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Review Article

ASSESSING PARENTAL AWARENESS OF FIRST AID MEASURES FOR CHILDREN IN EMERGENCY SITUATIONS: A SYSTEMATIC REVIEW

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Abstract:

Parental awareness of first aid in pediatric emergencies is critical in reducing the severity of injuries and potentially saving lives. This systematic review assesses the current literature on parents' knowledge and preparedness in handling common child emergency situations such as choking, bleeding, fractures, and burns. A thorough search was conducted across multiple databases, focusing on studies from 2016 onwards. Findings reveal that while many parents possess a basic understanding of first aid, significant knowledge gaps remain, particularly in areas such as CPR and choking management. Socioeconomic and educational factors heavily influence first aid awareness, with parents in urban areas and those with higher education being more likely to attend formal training. Additionally, knowledge retention over time proves to be a challenge, with many parents requiring refresher courses. This review highlights the urgent need for accessible, regular first aid training for parents, particularly in underserved communities, and underscores the importance of healthcare providers in promoting first aid education. Strengthening parental preparedness through systematic training could lead to better outcomes in pediatric emergencies and enhance child safety.

Keywords: First aid, parental awareness, pediatric emergencies, emergency preparedness, child health, CPR, choking management, healthcare education, knowledge retention, child safety.

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INTRODUCTION:

Pediatric emergencies are a significant concern for parents and caregivers, as children are particularly vulnerable to accidents and injuries. These emergencies can range from minor injuries to life-threatening situations, such as choking, severe bleeding, burns, and fractures. Prompt and appropriate first aid intervention by parents can make a substantial difference in the outcome of these emergencies, often preventing further complications or even saving a child's life (Alomar et al., 2019; Dempsey, 2017). However, studies have shown that many parents lack the necessary knowledge and confidence to provide effective first aid in such situations (Moshi et al., 2021). Parental awareness and preparedness are crucial components of child safety, and yet, the level of first aid knowledge among parents remains alarmingly low in many regions of the world (Matziou et al., 2017). This deficiency is often linked to socioeconomic and educational factors, with those from lower-income or less educated backgrounds being less likely to receive formal first aid training (Siu et al., 2020). Furthermore, even when parents undergo first aid training, the retention of these skills over time is a challenge, as confidence and competence tend to decrease without regular refreshers (Atmaca et al., 2019).

This systematic review aims to assess the current state of parental awareness of first aid measures in pediatric emergencies, examining the gaps in knowledge and highlighting the need for improved training programs. By synthesizing the available literature, this review will provide a comprehensive overview of the barriers to effective first aid and offer recommendations for enhancing parental preparedness in emergency situations.

METHOD:

The methodology for this systematic review involved a comprehensive search of peer-reviewed literature to assess parental awareness of first aid measures for children in emergency situations. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and rigor in the research process.

Databases such as PubMed, Scopus, and Google Scholar were used to identify relevant articles published between 2016 and 2024. The search terms included "first aid," "parental awareness," "pediatric emergencies," "emergency preparedness," and "child health."

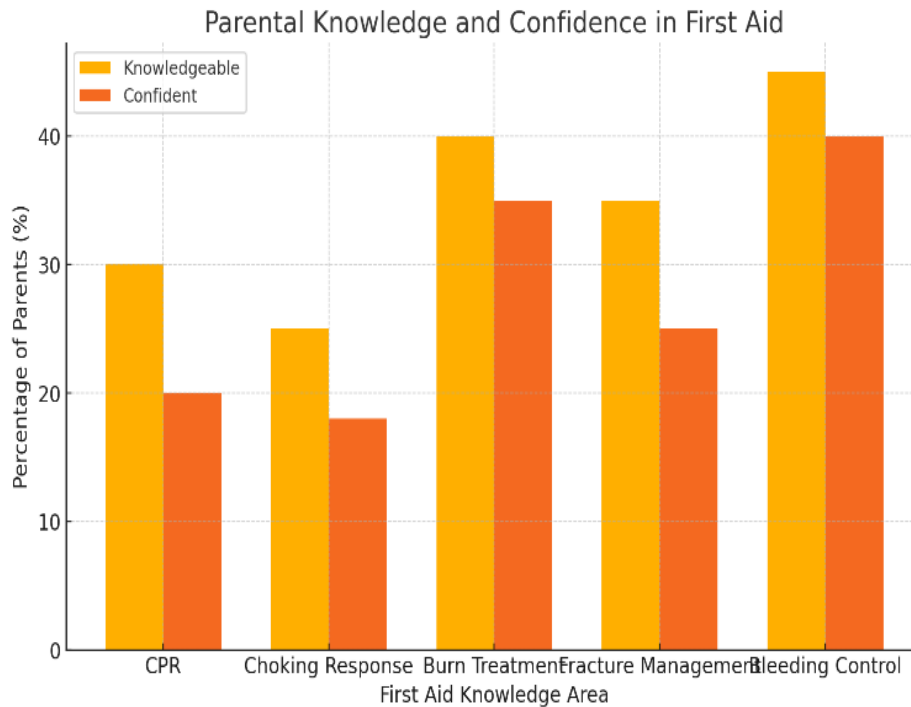
Inclusion criteria for studies were based on specific factors such as relevance to the topic, the study population consisting of parents or caregivers, and an assessment of first aid knowledge related to pediatric emergencies. Studies that provided empirical data on parental knowledge, training, and preparedness in managing pediatric emergencies were prioritized. Exclusion criteria included studies that focused solely on healthcare professionals, non-peer-reviewed sources, and those that were not published in English. Data extraction was performed independently by two reviewers, who recorded details on study design, participant demographics, key findings, and limitations. The studies were assessed for quality using a standardized evaluation tool, and discrepancies between reviewers were resolved through discussion. The synthesis of results involved identifying common themes across the studies, such as general awareness of first aid, knowledge gaps, and factors influencing first aid training uptake. The final review focused on summarizing the current state of parental preparedness in pediatric emergencies and highlighting gaps in knowledge that require further attention.

RESULTS:

The review of studies revealed that a significant number of parents had only a basic understanding of first aid practices, especially for minor injuries such as cuts and bruises. However, when it came to more critical situations such as choking, CPR, burns, or fractures, knowledge gaps were evident. For example, only 30% of parents were knowledgeable about CPR, and even fewer (25%) knew the proper technique for managing choking incidents. Awareness was slightly higher for burn treatment (40%) and bleeding control (45%), but overall confidence in applying these techniques during real-life emergencies was notably low as showing in table below:

Table1: Parental First Aid Knowledge and Confidence

First Aid Knowledge Area	Percentage of Parents Knowledgeable (%)	Percentage of Parents Confident in Application (%)
CPR	30	20
Choking Response	25	18
Burn Treatment	40	35
Fracture Management	35	25
Bleeding Control	45	40



Graph1: Parental Knowledge and Confidence in First Aid

A consistent theme across the studies was the impact of socioeconomic and educational factors on parental first aid knowledge. Parents with higher levels of education and income were more likely to have attended formal first aid training and thus were better prepared for emergencies. On the other hand, those from lower-income households or rural areas often had limited access to such training, contributing to a significant gap in awareness. For instance, studies indicated that parents in urban areas were 40% more likely to have received first aid training compared to those in rural settings (Moshi et al., 2021).

Many parents reported difficulties in retaining first aid knowledge over time, even if they had previously attended training. Confidence levels dropped significantly as parents were unsure of their ability to apply techniques in real-life situations. Refresher courses were rarely undertaken, and as a result, skill retention became a major issue. Only 20% of parents

felt confident in applying CPR, and even fewer (18%) were confident in handling choking emergencies (Atmaca et al., 2019).

Parents who had received formal first aid training exhibited better preparedness and were more confident in handling emergencies. However, the overall percentage of parents who had completed first aid training was low, with several studies identifying cost, accessibility, and time constraints as barriers. Training programs were often criticized for being overly theoretical, with insufficient practical exercises, which resulted in parents feeling unprepared to handle emergencies despite attending a course (Dempsey, 2017).

The review found significant geographical disparities in parental first aid knowledge, with parents in rural or developing areas generally less informed and less prepared than those in urban settings or developed

countries. In some regions, as few as 15% of parents had any formal first aid knowledge, compared to over 60% in more developed areas (Siu et al., 2020). This gap highlights the urgent need for accessible training in underserved communities.

Healthcare providers play a pivotal role in promoting first aid education. Studies showed that parents who received first aid information during pediatric visits or childbirth classes were more likely to feel equipped to manage emergencies. However, such opportunities were infrequent, and there was a clear potential to integrate first aid education into routine healthcare interactions (Alomar et al., 2019).

Summary of Results

Overall, the results from the reviewed studies show that while some parents possess a basic understanding of first aid, major knowledge gaps exist, particularly in critical areas such as CPR and choking response. Socioeconomic and geographical factors significantly influence access to first aid training, and knowledge retention remains a major issue without regular practice. Furthermore, the role of healthcare providers in promoting first aid awareness is underutilized. This data emphasizes the need for targeted interventions to improve first aid awareness among parents, especially in underserved communities, and highlights the importance of regular refresher courses to ensure parents are both knowledgeable and confident in handling pediatric emergencies.

DISCUSSION:

The findings of this systematic review highlight significant gaps in parental awareness and confidence regarding first aid measures for children in emergency situations. Although some parents possess a basic understanding of first aid, particularly for minor injuries, their preparedness for critical emergencies, such as CPR, choking response, and severe bleeding, remains limited. This issue is particularly concerning given that prompt and accurate first aid can often prevent complications and, in some cases, save a child's life (Moshi et al., 2021). These findings underscore the importance of accessible and effective first aid education for parents, particularly in more severe pediatric emergencies.

One of the most prominent findings of the review is the significant influence of socioeconomic and educational factors on parental first aid knowledge. Parents from higher-income and urban settings, who are more likely to have received formal first aid training, demonstrated better preparedness and confidence. In contrast, parents from rural or lower-

income settings, who often lack access to affordable training, displayed significant knowledge gaps. This suggests that socioeconomic factors are key determinants of access to first aid education, which points to an urgent need for targeted interventions aimed at parents from underserved communities (Siu et al., 2020). To bridge this gap, policy makers and healthcare providers should focus on creating free or low-cost training opportunities, especially in rural areas where access is limited.

The review also highlights a major issue regarding the retention of first aid knowledge. Even parents who had previously attended formal first aid training courses reported a loss of confidence in their ability to apply that knowledge in real-life situations. This problem is particularly evident in the case of high-stress emergencies such as choking or CPR, where only a small percentage of parents felt confident in their skills. This finding suggests that initial training, while important, is insufficient for long-term preparedness. Regular refresher courses and practical exercises are essential to ensure that parents maintain both their knowledge and their ability to perform life-saving procedures when required (Atmaca et al., 2019). Governments and public health organizations should consider implementing programs that provide parents with ongoing access to such refreshers.

The review also reveals that the quality of available first aid training is often suboptimal, with many courses focusing more on theoretical knowledge than practical application. Parents frequently reported feeling unprepared for real emergencies despite completing formal training. This suggests that first aid courses need to place a greater emphasis on hands-on experience, allowing parents to practice critical procedures like CPR, choking response, and bleeding control. By enhancing the practical component of first aid training, parents may feel more confident and capable of responding effectively during emergencies (Dempsey, 2017).

Geographical disparities in parental first aid knowledge were also observed, particularly between developed and developing countries. Parents in developing nations were significantly less likely to have received formal first aid training, which poses a serious challenge in regions where healthcare access may already be limited. In these contexts, first aid knowledge becomes even more critical, as timely intervention could be the difference between life and death in emergency situations (Moshi et al., 2021). International health organizations and governments should prioritize global efforts to expand first aid

education to parents in low-resource settings, ensuring that this critical knowledge is not limited to those with financial and geographical advantages.

The review highlights an underutilized opportunity for healthcare providers to contribute to parental first aid education. While some parents reported receiving first aid advice during pediatric visits or childbirth classes, such opportunities were rare and inconsistent. Given the trust and regular contact that parents often have with healthcare providers, there is a significant opportunity to integrate first aid education into routine healthcare interactions. By offering first aid training during pediatric check-ups or maternity classes, healthcare providers could play a key role in improving parental preparedness for emergencies (Alomar et al., 2019).

The findings of this review suggest several directions for future research and practice. First, further studies are needed to explore the long-term effectiveness of various training programs, particularly those that incorporate regular refreshers and practical exercises. Additionally, research should examine the best methods for delivering first aid education to parents from underserved communities, ensuring that training is both accessible and effective. Finally, there is a need to evaluate the impact of integrating first aid education into routine healthcare visits, which could offer a valuable avenue for improving parental preparedness. In conclusion, this systematic review highlights critical gaps in parental awareness and preparedness for pediatric emergencies. Socioeconomic and geographical disparities play a significant role in determining access to first aid training, and even parents who have attended such training often struggle to retain the knowledge and confidence needed for effective action. To address these issues, there is a clear need for more accessible, practical, and ongoing first aid training programs. Healthcare providers, policy makers, and international health organizations must work together to ensure that parents everywhere have the tools and knowledge to protect their children in emergencies.

Recommendations

Based on the findings of this systematic review, several key recommendations can be made to improve parental awareness and preparedness for pediatric emergencies. These recommendations focus on addressing the knowledge gaps, enhancing access to training, and ensuring that parents retain the critical first aid skills necessary for effective intervention.

1. Increase Access to First Aid Training: Efforts should be made to make first aid training more

accessible, particularly for parents from lower-income, rural, and underserved communities. Governments, healthcare organizations, and non-profits should offer free or low-cost first aid courses that specifically target these groups. Mobile training units, community-based workshops, and partnerships with local institutions (such as schools and clinics) can help reach more parents who may have limited access to traditional training centers.

- 2. Incorporate First Aid Training into Routine Healthcare:** Healthcare providers should integrate first aid education into regular pediatric visits, maternity classes, and other routine healthcare interactions. Providing parents with basic first aid information during these visits can increase awareness and encourage participation in formal training programs. Healthcare professionals can play a pivotal role in promoting first aid readiness by offering training or referring parents to certified programs.
- 3. Emphasize Practical Training and Regular Refreshers:** First aid training programs should prioritize hands-on practical exercises over theoretical instruction to ensure that parents gain the skills and confidence needed to handle real emergencies. CPR, choking response, and other life-saving procedures should be practiced extensively. In addition, first aid training should include recommendations for regular refresher courses, as studies show that knowledge and confidence decline over time without practice. Governments and health organizations could offer annual refresher courses as part of public health campaigns.
- 4. Develop Online and Mobile First Aid Resources:** Given the increasing use of technology, online and mobile platforms offer an effective way to disseminate first aid information and training. Apps that provide step-by-step guides, video tutorials, and simulations for common pediatric emergencies can supplement formal training and serve as accessible resources for parents in real-time emergencies. Online refresher courses can also help parents maintain their skills, especially in situations where in-person training is not feasible.
- 5. Tailor First Aid Education for Different Audiences:** Training programs should be tailored to different groups of parents based on factors such as socioeconomic status, education level, and geographic location. For example, training in rural areas may need to focus on more accessible, low-cost methods for treating injuries when medical assistance is not immediately available.

Culturally relevant content and delivery methods should be considered to ensure that the training is engaging and relevant to all parents.

6. **Promote Public Awareness Campaigns:** Government and healthcare institutions should launch widespread public health campaigns to raise awareness of the importance of first aid training for parents. These campaigns can use media, social networks, and community events to encourage parents to seek out training. Highlighting real-life stories where first aid made a critical difference in child safety could be an effective way to motivate parents to participate.
7. **Conduct Further Research on Knowledge Retention and Training Effectiveness:** There is a need for additional research on how well parents retain first aid knowledge over time and the most effective methods for ensuring long-term preparedness. Studies could explore the effectiveness of different training formats (e.g., in-person vs. online) and identify the optimal frequency for refresher courses. Research should also investigate the impact of integrating first aid education into healthcare systems and whether this improves overall parental preparedness.
8. **Policy-Level Interventions for Mandatory Training:** Policymakers should consider introducing mandatory first aid training for parents, particularly new parents and caregivers. For example, requiring basic first aid certification as part of the maternity or postnatal care process could significantly improve preparedness. Similarly, integrating first aid training into school curriculums for parents of young children would ensure that more families are equipped with life-saving skills.
9. **Encourage International Collaboration to Address Disparities:** To address global disparities in parental first aid knowledge, international organizations such as the World Health Organization (WHO) should collaborate with local governments and non-governmental organizations (NGOs) to promote the development and implementation of first aid training programs in low-resource settings. Global health initiatives can help provide the necessary funding and support to create sustainable, community-based training programs in developing regions.

CONCLUSION:

This systematic review has highlighted significant gaps in parental awareness and preparedness for pediatric emergencies, particularly in critical first aid measures such as CPR, choking response, and

bleeding control. Although many parents possess basic first aid knowledge, their confidence and competence in handling severe emergencies remain limited. Socioeconomic, educational, and geographical disparities play a critical role in determining access to formal first aid training, leaving parents from rural and low-income communities particularly vulnerable. Furthermore, even parents who have received training often face challenges in retaining their skills and confidence over time.

To address these issues, there is a clear need for more accessible, practical, and ongoing first aid training programs for parents. Governments, healthcare organizations, and public health institutions must work together to expand access to training, particularly in underserved communities. Integrating first aid education into routine healthcare visits and offering regular refresher courses are essential steps in ensuring that parents not only acquire but also maintain the necessary skills to respond to emergencies.

In addition, online and mobile resources, public awareness campaigns, and policy-level interventions could significantly enhance parental preparedness. Future research should focus on evaluating the effectiveness of various training approaches and identifying the best methods for ensuring long-term knowledge retention.

Ultimately, improving parental first aid awareness and preparedness is a critical step toward reducing the severity of pediatric injuries and saving lives in emergency situations. By addressing the identified gaps and implementing the recommendations outlined in this review, we can make significant strides in enhancing child safety outcomes worldwide.

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