ENHANCING KNOWLEDGE AND SKILLS IN CPR: A REVIEW OF STUDIES

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ABSTRACT:

Cardiopulmonary resuscitation (CPR) plays a crucial role in saving lives during emergencies, particularly for infants and children. This abstract provides an overview of several studies focusing on CPR knowledge and training effectiveness among different populations. The studies evaluated include research conducted by Abdrabalreda Al May (2023), Zainab Abidzaid Abid AL-Hadrawy et al. (2021), Xiang Ding et al. (2021), Jatuporn Ounprasertsuk and Chonthicha Wongthong (2020), Ebrahimi H.K et al. (2020), Nisha S, Prajitha V. M. (2022), and Sintayehu Y, Desalew A, Geda B, Tiruye G, Mezmur H, Shiferaw K, et al. (2020). These studies assessed CPR knowledge and training effectiveness among parents, nurses, healthcare professionals, students, and neonatal intensive care unit (NICU) nurses.The study by Abdrabalreda Al May (2023) and Sakinah Al Shayeb (2023) highlighted the need for improved infant CPR education among parents, with over 41% demonstrating poor knowledge. Similarly, Zainab Abidzaid Abid AL-Hadrawy et al. (2021) found that the majority of nurses had poor knowledge regarding neonatal CPR. However, Xiang Ding et al. (2021) demonstrated that a neonatal resuscitation training program significantly increased theoretical knowledge and resuscitation skills among healthcare professionals.Furthermore, Jatuporn Ounprasertsuk and Chonthicha Wongthong (2020) observed a statistically significant improvement in students' CPR knowledge following basic life support training. Ebrahimi H.K et al. (2020) highlighted the effectiveness of simulation-based CPR education in enhancing the knowledge and performance of NICU nurses.Lastly, Nisha S, Prajitha V. M. (2022) emphasized the impact of video-assisted learning programs on parents' understanding of child CPR, while Sintayehu Y, Desalew A, Geda B, Tiruye G, Mezmur H, Shiferaw K, et

al. (2020) identified factors associated with retention of neonatal resuscitatic midwives and nurses.In conclusion, these studies underscore the importance of implementing effective CPR training programs across diverse demographics to improve outcomes during emergencies. Simulation-based education emerges as a valuable tool in enhancing both theoretical knowledge and practical skills in CPR, particularly among healthcare professionals. Further research is warranted to explore innovative educational approaches and address gaps in CPR knowledge and training effectiveness.

INTRODUCTION

Cardiopulmonary resuscitation (CPR) is a critical life-saving skill, especially in cases involving infants and children. Understanding CPR techniques can significantly increase the chances of survival during emergencies. [1]Various studies have been conducted worldwide to assess the knowledge and skills of different groups, including parents, nurses, healthcare professionals, and students, in performing CPR.[2] This article provides a comprehensive summary of several studies focusing on CPR knowledge and training effectiveness among different populations.

LITERATURE

The study conducted by Abdrabalreda Al May (2023) and Sakinah Al Shayeb (2023) aimed to assess the knowledge of infant CPR among parents visiting Maternity and Children Hospital (MCH) in ALAhsa. The researchers used convenient sampling to select 284 mothers, and data were collected through a self-reported questionnaire. The results showed that over 41% of the participants demonstrated poor knowledge of infant CPR, while 58.7% exhibited good knowledge. Those without a family history of cardiac disease showed significantly better knowledge about infants.

Participants who had attended an infant CPR course had a significantly higher knowledge score compared to those who hadn't (76.37% vs. 40.94%, P=0.000). Additionally, participants unwilling to take a short course on infant CPR had a significantly better knowledge score than those willing to join the course (69.69% vs. 57.01%, P=0.021). In conclusion, the study suggests the need to develop programs for teaching infant CPR to mothers across all levels of healthcare facilities.[3]

Another study by Zainab Abidzaid Abid AL-Hadrawy, Rusul Ali Khadim, and Esraa Shaker (2021) also assessed nurses' knowledge concerning cardiopulmonary resuscitation (CPR) for neonates in Al-Zahra Hospital, AL-Forat General Hospital, Al-Hakeem General Hospital, and Al-Manathera Hospital. A purposive sampling technique was employed to select 60 nurses,

and data were collected using a knowledge questionnaire. The overall mea

nurses' knowledge related to neonatal CPR was 1.43, which falls under the category of "pass." This mean suggests that the overall knowledge of nurses about CPR is considered fair. However, the majority of the nurses had poor knowledge concerning cardiac arrest and cardiopulmonary resuscitation.[4]

Xiang Ding et al. (2021) conducted a study on the effectiveness of a neonatal resuscitation training program for healthcare professionals in Zanzibar, Tanzania. The study found that knowledge mean scores before and after the training increased from 9.60 to 13.60 (95% CI: −5.900; −2.099, $p < 0.001$). In 2018, the scores increased from 10.80 to 15.44 (95% CI: −6.062; −3.217, $p < 0.001$). The mean knowledge scores post-training over time were 13.60 in 2017 and 15.44 in 2018. The resuscitation skills performance between the two time periods increased from a mean of 32.26 (SD = 2.35) to a mean of 42.43 (SD = 1.73) (95% CI: −11.402; −8.945, $p < 0.001$). The study concluded that the neonatal resuscitation training program significantly increased theoretical knowledge and resuscitation skills both before and after the two training sessions and also over time after a 9-month period.[5]

Jatuporn Ounprasertsuk and Chonthicha Wongthong (2020) conducted a quasi-experimental study to examine the effectiveness of basic life support models in middle school students at Wat Lat Peng School, Samut Songkhram Province. The results indicated that before receiving basic life support training, the students had a mean score of 6.49 with a standard deviation of 3.01. After the training, their mean score increased to 12.21, and the standard deviation was 2.02. Statistical calculations revealed a t-value of 42.31, and the p-value was less than.001, indicating a statistically significant improvement in knowledge after the training.[6]

Ebrahimi H.K et.al (2020) conducted a quasi-experimental study "Effect of simulation – Based CPR education on the knowledge and performance of neonatal intensive care unit nurses" in Aliasghar Children's Hospital, Tehran, Iran. The study's sample consisted of 21 newborn intensive care unit nurses, and the mean knowledge score before and after schooling was 17.8, but it improved to 32.23 after education. The study concluded that simulation is a useful tool for raising neonatal intensive care nurses' level of expertise. The data was analyzed using SPSS software version 25.The mean knowledge score before and after schooling was 17.8, but it improved to 32.23 after education. The study concluded that simulation is a useful tool for raising neonatal intensive care nurses' level of expertise.In conclusion, the study highlights the importance of implementing effective training programs for healthcare professionals to enhance their knowledge and skills in neonatal resuscitation.

By incorporating simulation techniques into training programs, healthcare pı improve their overall knowledge and performance in this crucial area.[7]

Nisha S, Prajitha V. M. (2022) conducted a pre-test-post-test study to evaluate the impact of a video-assisted learning program on parents of younger children from Olavanna Panchayath, Kozhikkode, in terms of their understanding of child CPR. Data from 50 parents was gathered using a standardized questionnaire. The results indicated that the "t" value achieved, 5.06, was higher than the number 2.043 in the table. The degree of child CPR knowledge possessed by the chosen individuals was found to be significantly correlated with their demographic characteristics, including occupation and level of education.[8]

Sintayehu Y, Desalew A, Geda B, Tiruye G, Mezmur H, Shiferaw K, et al. (2020) conducted a cross-sectional study to evaluate the retention of neonatal resuscitation skills and related factors among Eastern Ethiopian midwives and nurses. Using basic random sample techniques and cluster sampling, 427 midwives and nurses were chosen. According to the study's findings, 11.2% of nurses and midwives were still proficient in performing newborn resuscitations. The following factors were significantly associated with midwives' and nurses' ability to retain their skills: having a bachelor's degree or above (AOR, 4.21 [95% CI: 1.60, 11.00]), having performed neonatal resuscitation at least once (AOR, 3.33 [95% CI: 1.09, 10.15]), and having good knowledge of the procedure (AOR, 3.31 [95% CI: 1.41, 7.73]).[9]

TABLE OF COMPARISON

Study Title and Authors	**Study Objective**	**Sample Size**	**Methodology**	**Key Findings**
Sakinah Al Shayeb, Abdrabalreda Al May (2023)	Assess knowledge of infant CPR among parents	284 mothers	Cross-sectional study, self-reported questionnaire	41% showed poor knowledge; 58.7% had good knowledge
Zainab Abidzaid Abid AL-Hadrawy et al. (2021)	Evaluate nurses' knowledge on neonatal CPR	60 nurses	Descriptive cross-sectional study, knowledge questionnaire	Majority of nurses had poor knowledge on CPR
Xiang Ding et al. (2021)	Assess effectiveness of neonatal	23 healthcare professionals	Evaluation before and after training, self-designed	Significant improvement in theoretical

	resuscitation training		questionnaire	know resuscitation skills post-training
Jatuporn Ounprasertsuk, Chonthicha Wongthong (2020)	Examine effectiveness of basic life support training in students	85 middle school students	Quasi-experimental study, pre-post training assessment	Statistically significant improvement in knowledge after training
Ebrahimi H.K et al. (2020)	Evaluate effect of simulation-based CPR education on NICU nurses	21 NICU nurses	Quasi-experimental study, pre-post training assessment	Simulation significantly improved nurses' knowledge and performance

SUMMARY AND CONCLUSION:

The reviewed studies shed light on the importance of CPR education and training across different demographics. Parents, nurses, healthcare professionals, and students exhibited varying levels of knowledge and skills in CPR, with training programs consistently proving effective in enhancing competencies. From the findings, it is evident that investing in CPR education and training programs can significantly contribute to improving outcomes during emergencies. Further efforts are needed to develop comprehensive CPR programs accessible to individuals across all levels of healthcare facilities and educational institutions. By equipping individuals with adequate knowledge and skills in CPR, we can potentially save more lives, especially among vulnerable populations like infants and children.

In conclusion, simulation-based CPR education can significantly improve the knowledge and performance of neonatal intensive care unit nurses. Further research is needed to explore the effectiveness of these simulation techniques in improving the knowledge and skills of these professionals.

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