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CHILD-CENTERED COMMUNICATION TRAINING STRATEGIES: AN INTEGRATIVE REVIEW

ESTRATÉGIAS DE TREINAMENTO EM COMUNICAÇÃO CENTRADA NA CRIANÇA: UMA REVISÃO INTEGRATIVA

ESTRATEGIAS DE FORMACIÓN EN COMUNICACIÓN CENTRADA EN EL NIÑO: UNA REVISIÓN INTEGRADORA

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ABSTRACT

Communication is a competency in medical practice and presents challenges in pediatrics, where interactions are triadic, involving the clinician, child, and caregiver. Despite the importance of empathy, active listening, and developmentally appropriate communication, trainees may experience difficulties communicating directly with pediatric patients. Educational strategies, including simulation and digital technologies, have been used; however, their contribution to children's participation remains unclear. To analyze communication skills training strategies in pediatrics, and healthcare education contexts, with attention to their contribution to the inclusion of pediatric patients in clinical communication. An integrative review was conducted using PubMed/MEDLINE, SciELO, and the Virtual Health Library. Studies published between 2016 and 2025 were included. After screening and eligibility assessment, 10 studies were selected. Methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT) 2018. The studies were heterogeneous, with a predominance of simulation-based, active learning, and technology-enhanced interventions. Studies reported improvements in communication-related outcomes, including communication skills, empathy, self-efficacy, and clinical performance. However, most interventions focused on healthcare professionals' competencies, with limited assessment of children's active participation. Only a small number of studies involved pediatric patients in educational encounters, while others relied on simulated or virtual representations or addressed broader communication competencies without pediatric participation. Communication training strategies show promise for developing communication-related competencies; however, available evidence remains insufficient to determine whether these interventions consistently promote children's active inclusion in healthcare communication. Further research should evaluate child-centered outcomes, including children's perspectives, communication experiences, and participation in clinical decision-making.

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KEYWORDS: *Health Communication. Pediatrics. Physician-Patient Relations. Medical Education. Simulation Training.*

RESUMO

A comunicação, competência fundamental na prática médica, apresenta desafios específicos na pediatria, envolvendo interações triádicas entre profissional, criança e cuidador. Apesar da importância da empatia, escuta ativa e comunicação adequadas ao desenvolvimento, estudantes podem ter dificuldades para se comunicar diretamente com pacientes pediátricos. Estratégias educacionais, como simulação e tecnologias digitais, têm sido utilizadas; entretanto, sua contribuição para a participação infantil permanece incerta. Analisar estratégias de treinamento em habilidades de comunicação na pediatria e na educação em saúde, considerando sua contribuição para a inclusão de pacientes pediátricos na comunicação clínica. Revisão integrativa realizada nas bases PubMed/MEDLINE, SciELO e Biblioteca Virtual em Saúde. Foram incluídos estudos publicados entre 2016 e 2025. Após triagem e avaliação de elegibilidade, 10 estudos foram selecionados. A qualidade metodológica foi avaliada pelo Mixed Methods Appraisal Tool (MMAT) 2018. Os estudos foram heterogêneos, com predominância de intervenções baseadas em simulação, aprendizagem ativa e tecnologias. Foram relatadas melhorias em habilidades comunicacionais, empatia, autoeficácia e desempenho clínico. Entretanto, a maioria das intervenções concentrou-se nas competências dos profissionais de saúde, com avaliação limitada da participação ativa das crianças. Poucos estudos envolveram pacientes pediátricos diretamente em atividades educacionais; outros utilizaram representações simuladas ou virtuais ou abordaram competências comunicacionais mais amplas sem participação pediátrica. As estratégias de treinamento em comunicação mostram potencial para desenvolver competências comunicacionais; contudo, as evidências permanecem insuficientes para determinar se promovem consistentemente a inclusão ativa das crianças na comunicação em saúde. Novos estudos devem avaliar desfechos centrados na criança, incluindo perspectivas e participação nas decisões clínicas.

PALAVRAS-CHAVE: Comunicação em Saúde. Pediatria. Relação Médico-Paciente. Educação Médica. Treinamento por Simulação.

RESUMEN

La comunicación es una competencia fundamental en la práctica médica y presenta desafíos específicos en pediatría, donde las interacciones son triádicas e involucran al profesional, al niño y al cuidador. Aunque la empatía, la escucha activa y la comunicación adecuada al desarrollo son esenciales, los estudiantes pueden presentar dificultades para comunicarse directamente con pacientes pediátricos. Se han utilizado estrategias como la simulación y las tecnologías digitales, pero su contribución a la participación infantil sigue siendo poco clara. Analizar estrategias de capacitación en comunicación en pediatría y educación en salud, considerando su contribución a la inclusión de pacientes pediátricos en la comunicación clínica. Se realizó una revisión integrativa en PubMed/MEDLINE, SciELO y Biblioteca Virtual en Salud. Se incluyeron estudios publicados entre 2016 y 2025. Diez estudios fueron seleccionados y su calidad metodológica se evaluó mediante el Mixed Methods Appraisal Tool (MMAT) 2018. Los estudios fueron heterogéneos, con predominio de simulación, aprendizaje activo y tecnologías educativas.

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Se observaron mejoras en habilidades comunicativas, empatía, autoeficacia y desempeño clínico. Sin embargo, la mayoría se centró en competencias profesionales, con evaluación limitada de la participación infantil. Pocos estudios involucraron directamente a pacientes pediátricos; otros utilizaron representaciones simuladas o virtuales o evaluaron competencias generales sin participación pediátrica. Las estrategias de capacitación muestran potencial para desarrollar competencias comunicativas, pero la evidencia es insuficiente para determinar si promueven sistemáticamente la inclusión activa de los niños en la comunicación en salud. Se necesitan estudios que evalúen resultados centrados en el niño, incluidas sus perspectivas y participación en decisiones clínicas.

PALABRAS CLAVE: *Comunicación en Salud. Pediatría. Relaciones Médico-Paciente. Educación Médica. Entrenamiento con Simulación.*

BACKGROUND

Communication is an essential competency in medical practice and is recognized as a fundamental pillar of the relationship between healthcare professionals, patients, and families. Evidence shows that effective communication is associated with improved health outcomes, greater understanding of medical information, stronger therapeutic relationships, and increased satisfaction among those involved in the care process [1]. In this context, the development of communication skills has been widely emphasized in medical education and should be systematically incorporated into curricula from the early years of training [1].

In addition to technical competencies, clinical practice requires the development of interpersonal and behavioral skills, often referred to as soft skills, including empathy, active listening, ethics, resilience, and adaptability in human interactions. Although traditionally considered subjective, these competencies are essential for high-quality care and can be developed through structured educational strategies during health professional training [2].

In pediatrics, the communication process presents additional complexities. Pediatric consultations often involve a triadic interaction among the healthcare professional, the child, and a caregiver, requiring the ability to effectively engage multiple participants [3]. Furthermore, children's cognitive and emotional developmental characteristics demand the use of communication strategies adapted to their age, including accessible language and approaches that promote their participation in the care process [4,5].

Although patient-centered communication has become an established principle in healthcare, pediatric communication requires additional considerations due to children's developmental characteristics and evolving capacities. Patient-centered communication broadly emphasizes respect for patients' preferences, values, and participation in healthcare decisions.

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In pediatric contexts, however, child-centered communication extends this perspective by recognizing children as active participants in the communication process and considering their developmental stage, ability to express their perspectives, and evolving capacities to participate in discussions about their health [3,4].

Despite these specificities, studies indicate that medical students frequently experience difficulties in communicating directly with pediatric patients, particularly in establishing rapport and conducting child-centered interactions [3]. These challenges may be related to the fact that communication training during medical education often remains focused on adult patients or interactions with caregivers, limiting opportunities to develop skills specific to pediatric communication [4,6].

At the same time, evidence suggests that children's active participation in clinical interactions remains limited, despite its recognized benefits, such as increased engagement in care, improved understanding of information, and greater cooperation during consultations [3,4,6]. Clinical, contextual, and sociodemographic factors may also influence communication patterns, either facilitating or constraining the inclusion of the child in the communicative process [7,8].

In recent years, health education has incorporated innovative pedagogical approaches, including active learning methodologies, clinical simulation, and digital technologies, aimed at enhancing both technical and non-technical competencies [1,5]. Clinical simulation, in particular, has emerged as an effective strategy for communication skills training, as it enables practice in controlled and safe environments [8,9]. In pediatrics, the use of simulated patients, including children and adolescents, has been associated with improvements in communication skills and better preparation of learners to manage complex clinical situations [7,8].

However, despite advances in educational strategies, many approaches remain primarily focused on the development of professional competencies, with limited emphasis on the inclusion of the child as an active participant in the communication process [10-13]. This gap reveals a misalignment between current training practices and the principles of child-centered communication, which emphasize recognizing the pediatric patient as a rights-bearing individual and an active agent in healthcare interactions.

Given this context, it is essential to understand how communication training strategies have been developed in pediatrics and to what extent they contribute to promoting children's participation in medical consultations. Therefore, this study aims to identify, characterize, and analyze communication skills training strategies in pediatrics, with a focus on promoting the inclusion of the child as an active participant in the communication process in clinical settings.

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METHODS

Study design

This study employed an integrative literature review design to identify and synthesize evidence on communication skills training strategies in pediatrics, with particular emphasis on approaches that promote the inclusion of children and adolescents in healthcare communication. Integrative reviews allow the inclusion of studies with diverse methodological designs and provide a comprehensive understanding of complex phenomena by combining empirical and theoretical literature.

The review was conducted according to the established stages of integrative review methodology: problem identification, literature search, data evaluation, data analysis, and presentation of findings [14,15].

Review question

The guiding research question was: What communication skills training strategies have been used in pediatrics to promote the inclusion of children and adolescents in healthcare communication?

Search strategy

A structured literature search was conducted in PubMed/MEDLINE, Scientific Electronic Library Online (SciELO), and the Virtual Health Library (VHL/BVS). The search was performed from March 3 to April 6, 2026, and included studies published between 2016 and 2025.

Search terms related to communication skills training, clinical competence, pediatrics, children, students, and medical education were combined using the Boolean operators “AND” and “OR”. The search syntax was adapted to the search interface and functionalities of each database. In PubMed/MEDLINE, the following search strategy was used: ("Communication skills training" OR "clinical competence") AND ("pediatrics" OR "child") AND ("Students" OR "Medical education"). In SciELO and VHL/BVS, the following search strategy was used: "Communication skills training" OR "clinical competence" AND "pediatrics" OR "child" AND "Students" OR "Medical education". The same filters were applied in all three databases: publications from the last 10 years, free full text, English, Portuguese, or Spanish language, and studies involving humans.

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Eligibility criteria

Studies were eligible if they addressed educational interventions, training programs, teaching strategies, or learning experiences related to communication skills in pediatric or healthcare education contexts. Studies with different methodological designs were considered, reflecting the integrative nature of the review.

Editorials, opinion papers, abstracts without full-text availability, and studies lacking sufficient methodological information were excluded. No restrictions were applied regarding study setting.

Study selection

Study selection was conducted independently by two reviewers. The process included identification of records, screening of titles and abstracts, and full-text assessment of potentially eligible studies. Disagreements between reviewers were resolved through discussion and consensus. The process was conducted in a transparent and structured manner, and is presented in a flow diagram adapted from established reporting guidelines for study selection transparency.

The initial search identified 279 records, including 147 from PubMed/MEDLINE, 36 from SciELO, and 96 from the VHL. After removal of 74 duplicate records, 205 records remained for title screening. Of these, 126 were excluded because their titles were not related to the proposed topic, leaving 79 records for abstract screening. During abstract review, 59 records were excluded because they did not address the objectives of the review. Twenty articles were then assessed through full-text reading, and 11 were excluded because their methodological characteristics were inconsistent with the purpose of the study. Therefore, 9 articles met the eligibility criteria and were included in the review. Additionally, 1 eligible study was identified through manual screening of the reference lists of the included articles, resulting in a final sample of 10 studies (Figure 1).

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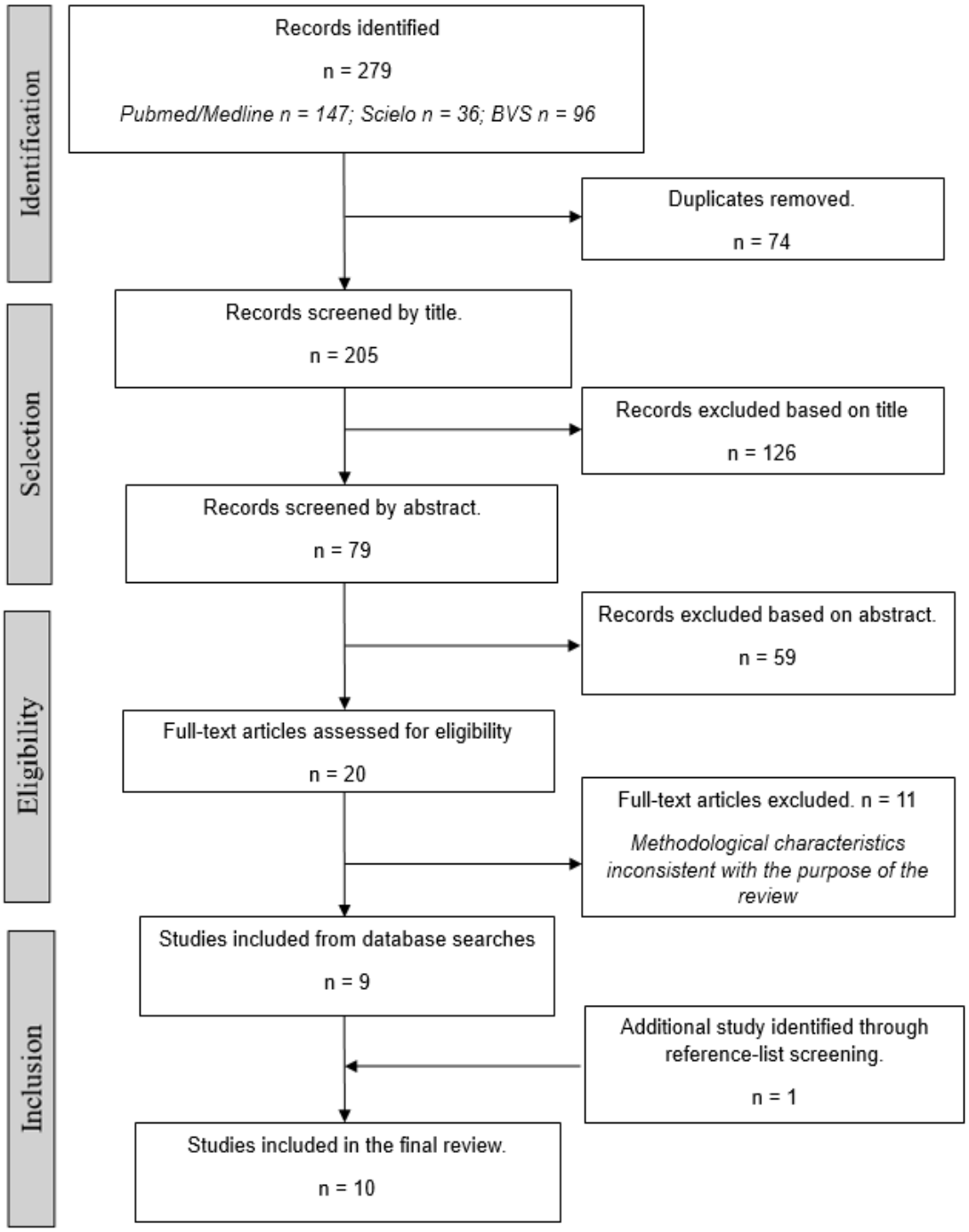
Figure 1. Flow diagram of the study selection process



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Data extraction and analysis

Data were extracted using a structured spreadsheet developed in Microsoft Excel®. The following information was collected: authorship, year of publication, country, study design, participant characteristics, educational intervention, main findings, and relevance to child inclusion in communication processes.

The classification was performed independently by two reviewers, with disagreements resolved through discussion and consensus. Data were analyzed descriptively and comparatively, and the findings were organized in a synoptic table to identify patterns, similarities, and gaps in communication training strategies in pediatrics.

Quality appraisal

The methodological quality of the included studies was independently assessed by two reviewers using the Mixed Methods Appraisal Tool (MMAT), version 2018 [16]. The appropriate MMAT criteria were applied according to the methodological design of each study. Disagreements were resolved through discussion and consensus. The detailed methodological appraisal of the included studies is presented in Supplementary Table S1.

RESULTS

A total of 10 studies were included in the final review (Figure 1).

The methodological quality of the included studies was assessed using the MMAT 2018. Overall, the studies met most of the applicable methodological criteria, although limitations included non-randomized designs, small samples, absence of control groups, and limited reporting of blinding procedures. Detailed results are presented in Supplementary Table S1.

The studies were heterogeneous in design, populations, and educational strategies. Experimental, quasi-experimental, and methodological designs predominated, with most studies involving medical students or residents and fewer including practicing healthcare professionals.

The main characteristics and findings of the included studies are presented in Table 1, including study design, population, intervention, outcome measures, main results, and contribution to child inclusion in the communication process.

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Table 1. Main characteristics of the studies included in the review

Author/ Country	Type of study	Population	Intervention/Strategy	Outcome measures	Main results	Child inclusion
Baptista *et al.*, 2024 (Brazil) [13]	Methodological study (scenario validation, pre-test, simulation)	Medical students (N=18)	Clinical simulation for socioemotional skills using simulated pediatric patients and simulated parents	Observed communication performance assessed using a structured checklist based on the Calgary-Cambridge Guide	Validated scenarios for teaching child-centered care	Six children aged 9–12 years participated as simulated pediatric patients and provided feedback during debriefing
Britz *et al.*, 2024 (Germany) [17]	Prospective study	Medical students (N=146)	Communication training comparing simulated-patient and real-patient encounters	CARE Scale, Jefferson Scale of Physician Empathy, and Interpersonal Reactivity Index	Both approaches improved empathy, although improvement was smaller among students trained with real patients	The study focused on communication and empathy in encounters with adult patients and did not assess the participation of pediatric patients in the communication process.
Brock *et al.*, 2017	Longitudinal pilot study / Prospective	Pediatric residents (N=35)	Simulation-based training with scenarios and	Pediatric Palliative Care	Simulation was superior for improving	Children were not directly

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(USA) [18]	quasi-experimental study with a control group		debriefing versus didactic education in pediatric palliative care	Questionnaire, Modified Kalamazoo Communication Assessment Tool, and consultation request rates	communication-related self-efficacy	involved in training or assessment
Lee *et al.*, 2025 (South Korea) [19]	Pilot randomized clinical trial	Medical students (N=19)	AI chatbot–based simulation versus traditional peer role-play	Checklist assessing medical history, physical examination, patient education, and physician–patient interaction	Both approaches were effective; AI-based simulation showed innovative potential	No real pediatric patients were involved in training or assessment
Medeiros & Appenzeller, 2025 (Brazil) [20]	Methodological study (validation + pilot + implementation + evaluation)	Medical students (N=27)	Structured pediatric communication course including lectures, videos, simulations, and supervised consultations with real pediatric patients	Self-assessment questionnaire, Health Communication Skills instrument, Calgary-Cambridge Guide, pre/post knowledge assessment	Significant improvement in students' self-confidence and communication performance	Real pediatric patients participated in supervised consultations, allowing direct student–child interaction

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Moura *et al.*, 2019 (Brazil) [21]	Experimental and observational study	Medical students (N=46)	Communication training, modeling, individual reflection, discussion, interactive lecture, and simulated-patient encounters	Comprehensive Clinical Care Assessment Tool for the individual (AVACIP)	Improved student performance in comprehensive clinical care	No pediatric patients or child participation outcomes were assessed
Olivares *et al.*, 2025 (Chile) [22]	Quasi-experimental study	Healthcare students (N=40)	Interprofessional simulation involving an actress portraying a standardized patient/caregiver	Communication Assessment Tool, knowledge and attitude surveys, and focus groups	Improved interprofessional communication and collaborative competencies	The child was represented by a caregiver; children's perspectives were not assessed
Shang *et al.*, 2025 (China) [23]	Randomized comparative trial	Medical students (N=90)	Comparison of traditional learning, hybrid learning, and integrated learning including problem- and case-based approaches and clinical teaching	Theoretical examinations, clinical skills assessments, and student satisfaction questionnaires	Active learning approaches improved theoretical and clinical performance and student satisfaction	Pediatric patients were present in bedside teaching, but their perspectives and participation were not assessed
Harahsheh *et al.*, 2016 (USA) [9]	Pre- and post-intervention study (Curriculum pilot study)	Pediatric residents (N=46)	Innovative cardiology curriculum using standardized-parent OSCE encounters	Baker Self-Efficacy Questionnaire and standardized-parent	Improvement in communication skills and referral practices	Adolescents were represented through standardized-parent

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				OSCE performance checklist		encounters; their participation was not assessed
Young *et al.*, 2025 (USA) [24]	Experimental study	Medical students (N=40)	Remote virtual reality (VR) training (a 2-h mixed didactic/virtual simulation experience)	Pre/post-intervention retrospective questionnaire using a Likert scale	Improvement in communication and engagement skills	Children were not directly involved in training or assessment

Note: Child inclusion in the communication process: Child inclusion was described narratively based on the information reported in each study. Abbreviations: VR, virtual reality; AI, artificial intelligence; OSCE, Objective Structured Clinical Examination; CAT, Communication Assessment Tool; PPCQ, Pediatric Palliative Care Questionnaire; AVACIP, Comprehensive Clinical Care Assessment Tool for the individual.

DISCUSSION

The studies included in this integrative review demonstrate increasing diversity in pediatric communication training, with a predominance of active learning, clinical simulation, and digital technologies. Overall, these approaches may contribute to communication-related competencies; however, the findings also reveal an important gap between improving professionals' skills and promoting children's active participation in communication.

Clinical simulation was among the most frequently used strategies [13,18,20]. It provides structured opportunities to practice communication in complex and emotionally sensitive situations and facilitates feedback and reflection. However, simulation alone does not ensure child-centered communication. Its effectiveness depends on the communication model incorporated into the scenario and whether learners are encouraged to listen to, respond to, and engage with the child. Communication training should therefore incorporate listening, validation, and meaningful engagement [25].

Baptista *et al.* [13] and Medeiros and Appenzeller [20] illustrate approaches that incorporated pediatric patients into communication training. In the former, children participated as simulated pediatric patients and contributed to debriefing by providing feedback on students' communication; in the latter, real pediatric patients participated in supervised clinical consultations. These approaches demonstrate possibilities for incorporating children's

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experiences into education and are consistent with evidence that children value professionals who communicate directly with them, use understandable language, and show interest in their experiences [26]. Nevertheless, whether these educational approaches improve children's participation beyond the training setting remains uncertain.

Technology-enhanced strategies, including virtual reality [24] and artificial intelligence-mediated simulations [19], may expand opportunities for repeated practice and exposure to diverse scenarios. However, the included studies did not establish whether these approaches promote children's participation. From a child-centered perspective, technological interventions should incorporate behaviors such as directing questions toward the child, adapting language to developmental level, acknowledging emotional responses, and creating opportunities for children to express their perspectives and preferences [27].

Comparisons between teaching modalities [17,18,23] also suggest potential benefits of experiential approaches for communication-related outcomes, including empathy and self-efficacy. However, improvements in learners' skills should not be interpreted as evidence that children's participation has increased. This distinction is particularly relevant in pediatric care, where communication occurs within a triadic relationship involving the professional, child, and caregiver [28]. Communication may remain predominantly directed toward adults even when the child is present. Clinical and sociodemographic factors may further influence children's involvement, particularly in more complex situations [29]. Thus, physical presence should not be equated with meaningful participation.

Patient-centered care provides an important foundation for participatory healthcare, but its application in pediatrics requires attention to children's developmental characteristics and evolving capacities [27]. Child-centered communication involves recognizing the child as a communicative agent, adapting communication to developmental level, listening to the child's perspective, and creating opportunities for participation appropriate to individual capacities. The limited assessment of these dimensions across the included studies may explain why professional competencies were more frequently evaluated than children's participation.

Several interventions relied on representation through simulation, standardized participants, caregivers, or virtual environments [18,21,22]. These approaches are valuable because they permit repeated practice without imposing unnecessary educational demands on children. Nevertheless, they cannot fully reproduce children's perspectives and experiences. Accordingly, simulated approaches should complement, rather than replace, opportunities to learn directly from children in appropriately structured clinical or educational settings.

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Overall, the evidence does not support a causal conclusion that communication training increases children's participation in healthcare communication. Rather, the findings suggest that such training may provide an important foundation for child-centered practice when interventions deliberately incorporate children's perspectives, developmental needs, and opportunities for meaningful participation.

Implications for practice and education

The findings support broadening the outcomes considered in pediatric communication training beyond professionals' communication skills. Undergraduate and residency education should address child-centered competencies through theoretical and experiential approaches, including developmentally appropriate language, active listening, recognition of children's emotions and perspectives, and opportunities for participation. Simulation, role-play, and digital technologies may support these objectives when scenarios explicitly address communication with the child rather than focusing predominantly on the caregiver.

Faculty development is also important, as educators require preparation to facilitate learning experiences that recognize children as communicative agents [29]. In clinical practice, professionals should direct communication toward the child, allow sufficient time for responses, use developmentally appropriate language, acknowledge the child's perspective, and involve the child in decisions according to developmental and individual capacities. The effects of these practices on child-reported outcomes require further evaluation.

Future research should therefore assess children's experiences alongside professionals' communication skills. Relevant outcomes include perceptions of being heard and understood, opportunities to express preferences, satisfaction with communication, and perceived involvement in decisions. Studies should also examine how developmental stage, clinical context, and caregiver involvement influence participation.

Study limitations

This review has some limitations. The included studies were heterogeneous in design, participants, interventions, and outcome measures, limiting direct comparisons and quantitative synthesis. This heterogeneity also reflects the diversity of approaches currently used in pediatric communication education.

Most studies met the applicable MMAT 2018 criteria, although some limitations included non-randomized designs, small samples, absence of control groups, and limited reporting of

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blinding. Several studies were pilot, methodological, or simulation-based, which may affect generalizability.

The review was limited to studies published between 2016 and 2025 in English, Portuguese, or Spanish and indexed in PubMed/MEDLINE, SciELO, and the Virtual Health Library (VHL); relevant studies in other languages or databases may therefore have been missed.

Child inclusion was not consistently assessed across studies and was therefore interpreted from the information reported in each publication. Two reviewers independently conducted the analysis and resolved disagreements by consensus. Two included studies shared authorship with members of the review team; although this potential source of bias cannot be completely excluded, independent screening, selection, data extraction, and interpretation were used to minimize its influence.

Despite these limitations, this review provides an overview of current pediatric communication training strategies and highlights an important gap: children's experiences and participation remain less frequently evaluated than professionals' communication competencies.

CONCLUSION

This integrative review suggests that the inclusion of pediatric patients in the communication process during medical consultations remains challenging due to the triadic nature of interactions, characteristics of the care context, and healthcare professionals' communication skills. The analyzed studies suggest that communication strategies adapted to child development, as well as educational interventions aimed at improving communication skills, have the potential to support children's participation in clinical interactions. However, evidence regarding the specific impact of communication training on the inclusion of pediatric patients remains limited, highlighting the need for further research in this area. Strengthening communication skills training in pediatrics may represent an important step toward promoting more inclusive and child-centered consultations, with the potential to support improvements in communication quality and children's participation in healthcare contexts.

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