding paediatric basic life support, (N=45)

Group	Skill			
	Mean	SD	T	p
Pre test	9	0.37	31.82	0.000
Post test	14.64	1.07		

Table 2 depicts that the obtained t value of pre test and post test skill score was 31.82 which was significant at 0.05level. This shows that there was statistically significant difference in the skill of nursing students in performing PBLS after SBT programme. Hence the null hypothesis was rejected and it was inferred that SBT programme was effective in improving the skill of nursing students in performing PBLS.

5. Conclusion

Based on the findings only 20% of nursing students had average knowledge and 80% had poor knowledge regarding PBLS and all the participants (100%) had poor skill in performing PBLS before SBT programme. SBT programme was effective in improving the knowledge and skill of nursing students regarding PBLS. No significant correlation was found between knowledge and skill of nursing students regarding PBLS. The present study highlighted the need of training programme in improving knowledge and skill nursing students regarding PBLS. SBT is an innovative teaching method in nursing curriculum which helps the students to improve their knowledge and skill. Adequate knowledge and skill may increase confidence and self-competency of the nursing students.

5.1 Conflict of Interest

Not available

5.2 Financial Support

Not available

6. References

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