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EFFECTIVENESS OF SIMULATION ON PEDIATRIC ADVANCED LIFE SUPPORT: A NARRATIVE REVIEW

Education

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ABSTRACT

Introduction: The capacity to react rapidly and successfully to a heart failure circumstance lay on attendants and restorative workforce in the crisis life-sparing system of cardiopulmonary revival so, Pediatric Advanced Life Support (PALS) is a two days course intended to grant the learning and reasoning abilities required for a group based way to deal with the revival of critically ill and harmed child. It was started by the American Heart Association and the American Academy of Pediatrics in the late 1980s. Simulation has been extensively received as a preparation and appraisal instrument in therapeutic and nursing training. It is particularly valuable as a subordinate for teaching technique needed to manage rare or critical events, such as cardiopulmonary arrest and respiratory arrest.Quality of cardiopulmonary resuscitation (CPR) influences the impact of cardiac arrests.

Objective: To find the effectiveness of Pediatric Advanced Life Support training utilization on psychomotor & cognitive skills performance.

Methods: PubMed and EBSCO were scanned for the effectiveness of Simulation on Pediatric Advanced Life Support reviews that is centering till 2017. Search technique particular to every database was utilized.

Results: Out of 13 articles, 7 research studies supported that Simulation has been generally adopted as a preparation and appraisal tool in Medical & Nursing education as High-Fidelity Simulation on Pediatric Resuscitation enhanced Pediatric Resident intellectual information, procedural capability, and comfort.

Conclusion: The review concludes that Pediatric Advanced Life Support was effectively conveyed to an expansive number of healthcare providers in different professional groups with great accomplishments and high participant satisfaction. It significantly expands participant's intellectual information, procedural capability, and aptitudes.

KEYWORDS

Effectiveness, Simulation, Pediatric, Advanced, Life Support.

1. INTRODUCTION:

The capacity to react rapidly and successfully to heart failure and respiratory failure circumstance lay on attendants and medical personnel in the emergency life-support system so, Pediatric Advanced Life Support (PALS) is a two day course expected to delivered the information and aptitude skills required for a group based way to deal with resuscitation of critically ill and injured children. It was started by the American Heart Association with the collaboration of American Academy of Pediatrics in the late 1980s (Waisman Yehezkel, Amir Lisa, Mor Meriav et.al 2005). It is evaluated that children younger than 18 years incorporate 10-20 percent of emergency medical cases. This restricted exposure to pediatric critical cases, especially in less densley populated rural areas, can lead to decline in Pediatric Advanced Life Support aptitude. To reduce this deterioration in aptitude, the American Heart Association has built up the Pediatric Advanced Life Support course for healthcare professional. The standard of re-training programmes in rural areas can be troublesome because of surpulus in qualified educators and long distances.Possible solution to the problem of rural connection to Pediatric Advanced Life Support educators is to delivered re-training for geographically disengaged providers via video conferencing, High-fidelity simulation is also getting acceptance in medical preparation because of its security, reproducibility, and simplicity of simulating critical situation (Mills David M., Wu Chang L., et.al 2012).

1.1 Aim:

The aim of this review is to find the effectiveness of Simulation on Pediatric Advanced Life Support.

1.2 Objective:

To find the effectiveness of Pediatric Advanced Life Support training utilization on psychomotor & cognitive skills performance.

2. METHODOLOGY:

2.1 Search Strategy Methods:

The effectiveness of simulation on PALS was selected as the area of interest and a search was directed of the online database. PubMed and EBSCO, to retrieve quantitative research article published till 2017.Only English study was included. The search term used in this review were Effectiveness, Simulation, Pediatric, Paediatric, Child, Advanced, Life support.The investigations were directed at various nations, for example, Israel, United States, United Kingdom, Australia, Netherlands.

2.1.1 Search Strategy

Simulation [All Fields]"pediatrics"[MeSH Terms] OR Pediatric[Text Word]advanced[All Fields]("life"[MeSH Terms] OR life[Text Word]) AND support[All Fields])

2.1.2 Types of Interventions:

Lecture, Skill stations, Instruction Performance, Interactive video-conferencing, Questionnaire, Observational method.

2.1.3 Types of Studies:

Case-control study, Prospective descriptive study, Prospective observational study, Prospective randomized trial, Cohort study.

2.1.4 Type of Participants:

Family Medicine Resident, Medical, Paramedical Personnel, Consultant, Senior Nurse and Pediatric Residents.

2.1.5 Settings:

Academic Institution, Hospital, Medical University

2.1.6 Outcomes:

The effectiveness of Simulation on Pediatric Advanced Life Support.

3. RESULT

Table 3.1. Data Extraction table:

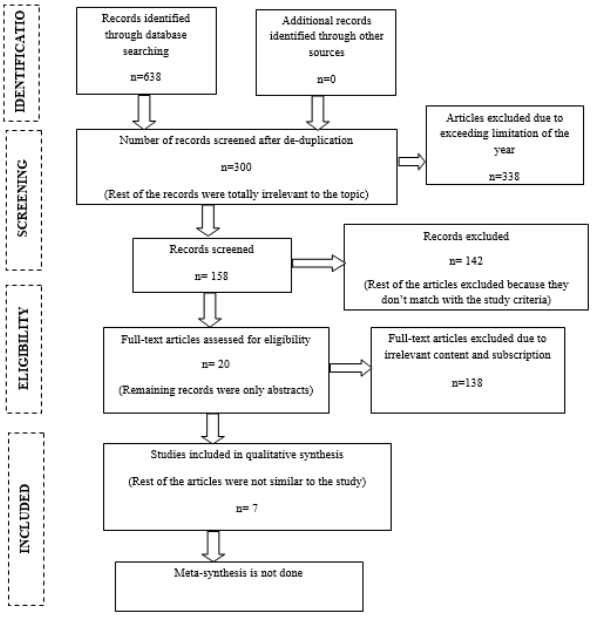
Author and Year	Research Design	Finding of the study
Yehezkel Waisman et.al October 2005	Cohort study	Pediatric Advanced Life Support (PALS) was effectively conveyed to a vast number of healthcare providers in different professional groups with great accomplishments and satisfaction. It significantly expanded participant's knowledge of Pediatric Resuscitation.

Douglas L.et.al 14 May 2008	Prospective randomized trial	No huge differences were recognized among conveyance techniques for upgrading learning, psychomotor expertise execution, or certainty at the finish of the course.
David M. Mills et.al 2012	Case-control study	In this study, it uncovers that High fidelity simulation on child Resuscitation training upgraded Pediatrician's intellectual learning, procedural capability, additionally expanded in real-life resuscitation exposure .
James M.Geard et.al June 2011	Experimental	In this study, it revealed that simulation training is beneficial for teaching PALS procedures to family medicine residents.
Nigel McBeth Turner et.al 15 October 2006	Prospective descriptive study	The Advanced Pediatric Life Support course has a vital effect on apparent self-efficacy yet this isn't identified with an expansion in the recurrence of utilization of the attitudes accomplishement on the end of course, mostly on the ground that opportunity for high use was deficient.
Muhammad Arshid et.al 19 February 2009	Prospective observational study	The nature of CPR performance was minimal during Paediatric resuscitation training and team leader's had slight consideration of this imperfection.
Allah Eman El. et.al Jan. - Feb. 2017	Quasi-experimental research	There was a highly statistically significant improvement in nursing students' performance level regarding advanced CPR using SimMan versus traditional manikin.

3.2 Delivery of Interventions:

The efficient search was conducted by framing the terms separately and in combination with all equivalent words, likewise as indicated by the database.Initial search retrieved 638 articles over which 300 articles were selected manually.Duplicates were removed and reviewed 200 articles for eligibility.142 articles were rejected due to duplications in two databases.138 more review were rejected because of inaccessibility of full content. Subsequently, 7 articles were screened which incorporates quantitative study.

3.3 PRISMA FLOW CHART



3.4 Major findings:

- The available literature refines to get 7 quantitative.
- In this review 3 studies show that Pediatric Advanced Life support was effectively conveyed to a huge number of healthcare experts in different professional groups with great achievements, high participant's fulfillment and significantly increased participants' information of Pediatric Resuscitation.
- In this review, 1 study shows that Pediatric Advanced Life support re-training delivered through live, two sided video-conferencing was as fruitful as the same training conveyed in a face-to-face technique on Pediatric Advanced Life support knowledge, psychomotor capability, and resuscitation aptitude.
- In this review, 1 study shows that High Fidelity Simulation on Pediatric resuscitation training enhanced Pediatrician learning & procedural capacity, also reported expanded in real-life resuscitation experiences and similar procedures.
- The impact of the Advanced Pediatric Life Support course on observed self-efficacy for resuscitation aptitudes and its relationship to the recurrence of utilization of abilities, the finding of study demonstrate that Advanced Pediatric Life Support course has a basic outcome on apparent self-efficacy, however, this isn't identified with an expansion in the recurrence of utilization of the abilities learned on the course.
- In this review, 1 study demonstrate that there was a perfect correlation between student's total knowledge and practice scores in both groups so there was an exceptionally measurably huge change in nursing student's performance level regarding advanced CPR using SimMan versus Traditional manikin.

4. DISCUSSION:

The quantitative studies on the effectiveness of Simulation on Pediatric Advanced Life Support directed in diverse countries, such as Israel, United States, United Kingdom, Australia, and Netherland and presumed that PALS was successfully delivered to a huge number of healthcare experts in different professional groups with very great accomplishments and high participant's satisfaction.

David M. Mills, Daniel C.Williams et.al conducted a systematic review on Simulation training as a Mechanism for Procedural and Resuscitation Education for Pediatric Residents, 25 full-text articles were evaluated. This study inferred that simulation is an effective method for procedural and resuscitation training and helps to apply skills learned in actual patients care performance.

4.1 Importance of education

Many healthcare professionals experience a high level of anxiety and fear about being associated with cardiopulmonary resuscitation (CPR) due to the lack of confidence in their knowledge and aptitude, and to manage and operate equipment appropriately in timely during cardiopulmonary resuscitation (CPR) so, Simulation on Pediatric Advanced Life Support will help to reduce anxiety arises from those procedures and increase knowledge and skills of healthcare workers.

4.2 Future significance:

Simulation on Pediatric Advanced Life Support furnishes the student with an opportunity to enhance their skill, capacity and confidence levels with the task being performed.

4.3 Limitation

- Computerized databases were limited
- Limited to Simulation on Pediatric Advanced Life Support
- Limited to last 13 years.

5. CONCLUSION:

The review concludes that PALS was effectively conveyed to a huge number of health care providers in different professional groups with great accomplishments and high participant satisfaction. It significantly improved participant's cognitive information, procedural capability, and comfort.

References

1. Waisman Yehezkel, Amir Lisa , Mor Meriav et.al Pediatric Advanced Life Support (PALS) Courses in Israel: Ten Years of Experience, IMAJ 2005;7:639-642
2. Weeks Douglas L., Molsberry, Dianne M. Pediatric advanced life support re-training by video-conferencing compared to face-to-face instruction: A planned non-inferiority trial doi:10.1016/j.resuscitation.2008.05.008.
3. Mills David M., Wu Chang L., et.al, High-Fidelity Simulation Enhances Pediatric Residents' Retention, Knowledge, Procedural Proficiency, Group Resuscitation Performance, and Experience in Pediatric Resuscitation, doi:10.1542/hpeds.2012-0073

4. Gerard James M., Thomas Scott M. et.al The Effect of Simulation Training on PALS Skills Among Family Medicine Residents, JUNE 2011.
5. Turner Nigel McBeth, Dierselhuis Miranda P., Draaisma Jos M.Th. et.al The effect of the Advanced Paediatric Life Support course on perceived self-efficacy and use of resuscitation skills, doi:10.1016/j.resuscitation.2006.10.018
6. Arshid Muhammad, Milly Lo Tsz-Yan, Reynolds Fiona, Quality of cardiopulmonary resuscitation (CPR) during pediatric resuscitation training: Time to stop the blind leading the blind, doi:10.1016/j.resuscitation.2009.02.017
7. Allah Eman El., Abd-Allah Kamelia F., Abd El Sapour Mahmoud, Effect of Educational Program for Cardiopulmonary Resuscitation Using Simman versus TraditionalManikin on 2nd Year Nursing Students' Performance, DOI: 10.9790/1959-0601030109
8. Mills David M., Williams Daniel C., Dobson Joseph V., Simulation Training as a Mechanism for Procedural and Resuscitation Education for Pediatric Residents: A Systematic Review, doi:10.1542/hpeds.2012-0041