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Ethical and Educational Perspectives on Involving Children and Adolescents as Simulated Patients in Pediatric Emergency Training

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ABSTRACT

Pediatric emergency care requires healthcare professionals to possess both appropriate clinical and communication skills. However, limited exposure to pediatric emergencies may reduce clinicians' confidence and preparedness when managing critically ill or distressed children. Simulation-based education has become an important strategy for addressing these challenges, with growing interest in the use of child and adolescent simulated patients (CASPs) to enhance realism and communication-focused training.

This narrative review examines the educational value, practical applications, and ethical considerations associated with involving CASPs in pediatric emergency medicine simulation. Literature related to pediatric simulation, standardized patients, communication training, and ethical guidance was reviewed and synthesized narratively. CASPs may enhance realism, learner engagement, developmentally appropriate communication, and family-centered care training in communication-focused scenarios. However, their involvement also raises important ethical and safeguarding considerations related to psychological well-being, consent and assent, emotional burden, developmental appropriateness, and participant safety.

Alternative simulation modalities, including computer-controlled manikins, virtual reality, and Artificial Intelligence-enabled systems, may be preferable for physiologically complex or high-acuity scenarios, requiring invasive interventions, while CASPs may provide advantages in communication-focused educational encounters. The integration of CASPs should therefore be guided by educational objectives, participant maturity, scenario complexity, and appropriate safeguarding frameworks.

CASPs represent a valuable but specialized simulation modality in pediatric emergency education. Their use should be carefully planned, ethically supported, and aligned with the developmental readiness and well-being of participants to ensure safe and effective educational practice.

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INTRODUCTION

Pediatric emergencies can be challenging to manage in the Emergency Department (ED) due to limited access to child-specific equipment, variability in staff specialties and training, and the unique physical and cognitive developmental characteristics of children. Another contributing factor is that pediatric emergencies are relatively rare, resulting in lower exposure of healthcare providers to such situations [1].

Improving the quality of care for children experiencing health-related distress requires both clinical and communication skills that are tailored to their developmental needs. Simulation-based education (SBE) has become an important approach for preparing healthcare providers to manage pediatric emergencies safely and effectively [2].

Traditionally, SBE has relied on manikins and adult actors; however, findings from a recent literature review on pediatric simulation in paramedic education indicate that, in several studies, Emergency Medical Service providers preferred exposure to highly realistic simulations to enhance their confidence and skills [3]. Depending on the type of scenario or clinical encounter being recreated, achieving this level of realism is not always possible using a pediatric manikin or an actor older than the patient they are intended to portray. This limitation may create a significant fidelity gap [4, 5].

Children and adolescents have also been utilized as simulated or standardized patients (SPs), with varying degrees of acceptance and success [6, 7]. For clarification, a simulated patient generally refers to an individual trained to portray a clinical role with flexibility and adaptive interaction, whereas a standardized patient performs the role in a consistent and reproducible manner according to predefined objectives and a script [8]. In pediatric simulation, terminology may also include child or adolescent standardized or simulated patients (CASPs), depending on the educational design and learning objectives. To enhance conceptual clarity and support consistent terminology throughout the manuscript, Table 1 summarizes key simulation participant definitions and their typical applications within pediatric SBE.

TABLE 1 - Common Terminology Used in Pediatric Simulation-Based Education

Term	Definition	Typical Educational Use
Simulated Patient (SP)	An individual trained to portray a patient scenario with adaptive and flexible responses based on learner interaction [8].	Communication training, history taking, psychosocial scenarios [8].
Standardized Patient	A simulated patient trained to deliver a highly consistent portrayal across learners and encounters [9].	Objective Structured Clinical Examinations (OSCE), competency assessment, and standardized evaluations [9].
Child and Adolescent Simulated Patient (CASP)	An umbrella term used to include babies, child SPs (aged 5–12 years), and adolescent SPs (aged 13–19 years) in healthcare simulation sessions [10].	Practice and assessment of communication skills, clinical skills, professionalism, learner feedback, and participation in OSCEs and clinical skills assessments [10].
Hybrid Simulation	A simulation approach combining a simulated patient with a task trainer, wearable device, or manikin [9, 12].	IV insertion, trauma care, procedural communication, and integrated technical and nontechnical skills training [9, 12].

This narrative review explores the educational value, practical application, and ethical considerations of involving CASPs in pediatric emergency training, highlighting their potential to enhance realism, communication, and clinical preparedness among healthcare professionals. It is expected to provide useful recommendations on the adoption of CASPs during SBE activities in emergency medicine programs and other specialties.

REVIEW METHODOLOGY

This manuscript was conducted as a narrative review to explore the educational, practical, and ethical considerations surrounding the involvement of children and adolescent simulated patients (CASPs) in pediatric emergency medicine simulation. Literature was identified through searches of databases including PubMed, Scopus, CINAHL, and Google Scholar for publications related to pediatric simulation, standardized patients, child simulated patients, ethics, communication training, and pediatric emergency education. Priority was given to peer-reviewed articles, simulation standards, and relevant guidance documents published primarily in English. Additional references were identified through citation tracking of key articles. The literature was synthesized narratively to examine recurring educational themes, ethical concerns, practical implementation strategies, and emerging recommendations related to the safe integration of CASPs in healthcare simulation.

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PEDIATRIC CARE IN GENERAL EMERGENCY DEPARTMENTS

Each year, approximately 35.5 million children visit EDs in the United States, yet only 16% are seen in pediatric-specific EDs [13]. The majority are treated in general EDs by emergency physicians, often in settings with low pediatric patient volumes. Studies show that pediatric-specific EDs achieve better outcomes in managing high acuity pediatric emergencies such as sepsis, cardiac arrest, and trauma [14]. This variability is attributed to differences in healthcare provider training and exposure to such emergencies, institutional preparedness, and resource availability for this particular patient population group. Enhancing pediatric care, particularly for neonates and infants, requires targeted improvements in staff training and access to appropriate pediatric-specific equipment [15].

The Accreditation Council for Graduate Medical Education requires emergency medicine residency programs to dedicate five months or 20% of clinical encounters to pediatric patients under 18 years of age [16]. While proficiency in medical and trauma resuscitation is expected, there is limited guidance on the pediatric-specific content that should be taught or the instructional methods to be used. Thus, many general emergency physicians may feel underprepared to manage pediatric cases effectively.

Managing pediatric emergencies also demands strong communication skills with children and their families, especially under stressful conditions such as child deterioration, resuscitation, and breaking bad news [17]. Children's unique behavioral and developmental characteristics require tailored communication strategies to ensure accurate clinical assessments and compassionate care [18]. However, real-life exposure to such scenarios is often limited, leaving trainees underprepared and increasing the risk of miscommunication and potential medical errors when dealing with pediatric patients. To bridge this gap, appropriate training approaches need to be considered and implemented on a regular enough basis so that clinicians' level of confidence and skills related to managing young patients remain high [3].

SIMULATION-BASED EDUCATION IN PEDIATRIC TRAINING

Simulation-based education has become a cornerstone in preparing healthcare providers for pediatric emergencies [19]. Traditional simulations often use interactive manikins or adult standardized patients to develop decision-making, psychomotor, and teamwork skills in a safe, controlled environment [9]. There has been growing interest in incorporating CASPs in scenarios involving communication, consent, and psychosocial care [20]. This approach offers valuable experiential learning opportunities that address key gaps in pediatric emergency training. A major driver behind the growing interest in CASPs simulation is its ability to enhance the complexity and realism of simulation activities. Higher levels of complexity and fidelity in SBE may contribute to more immersive learning experiences, promoting deeper and more lasting knowledge acquisition for more experienced learners [9]. However, these same characteristics may be overwhelming and stressful for more junior learners [21]. Overall, learners in general often report that they prefer interacting with SPs rather than with manikins [22].

Historically, pediatric simulation has employed various modalities to support clinical training. Partial task trainers have been used to teach specific skills such as medication administration, airway management, cardiovascular assessment, surgical cricothyroidotomy, central line placement, epistaxis control, and a range of pediatric emergency procedures [23-26]. In addition, full-body simulators, equipped with computer-controlled vital signs and physiological responses, allow a team of learners to practice managing high acuity, low frequency pediatric emergencies [19]. These scenario-based simulations with authentic physiological responses provide an experience for learners to make decisions about when and how to perform an intervention. They are also useful for practicing nontechnical competencies, such as leadership, communication, and situational awareness skills that are critical when managing a deteriorating pediatric patient [7].

More recently, virtual reality (VR) simulations have been introduced to enhance clinical reasoning and decision-making in high-stress situations. VR allows learners to engage with complex, evolving cases in a safe environment, supporting the development of effective management strategies for critically ill children. They are useful to practice communication skills, history taking, physical examination, and clinical skills [27]. Recent technological advances have further enabled the integration of generative artificial intelligence models with voice recognition into manikins or patient simulators, enhancing their educational capabilities as an alternative to SPs (human actors) [28].

WORKING WITH CHILDREN AND ADOLESCENTS AS SIMULATED PATIENTS

The use of standardized patients and simulated patients in pediatric clerkships, pediatric residencies, and pediatric nursing education has become quite common [29, 30]. The inclusion of CASPs introduces a level of realism that is difficult to replicate with manikins or adult actors. It allows for more authentic interactions, especially in scenarios where

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age-appropriate communication, family-centered care, and emotional intelligence are being assessed. The systematic review of Gamble et al. [10] summarized the use of CASPs in pediatric education. The review indicated that CASPs were involved to enhance the teaching and assessment of communication, clinical, and psychosocial skills in different pediatric specialties. Their roles span a variety of scenarios, including routine examinations, mental health assessments, and risk-taking behaviors. Adolescents often portrayed patients in OSCEs, while younger children were used in disaster preparedness or basic consultation training. Gamble et al. [10] also indicated that some simulations included child-parent SP to simulate realistic family dynamics in pediatric contexts. Adolescents also provided feedback to learners, which was found to be a powerful educational approach for improving professional behavior and communication skills [10]. Across studies, CASPs appear most beneficial in communication-intensive scenarios, while their added value in high-acuity procedural training remains limited.

The involvement of CASPs in pediatric emergency training offers pediatricians an opportunity to refine essential communication and clinical skills. Unlike conventional manikins, an appropriately trained CASPs can provide authentic emotional and behavioral responses, enabling trainees to practice developmentally appropriate communication strategies. This authenticity is crucial in emergency scenarios where effective interaction with young patients can influence patient outcomes [10].

Involving CASPs in medical emergency simulations can be effective for training healthcare professionals. For example, a well-trained CASP can simulate severe abdominal pain, crying and clutching their stomach, or mimic symptoms of an asthma attack, such as coughing and difficulty breathing. Other scenarios include allergic reactions with hives and swelling, or diabetic emergencies with confusion and lethargy [31].

CASPs can be utilized in scenarios involving falls or minor injuries to enhance the realism of pediatric emergency training [32]. The application of moulage can improve the simulation's authenticity, thereby increasing learner immersion and engagement [30].

However, when applying moulage to CASPs, several considerations must be taken into account. Educators should be mindful of potential allergies to moulage materials, the likelihood of the child moving frequently, the need for restroom breaks, and the possibility of discomfort caused by the makeup. Additionally, extra clothing may be required to protect the child's attire from staining. Therefore, it is essential to provide clear explanations to the child and their guardians about the process and to use the smallest amount of moulage necessary to achieve the desired level of realism [30]. Furthermore, prompted by the right questions, CASPs can offer immediate feedback from a young person's perspective, highlighting areas for improvement in communication and approach. This feedback helps trainees adjust their techniques to better meet the needs of pediatric patients [33].

Moreover, the presence of CASPs can elevate the emotional and psychological realism of a simulation. This is important in emergency settings where clinicians must manage not only clinical priorities but also the anxieties of the child and their parents or caregivers [30]. For example, scenarios that involve explaining procedures, obtaining assent, or calming a distressed child can be far more impactful when provided to a child rather than an adult pretending to be a child. Learners are often more engaged, report stronger emotional engagement, and reflect more deeply on their communication approach when interacting with actual CASPs [20]. CASPs may be useful in communication-focused pediatric emergency scenarios, whereas physiologically complex deterioration or resuscitation scenarios may be more appropriately addressed using computer-controlled manikins or hybrid simulation approaches. Physical symptom portrayal should be simulated in a manner that avoids inducing physiological stress or discomfort in the child.

Pediatric residents in specialties such as emergency medicine, anesthesiology, family or adolescent medicine, and general pediatrics can engage with CASPs to develop communication skills related to sensitive topics, including substance use, sexual history, contraceptive counseling, and the delivery of bad news. These simulations help build trainees' confidence and provide valuable experience for real-life clinical encounters [34]. However, the involvement of children in such scenarios requires special consideration, as discussed later in this article, due to the potential psychological impact associated with exposure to sensitive topics.

Hybrid simulation, which integrates a full-body manikin or task trainer with a simulated pediatric patient or family member, is a valuable educational approach in pediatric emergency training. They provide learners with opportunities to develop both clinical and communication skills in realistic scenarios [9, 12]. For instance, the use of a wearable intravenous (IV) cannulation arm and a CASP to practice the IV catheter insertion and communication skills more realistically [4].

Another example is a simulation involving an infant who has fallen; a simulated mother can be included to allow trainees to practice physical assessment, history taking, treatment planning, and effective communication with a distressed parent, reflecting real-life situations in the emergency department. Such approaches may support emergency training scenarios that require simultaneous procedural performance and age-appropriate communication with pediatric patients and caregivers.

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CASE EXAMPLE: PEDIATRIC CLINICAL SKILLS ASSESSMENT

This case illustrates the operational feasibility and assessment utility of CASPs in structured pediatric clinical evaluations. The Pediatric Clinical Skills Assessment was developed by Lane and Ziv [35] illustrates a comprehensive approach using CASPs aged 7 to 16 years old in full clinical encounters. These encounters were designed not only to assess history-taking, but also physical examination, documentation, interpersonal and communication skills, which are all critical components in pediatric emergency care. Seven of the ten clinical cases involved CASPs portraying common emergencies. For example, a 9-year-old boy played a child with asthma who missed his friends after relocating, prompting the trainee to demonstrate empathy and counseling. Other cases included a 15-year-old with a headache and a 12-year-old with a limp. These scenarios allowed for the assessment of both clinical reasoning and the ability to communicate effectively with pediatric patients. Some scenarios involved the CASP alongside an adult SP acting as a parent, such as in cases of enuresis, upper respiratory infection with suspected abuse, and dark urine. This dual participation added complexity to the encounters, reflecting the real-world situation of managing both the child and their caregiver in emergency situations. In these cases, the CASP rated their overall satisfaction with the interaction, while adult SPs completed detailed checklists assessing the trainee's clinical performance and interpersonal skills [21]. However, the scalability, resource requirements, and ethical oversight associated with CASPs may limit their routine implementation in emergency training programs.

ETHICAL AND PRACTICAL GUIDELINES FOR INVOLVING CHILD AND ADOLESCENT SIMULATED PATIENTS

Gamble et al. [37] developed a set of comprehensive recommendations for child and young simulated patient practice, drawing on empirical evidence, personal experience as SP educators, and the ASPE standards [36], and prior work by Budd and Andersen [20]. These recommendations are interrelated and form a holistic framework addressing key aspects of CASPs' involvement. While not all elements are expected to be applied in every situation, each should be thoughtfully considered when working with CASPs. The original recommendations are grouped into the following categories: practical considerations, safe work environment, scenario development, SP training for role portrayal, feedback and assessment, parental responsibility, and ethical considerations [37].

The ethical aspect: The involvement of CASPs in pediatric scenarios of different disciplines requires ethically grounded and carefully structured guidelines to ensure their safe and meaningful participation. Budd and Andersen [20] have proposed guidelines based on a case involving children aged 7–12 years old, which limits their generalizability, and categorize their recommendations into four key areas: safety and effective involvement, facilities and resources, recruitment and documentation, and training, delivery, and feedback. These guidelines emphasize the importance of valuing CASPs' contributions while protecting their well-being, considering developmental stages, comfort levels, and ethical principles such as autonomy, justice, beneficence, and non-maleficence, highlighting the need for informed consent, preparation, and safeguarding against coercion or emotional strain [11, 18].

There is a need for a comprehensive approach to CASPs involvement across different contexts [37]. Irrespective of the level of experience of the CASP, ethical issues are recognized as an area of concern, depending on the nature of the scenario. Tsai [43] recommends working with children as simulated patients only when necessary and advises against involving very young children in simulations. Younger children, especially those under the age of seven, are highly vulnerable and should be involved only under exceptional circumstances when no suitable alternatives exist [38]. However, suitability for participation should not be determined solely by chronological age, as developmental maturity, cognitive understanding, emotional resilience, and prior experience may vary considerably between individuals. In general, communication-focused and lower emotional intensity roles may be more appropriate for younger or less experienced CASPs, whereas more complex or emotionally demanding scenarios should be approached cautiously and matched to the developmental readiness and comfort level of the child to accept portraying the case [10, 11].

Consent and assent: Recruitment processes must ensure informed consent using age-appropriate language when explanations about their role are provided and account for diverse backgrounds, including language, culture, and learning needs. Parents should be part of the recruitment, assent, and consent processes and fully informed about their child's role and its demands, but children should always be given the opportunity to assent freely or dissent without pressure to undertake an SP role [11, 38]. Dissent must always be honored, regardless of parental agreement.

From a practical point of view, schools and drama programs are suggested as useful recruitment sources for older children to be recruited [37]. Teachers can assist in screening, while caution is advised when involving faculty members' own children. Ethically, the guidelines from Budd and Andersen [20] stress matching developmental stages with role complexity

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and empowering CASPs to voice discomfort at any time. Safeguarding principles like minimizing harm, avoiding coercion, and ensuring comprehension underscore the ethical foundation of CASP engagement. Scheduling should prioritize school holidays or after-school hours to avoid disruption to education, and thoughtful logistics, such as arranging transport or working with nearby schools, can ease the participation process.

The emotional and psychological aspect: Simulation educators should not only meet legal requirements but also take additional steps to protect the well-being and safety of CASPs, drawing on ethical guidelines from both research and the entertainment industry [10]. Creating a safe work environment is an important aspect [37]. This includes complying with labor regulations regarding work hours and compensation, capping simulation time to avoid fatigue, and recognizing the need for child-friendly spaces and trained support personnel. Orientation should reflect the developmental age of the CASPs, and including parents in this process may be appropriate depending on the context. Emotional and psychological safety should be equally prioritized: CASPs should know who their support person is, be offered opt-out words, and be involved in debriefing sessions. Breaks, nourishment, and protected spaces for rest are important. Some of these aspects can be an issue in the context of long OSCE sessions that require CASPs to "remain in character" repeatedly, as it can be an emotionally charged and strenuous experience [39]. Emotional aftercare is stressed, especially following challenging roles, with monitoring protocols in place to catch any adverse effects. Parents are also encouraged to monitor their child for short- and long-term adverse effects, specifically in emotionally charged simulations.

Simulation programs involving CASPs should incorporate psychological safeguarding measures proportional to the emotional intensity of the scenario. These may include structured debriefing opportunities, access to support personnel, observation for signs of distress during or after participation, and follow-up discussions when emotionally challenging scenarios are conducted. Consideration should also be given to limiting participation in highly sensitive or psychologically demanding roles based on the CASP's developmental stage, maturity, and comfort level.

The portrayal of some cases, such as child abuse, could have a significant psychological impact on CASPs [39, 40]. In their SP role, they may be asked to respond to highly sensitive questions inappropriately asked by learners who omit to consider their developmental stage from an emotional and social point of view, but also from a cultural perspective [41]. Playing the role of a mental health patient or other intense character portrayals may be harmful to the participant. In order to alleviate such detrimental effects, measures can be put in place before and after the participant's engagement in the activity. It is recommended that participants are appropriately briefed in advance to take part in the role-play. In addition, a structured debriefing and de-roling process should be implemented following each simulation encounter.

Appropriate facilities and resources should be in place to create a supportive environment, especially during feedback sessions, which can be facilitated through methods that reduce anxiety, such as video or one-way mirror discussions. These safeguards are essential to ensure that educational benefits do not outweigh the ethical responsibility to protect vulnerable participants.

Scenario development and training: The third area of the recommendations by Gamble et al. [37] focuses on scenario development and CASP preparation. They should be encouraged to contribute to scenario design, though care must be taken to avoid reactivating past trauma. As recommended in the simulation design standard of best practice from the International Nursing Association for Clinical Simulation and Learning [42], preparation includes providing detailed role descriptions and a script, allowing time for rehearsals, and using age-appropriate resources such as videos or peer observation. For roles requiring standardization, tag-team approaches can be helpful [43]. Feedback training is also highlighted, ensuring CASPs understand how to provide developmentally appropriate input while being allowed to opt out if the situation makes them feel uncomfortable. Feedback is not limited to learners; it extends to giving CASPs a voice when sharing their own experiences.

Technology-based modalities, such as VR, Artificial-Intelligence (AI)-enabled avatars, and computer-controlled manikins, have been proposed as alternative or complementary approaches to CASP involvement [46]. These modalities may be useful for physiologically complex, high-acuity, repetitive, or resource-intensive scenarios, including pediatric deterioration and resuscitation training, where dynamic physiological responses are required [46]. They may also prove useful in generating automated feedback for learners. However, despite the advancements in AI technology, VR simulations currently demonstrate limitations in replicating dynamic emotional reciprocity and nuanced interpersonal communication as CASPs, who can modify their responses and feedback to suit the specific requirements and learning preferences of individual trainees. Furthermore, CASPs offer personalized feedback grounded in their direct observation of a learner's verbal and non-verbal communication. Thus, the selection of simulation modality should be guided by the educational objectives, scenario complexity, learner needs, available resources, and ethical considerations associated with participant involvement. In contrast, VR environments, even if they are AI-assisted, may lack emotional complexity and subtle non-verbal cues inherent in genuine human interactions, which are critical for

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effective communication. The capacity of CASPs to react unpredictably to a learner's communication approach introduces a more authentic and challenging learning experience [47].

To summarize the key educational, operational, psychological, and ethical considerations discussed throughout this review, Table 2 presents practical recommendations for the safe integration of CASPs in healthcare simulation education.

TABLE 2 - Best Practice Recommendations for CASP Integration in Healthcare Simulation

Domain	Key Recommendation	Practical Application	Risk Mitigation Strategy
Recruitment and Consent	Use developmentally appropriate consent and assent processes	Provide age-appropriate explanations and involve parents/guardians	Respect dissent and avoid coercion
Scenario Design	Match scenario complexity to developmental stage	Use communication-focused or low-intensity roles for younger children	Avoid psychologically harmful or traumatic portrayals
Psychological Safety	Incorporate structured debriefing and emotional support	Provide rest breaks, opt-out options, and support personnel	Monitor for distress and emotional fatigue
Training and Preparation	Provide structured role training and rehearsal	Use scripts, demonstrations, and supervised practice	Ensure role clarity and preparedness
Feedback and Assessment	Train CASPs to provide developmentally appropriate feedback	Use guided learner feedback frameworks	Allow CASPs to decline feedback participation if uncomfortable
Safeguarding	Ensure safe working conditions and parental involvement	Maintain child-friendly environments and supervision	Limit prolonged or emotionally intensive exposure
Hybrid Simulation Use	Combine CASPs with task trainers or manikins when appropriate	Integrate communication and procedural training	Reduce unnecessary emotional burden on CASPs
Alternative Modalities	Consider VR or AI-supported approaches when suitable	Use alternatives for repetitive or high-risk scenarios	Minimize unnecessary exposure of younger CASPs

CONCLUSION

CASPs should not be considered a default simulation modality, but rather a targeted educational intervention reserved for scenarios where authentic communication cannot be replicated through alternative methods or modalities. Involving CASPs in the training of pediatric emergency medicine and other healthcare trainees is valuable. They enhance the realism of clinical scenarios, supports the development of communication skills, and allows trainees to engage more effectively with the emotional and behavioral aspects of pediatric care. While other traditional simulation methods are also important, the use of young CASPs addresses key gaps in current training in areas such as consent, empathy, and family-centered communication. However, their participation must be guided by clear ethical frameworks and policies that prioritize their safety, informed consent, and appropriate role preparation. Particular attention should be paid to the psychological impact of repetitive portrayal of abnormal behaviors on their mental health. Future research should focus on longitudinal psychological outcomes for CASPs and comparative effectiveness studies evaluating CASPs against emerging AI-driven simulation modalities. With careful planning and mental support, CASPs can play a meaningful role in improving the training of pediatric emergency care professionals and contribute to better patient outcomes, especially in general emergency departments, where clinicians see fewer young patients than in specialized pediatric emergency departments.

Keywords

Pediatric emergency medicine; Simulation-based education; Child simulated patients; Standardized patients; Healthcare simulation ethics

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All authors contributed equally and validated the final version of record.

Declarations

Conflicts Of Interests

The Authors declare that there is no conflict of interest.

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Registration

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The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethical approval

Ethical approval for this study was not required.

References

1. Onyejesi CD, Alsabri M, Del Castillo Miranda JC, Aziz MM, Ram MD, Abady EM, et al. Pediatric emergency disaster preparedness: a narrative review of global disparities, challenges, and policy solutions. International Journal of Emergency Medicine. 2025;18(1):91.
2. Gilfoyle E, Koot DA, Annear JC, Bhanji F, Cheng A, Duff JP, et al. Improved clinical performance and teamwork of pediatric interprofessional resuscitation teams with a simulation-based educational intervention. Pediatric Critical Care Medicine. 2017;18(2):e62-e9.
3. Al Badawi AK, Alinier G, Nashwan AJ, Kunjavara J, Tomeh B. Effectiveness of paediatric simulation in paramedic education: a literature review. International Paramedic Practice. 2025;15(2):43-51.
4. Tun JK, Alinier G, Tang J, Kneebone RL. Redefining simulation fidelity for healthcare education. Simulation & Gaming. 2015;46(2):159-74.
5. Alinier G, Oriot D. Simulation-based education: deceiving learners with good intent. Advances in Simulation. 2022 Mar 18;7(1):8.
6. Tsai T-C. Using children as standardised patients for assessing clinical competence in paediatrics. Archives of disease in childhood. 2004;89(12):1117-20.
7. Brown R, Doonan S, Shellenberger S. Using children as simulated patients in communication training for residents and medical students: a pilot program. Academic Medicine. 2005;80(12):1114-20.
8. Alinier N, Alinier G. Standardization and professionalization of simulated and standardized patient-based education in Qatar: A call for action. Qatar Medical Journal. 2025;2025(2):33.
9. Alinier G. A typology of educationally focused medical simulation tools. Medical teacher. 2007;29(8):e243-e50.
10. Oriot D, Alinier G, Messarat-Haddouche Z, Thomazeau H, May-Michelangeli L, Moll MC, Granry JC. Suggestions for the Study of Ethics of Simulation in Healthcare. Panorama of Emergency Medicine. 2026 May 19;4(1):1-4.
11. Gamble A, Bearman M, Nestel D. A systematic review: Children & Adolescents as simulated patients in health professional education. Adv Simul (Lond). 2016;1:1.
12. López R, Yoon P, Viñas A, Lazar M. Hybrid Simulation and Quasi-linear Theory of Bi-Kappa Proton Instabilities. The Astrophysical Journal. 2023;954(2):191.
13. Whitfill T, Auerbach M, Scherzer DJ, Shi J, Xiang H, Stanley RM. Emergency Care for Children in the United States: Epidemiology and Trends Over Time. J Emerg Med. 2018;55(3):423-34.
14. Kessler DO, Walsh B, Whitfill T, Dudas RA, Gangadharan S, Gawel M, et al. Disparities in Adherence to Pediatric Sepsis Guidelines across a Spectrum of Emergency Departments: A Multicenter, Cross-Sectional Observational In Situ Simulation Study. J Emerg Med. 2016;50(3):403-15.e1-3.
15. Jain PN, Choi J, Katyal C. Pediatric Care in the Nonpediatric Emergency Department: Provider Perspectives. Hosp Pediatr. 2019;9(3):216-9.
16. Education ACfGM. ACGME program requirements for graduate medical education in emergency medicine. 2018.
17. Gill FJ, Cooper A, Falconer P, Stokes S, Leslie GD. Development of an evidence-based ESCALATION system for recognition and response to paediatric clinical deterioration. Aust Crit Care. 2022;35(6):668-76.
18. Beatriz GC, María José O, Inés JL, Yolanda HG, Concha Á D, Javier TS, et al. Medication errors in children visiting pediatric emergency departments. Farm Hosp. 2023;47(4):141-7.
19. Ansquer R, Oriot D, Ghazali DA. Evaluation of Learning Effectiveness After a Simulation-Based Training Pediatric Course for Emergency Physicians. Pediatr Emerg Care. 2021;37(12):e1186-e91.
20. Budd N, Andersen P, Harrison P, Prowse N. Engaging Children as Simulated Patients in Healthcare Education. Simul Healthc. 2020;15(3):199-204.
21. Jones M. Effects of simulation fidelity on learning transfer. Journal of Educational Informatics. 2021;2(1):24-34.
22. Mitchell S, Blanchard E, Curran V, Hoadley T, Donoghue A, Lockey A. Effects of simulation fidelity on health care providers on team training—A systematic review. Simulation in Healthcare. 2024;19(1S):S50-S6.
23. Schertzer K, Wang NE, Khanna K, Lee MO. Implementation of a pediatric in situ, train-the-trainer simulation program in general emergency departments. AEM Educ Train. 2023;7(1):e10843.
24. Johnson L, Patterson MD. Simulation education in emergency medical services for children. Clinical Pediatric Emergency Medicine. 2006;7(2):121-7.

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25. Patel EA, Aydın A, Desai A, Dasgupta P, Ahmed K. Current status of simulation-based training in pediatric surgery: a systematic review. Journal of pediatric surgery. 2019;54(9):1884-93.
26. Fiedor ML. Pediatric simulation: a valuable tool for pediatric medical education. Critical care medicine. 2004;32(2):S72-S4.
27. Putnam EM, Rochlen LR, Alderink E, Augé J, Popov V, Levine R, et al. Virtual reality simulation for critical pediatric airway management training. J Clin Transl Res. 2021;7(1):93-9.
28. Zidoun Y, Mardi AE. Artificial Intelligence (AI)-Based simulators versus simulated patients in undergraduate programs: A protocol for a randomized controlled trial. BMC Medical Education. 2024;24(1):1260.
29. McCall N, Bekele A, Ewnte B, Abaho J, Ibrahim O. Child standardized patients in pediatric OSCEs: a feasibility study for otoscope examination among undergraduate students in Rwanda. BMC Med Educ. 2024;24(1):1546.
30. Elshama SS. How to use moulage as a simulation tool in medical education? Iberoamerican journal of medicine. 2020;2(3):219-22.
31. Brown R, Doonan S, Shellenberger S. Using children as simulated patients in communication training for residents and medical students: a pilot program. Acad Med. 2005;80(12):1114-20.
32. Popp J, Yochum L, Spinella PC, Donahue S, Finck C. Simulation training for surgical residents in pediatric trauma scenarios. Conn Med. 2012;76(3):159-62.
33. Cleland JA, Abe K, Rethans JJ. The use of simulated patients in medical education: AMEE Guide No 42. Med Teach. 2009;31(6):477-86.
34. Woods JL, Pasold TL, Boateng BA, Hensel DJ. Adolescent health care and the trainee: roles of self-efficacy, standardized patients, and an adolescent medicine rotation. Simul Healthc. 2013;8(6):359-67.
35. Lane JL, Ziv A, Boulet JR. A pediatric clinical skills assessment using children as standardized patients. Arch Pediatr Adolesc Med. 1999;153(6):637-44.
36. Lewis KL, Bohnert CA, Gammon WL, Hölzer H, Lyman L, Smith C, et al. The association of standardized patient educators (ASPE) standards of best practice (SOBP). Advances in Simulation. 2017;2(1):10.
37. Gamble AS, Nestel D, Bearman M. Children and young people as simulated patients: recommendations for safe engagement. International Journal of Healthcare Simulation. 2022:1-9.
38. Khoo EJ, Schremmer RD, Diekema DS, Lantos JD. Ethical Concerns When Minors Act as Standardized Patients. Pediatrics. 2017;139(3).
39. Bokken L, Van Dalen J, Rethans JJ. The impact of simulation on people who act as simulated patients: a focus group study. Medical education. 2006;40(8):781-6.
40. Spencer J, Dales J. Meeting the needs of simulated patients and caring for the person behind them? : Wiley Online Library; 2006. p. 3-5.
41. Blake K, Gusella J, Greaven S, Wakefield S. The risks and benefits of being a young female adolescent standardised patient. Medical education. 2006;40(1):26-35.
42. Watts PI, McDermott DS, Alinier G, Charnetski M, Ludlow J, Horsley E, et al. Healthcare simulation standards of best practiceTM simulation design. Clinical Simulation in Nursing. 2021;58:14-21.
43. Andersen P, Guinea S, Reid-Searl K, Levett-Jones T. Designing tag team patient safety simulation: An instructional design approach. Clinical Simulation in Nursing. 2021;59:1-9.
44. Sarikoc G, Sarmasoglu S, Tuzer H, Elcin M, Burn CL. Intervention for Standardized Patients' Anxiety After "Receiving Bad News" Scenarios. Clinical Simulation in Nursing. 2018;25:28-35.
45. Tsai TC. Using children as standardised patients for assessing clinical competence in paediatrics. Arch Dis Child. 2004;89(12):1117-20.
46. Almagharbeh WT, Ahmed WR, Alfanash HA, Alnawafleh KA, Tajoury OH. Touching the future: How haptic technology and AI are revolutionizing nursing simulations: A systematic scoping review. Journal of Professional Nursing. 2026.
47. Qureshi AA, Zehra T. Simulated patient's feedback to improve communication skills of clerkship students. BMC Med Educ. 2020;20(1):15.

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