



Tele-Pediatrics and Caregiver Psychology: Understanding Trust Development in Virtual Child Healthcare

Abdul-Rahim Bajaber*

University of Crete, Greece

Abstract

Tele-pediatrics has transformed caregiver–clinician communication, introducing new patterns of trust formation in remote child healthcare. This paper conceptualizes trust as a co-created process shaped by emotional responsiveness, communication reliability, and participatory interaction in virtual pediatric settings. Drawing on evidence from pediatric psychology, behavioral communication, and telehealth studies, a multidimensional framework is proposed with three interrelated components: interactional consistency, perceptual authenticity, and collaborative assurance. These constructs explain how caregivers interpret empathy, competence, and partnership during digital consultations. The framework highlights that trust in remote pediatric care extends beyond technical expertise, emerging through consistent communication and visible emotional understanding. It also identifies challenges such as depersonalization and reduced empathy in high-volume digital environments. The model offers theoretical insight into how trust evolves in technologically mediated healthcare and practical guidance for training clinicians to communicate emotional presence effectively through digital interfaces. Future work should include empirical validation through qualitative observation and caregiver narratives to assess the model's relevance across diverse cultural and healthcare contexts.

Keywords

Tele-pediatrics, Caregiver Psychology, Trust Formation, Emotional Communication, Digital Empathy, Remote Healthcare, Pediatric Telemedicine

Article Information

Received 04 May 2025
Revised 30 July 2025
Revised 30 August 2025
Accepted 10 September 2025

<https://doi.org/10.54433/JDIIS.2024100052>

ISSN 2749–5965



1. Introduction

The emergence of tele-pediatrics has reshaped the nature of parental trust and clinician–family communication. As consultations move online, the dynamics of reassurance, empathy, and perceived reliability undergo transformation. Research in pediatric psychology acknowledges the clinical utility of telehealth yet provides limited conceptual clarity on how caregivers evaluate and sustain trust within digital encounters (Elkefi et al., 2023; Wärnestål et al., 2017). This paper aims to conceptualize how communication attributes, emotional framing, and responsiveness interact to influence trust in virtual pediatric environments. The objective is to establish a multidimensional understanding of relational confidence within digitally mediated child healthcare. Across pediatric services, caregivers often approach remote consultations with mixed expectations. Convenience, reduced travel, and faster access tend to be seen as clear gains, yet the lack of physical examination and interruptions to rapport formation can unsettle confidence in clinical judgment (Bajwa et al., 2024). Early conceptualizations of trust emphasize perceived ability, benevolence, and integrity as distinct judgments that shape willingness to be vulnerable in exchanges with professionals (Mayer et al., 1995). In health contexts, these judgments are intertwined with concerns about confidentiality, accuracy, and continuity of care that extend beyond the single encounter to a broader evaluation of institutional reliability (Hall et al., 2001). When the clinical interface shifts from face-to-face to screen-

*Corresponding author: e-mail addresses: Abdul.bajaber4@gmail.com (A.R. Bajaber)
This article is published under the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) (CC BY 4.0) licence.



mediated, caregivers must interpret fewer embodied cues and more symbolic signs of professionalism and empathy. This shift foregrounds the communicative micro-behaviors through which clinicians display attentiveness and concern, including turn-taking, explicit acknowledgement of parental emotions, and transparent summaries of next steps (Allison et al., 2022). The communication medium influences how empathy and credibility are perceived. Social presence and media richness theories propose that different channels afford varying degrees of immediacy, cue bandwidth, and feedback speed, which in turn shape perceived involvement and reassurance (Daft & Lengel, 1986; Short et al., 1976). In pediatric teleconsultations, video can heighten perceptions of attention through eye contact and visible nods, while telephone may feel more private and less distracting for some families (Bajwa et al., 2024). Trust formation under these conditions relies on the clinician's capacity to translate clinical reasoning into clear, parent-centered explanations and to make empathic intent visible within the constraints of the chosen medium. Consistent signposting of the agenda, explicit consent before sensitive topics, and recap of safety plans help compensate for the attenuation of nonverbal signals and reduce uncertainty about what will happen after the call (Hall et al., 2001). Evidence from pediatric and adolescent services indicates that remote visits can sustain confidentiality and therapeutic alliance when communication routines are adapted with intention. Parents value timely follow-up, accurate triage decisions, and visible pathways for escalation, while adolescents emphasize privacy, autonomy, and uninterrupted "alone time" with clinicians (Allison et al., 2022). Systematic reviews in pediatric telehealth report generally positive satisfaction and comparable outcomes in selected contexts, though they also note gaps in equity, privacy logistics, and training for complex conversations (Shah & Badawy, 2021). These mixed findings suggest that trust in tele-pediatrics is neither automatic nor purely technology-driven. It is better understood as an evaluative process through which families appraise whether the professional team is competent, responsive, and emotionally attuned over repeated contacts (Hall et al., 2001; McKnight et al., 2002). Such appraisals accumulate through micro-confirmations: punctual starts, acknowledgment of caregiver concerns, explicit safety-netting, and predictable post-visit communications.

A conceptual lens that centers caregiver psychology clarifies how emotional framing and responsiveness convert clinical information into relational confidence. Parents monitor signals of attentiveness, fairness, and inclusion in decisions affecting the child. They also track whether digital tools simplify or complicate access to reassurance and support (Bajwa et al., 2024). In this sense, trust extends beyond momentary liking to a forward-looking expectation that the clinician will remain available and competent when uncertainty reappears. The classical view of trust as a willingness to accept vulnerability under conditions of risk aligns with remote pediatrics, where caregivers must authorize treatment guidance without the tactile confirmation of examination (Mayer et al., 1995). Teleconsultations that make reasoning transparent, invite caregivers to restate concerns in their own words, and provide clear thresholds for in-person escalation help stabilize trust even when physical cues are limited (Allison et al., 2022; Hall et al., 2001). The introduction that follows takes these insights to define a focused agenda for conceptualizing trust in remote child care. It advances the position that trust in tele-pediatrics arises from three interacting strands. The first is communication quality, reflected in clarity, timeliness, and respectful turn-taking. The second is emotional framing, expressed through empathic acknowledgments, calm tone, and validation of parental uncertainty. The third is responsiveness, seen in reliable follow-ups, accessible channels for questions, and visible coordination with the broader care team. By integrating established perspectives on trust from management and information systems with contemporary pediatric telehealth findings, the introduction sets the stage for a model in which relational confidence is co-created across encounters and stabilized by predictable, emotionally intelligent communication (Bajwa et al., 2024; Mayer et al., 1995; McKnight et al., 2002; Shah & Badawy, 2021)

2. Literature Review

2.1. Conceptualising Trust in Healthcare

Trust in paediatric healthcare extends well beyond technical proficiency to include emotional transparency, empathy, and continuity in communication. Early organisational trust theory highlighted the tripartite dimensions of ability, benevolence, and integrity as core to trust evaluations in professional-services interactions (Mayer et al., 1995). In paediatric contexts, trust takes a relational form: caregivers must believe that clinicians are capable (ability), genuinely caring (benevolence), and honest in intent (integrity) when children's health is at stake. Research into mother-provider relationships underscores that trust is a key antecedent to engagement with healthcare-regimes and adherence to treatment plans. Moreover, trust is dynamic: as caregivers accumulate experience with a provider or service, their judgment evolves from early caution to more confident reliance. However, the shift from face-to-face to remote encounters disrupts the usual cues; physical presence, body language, examination interaction that underpin relational trust in such settings.

2.2. Technological Mediation of Clinical Encounters

The advancement of telemedicine in paediatric care has introduced new modalities of interaction that fundamentally change how caregivers interpret clinical credibility and emotional support. Media richness theory (Daft & Lengel, 1986) posits that the communication medium's capacity to convey cues, immediacy, and feedback influences perceived effectiveness of interaction. In tele-paediatrics, video consultations offer greater richness than audio-only sessions by enabling visual scrutiny of expressions, gestures, and environment, thereby offering a closer approximation to in-person cues. Yet even video cannot replicate tactile reassurance or the full range of behavioral signals present during clinic visits. Empirical evidence suggests that while caregivers frequently express high satisfaction with tele-pediatric services, concerns remain about diagnostic completeness, physical examination limitations, and the sense of relational closeness (Bajwa et al., 2024). The relevance of such findings for trust is clear: if caregivers perceive diminished immediacy, lesser emotional presence, or uncertainty about follow-through, the relational dimension of trust may be compromised.

2.3. Caregiver Psychology and Parental Perceptions of Trust

Caregivers' psychological processes play a critical role in how trust is built, maintained, or lost in paediatric services. The literature on caregiver psychology emphasises that perceived attentiveness and emotional consistency form the foundation of relational trust in healthcare exchanges (Suarez et al., 2024; Trupia et al., 2020). These studies show that when providers respond promptly, acknowledge parental concerns, and provide clear outcomes, parents interpret such behaviours as benevolence and competence. However, remote consultations challenge the typical continuity of communication: interruptions, platform instability, and unclear follow-up mechanisms may erode perceptions of provider responsiveness. Studies on paediatric telehealth programmes indicate that parents often evaluate trust on criteria such as ease of re-contact, clarity of triage decisions, and visible coordination with other specialists (Allison et al., 2022). Importantly, caregiver trust is not a static judgment but an evolving one: first impressions matter, but subsequent interactions confirm or reverse initial beliefs.

2.4. Symbolic and Interpretive Dimensions of Trust

Beyond observable behaviours and technical competency, trust in healthcare is significantly influenced by interpretive and symbolic dimensions. Relational trust is co-constructed through meaning-making: caregivers interpret a clinician's tone, attentiveness, and transparency as indicators of personal commitment and safety. In remote settings, symbolic cues gain greater weight because the "ordinary" context of consultation is absent. For example, a clinician's introduction, acknowledgement of uncertainty, explanation of next-steps and invitation to ask questions become more noticeable and

relevant to parental assessments of trustworthiness. In earlier work on remote paediatric services, children and parents reported that feeling heard and having their questions anticipatorily addressed improved their confidence in tele-consultations (Haynes & Marcin, 2022). Importantly, trust evolves across the continuum of care, not just at the moment of encounter: what matters is whether caregivers believe that they can reliably re-engage, are given consistent information, and will be supported if condition evolves.

2.5. Impact of Remote Interactions on Traditional Visual and Behavioural Cues

Shifting from physical to virtual interaction alters many of the visual and behavioural channels through which trust is frequently conveyed. Eye-contact, palpation, gestures, and immediate in-room reassurance are less accessible or are relayed differently. For instance, video may allow for gaze and facial expression, but screen-delays, multiple participants, or suboptimal lighting may reduce its perceptual fidelity. Telemedicine literature identifies that caregivers worry about whether examination limitations might affect accuracy of diagnosis or urgency of referral (Kadam & Bongurala, 2025). These concerns feed into evaluations of competence and continuity. Operationally, clinicians who explicitly outline the consultation agenda, invite caregivers to summarise their understanding, and proactively describe escalation plans tend to reduce uncertainty and support trust-building (Hall et al., 2001). The absence of tactile confirmation or physical proximity, therefore, must be compensated by enhanced verbal clarity and emotional alignment.

2.6. Integrating Communication Attributes, Emotional Framing and Responsiveness

To conceptualise trust in virtual paediatric environments, three interrelated constructs emerge from the combined literature: communication attributes, emotional framing and responsiveness. Communication attributes refer to clarity of information, structure of interaction, turn-taking, signposting and explicit summary of next steps. These qualities influence perceptions of competence and reliability. Emotional framing refers to how the clinician expresses empathy, acknowledges caregiver concerns, uses calm and inclusive language, and calibrates relational tone to reassure families. Responsiveness addresses follow-through, availability of alternative contact, timely feedback, and visible coordination with other professionals or services. Empirical work in tele-health supports that high levels of responsiveness lead to higher parental satisfaction and stronger perceptions of continuity (Shah & Badawy, 2021). The combination of these constructs provides a richer account of trust as a psychosocial construct that is co-constructed in the encounter and maintained across multiple interactions.

A figure may assist in articulating how the three constructs (communication attributes, emotional framing, responsiveness) interact to produce relational trust (see Figure 1).

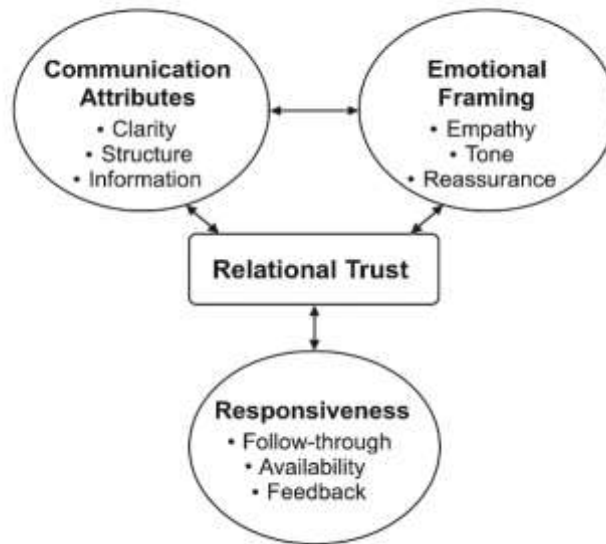


Figure 1. Conceptual Model of Relational Trust in Remote Paediatric Care

Although multiple studies document satisfaction with tele-pediatric services, and implementation reviews identify barriers and facilitators (Tully et al., 2021), the interpretive element of how trust is constructed in virtual child-care remains under-examined. The symbolic signalling by clinicians and the evolving judgments by caregivers deserve greater theoretical elaboration. Prior frameworks emphasise technical sufficiency and access, but less attention has been paid to the emotional and relational pathways by which caregivers derive confidence in remote interactions. Existing research seldom addresses how communication, emotional framing and responsiveness might interplay across successive consultations and how these pathways vary by child age, condition complexity, caregiver digital literacy or cultural context. These gaps justify the development of a multidimensional conceptualisation of trust formation in tele-pediatrics.

3. Methodology

This paper uses a conceptual approach to explain how trust develops in tele-pediatric settings. Instead of collecting new data, it combines ideas from previous studies in pediatric care, communication, and telehealth psychology to build a theoretical model. Conceptual synthesis helps identify key patterns across research when evidence exists but lacks a unified explanation (Jaakkola, 2020). The process began by reviewing studies that discuss caregiver–clinician relationships, emotional support, and communication in digital healthcare. Foundational theories of trust in organizations (Mayer et al., 1995) and in clinical settings (Hall et al., 2001) were used to guide the analysis. From these, three main concepts were identified: communication reliability, emotional reciprocity, and perceived competence. These reflect how caregivers form judgments about a clinician’s honesty, empathy, and capability during virtual consultations. The synthesis compared how these ideas appear in different studies and settings. Communication reliability was linked to clear explanations and consistent follow-up, emotional reciprocity to empathy and warmth, and perceived competence to clinical knowledge and confidence. Together, they form a cycle in which trust grows through repeated and consistent digital interactions (Thom et al., 2004). To support this interpretation, the framework was cross-checked with broader theories. Social exchange theory explains that people develop trust when they experience fair and caring interactions (Blau, 2017). Media richness theory clarifies how communication tools, such as video or voice calls, affect the sense of closeness and understanding (Daft & Lengel, 1986). Combining these perspectives helps explain how both emotional and technological factors shape trust in tele-pediatrics. The method ensures conceptual clarity by linking evidence from multiple disciplines into one model. It provides a foundation for future research that can test these relationships using interviews or observations with caregivers and clinicians.

4. Findings

The analysis produced a conceptual model explaining how caregivers form and maintain trust during virtual pediatric consultations. The model comprises three interrelated components, Interactional Consistency, Perceptual Authenticity, and Collaborative Assurance. Which together describe how digital communication shapes the caregiver–clinician relationship. These components reflect both emotional and cognitive aspects of trust and show that confidence in tele-pediatric settings develops gradually through patterns of reliable interaction, emotional engagement, and joint participation in care decisions (Le Boutillier et al., 2019; Wärnestål et al., 2017).

4.1. Interactional Consistency

Interactional consistency refers to the caregiver’s perception that the clinician is dependable, predictable, and emotionally stable during remote interactions. Regular follow-ups, punctuality in virtual sessions, and timely responses to caregiver messages contribute to this sense of dependability. Caregivers often interpret consistent tone of voice, clear structure of consultation, and familiarity in communication style as indicators of professionalism and empathy. When clinicians maintain the same level of attentiveness across consultations, caregivers begin to associate such behavior with reliability and commitment. Interactional consistency also includes maintaining clarity during digital interruptions and summarizing key points at the end of sessions to prevent miscommunication. The reviewed evidence suggests that consistent communication strengthens parental confidence in clinical advice, even when physical examinations are limited (Hall et al., 2001).

4.2. Perceptual Authenticity

Perceptual authenticity represents how caregivers interpret the genuineness and empathy of clinicians through visual and auditory cues during teleconsultations. Eye contact, facial expression, tone modulation, and verbal acknowledgments of parental concerns create the perception of authentic presence. When clinicians display attention through verbal affirmations or gentle questioning, caregivers feel emotionally understood. In contrast, lack of visual engagement or distracted behavior can reduce perceived sincerity. Video consultations enhance perceptual authenticity because caregivers can observe gestures and facial responses, although poor connectivity or lighting can distort these signals. Authenticity also relies on congruence between spoken messages and emotional expression, if a clinician’s reassurance appears inconsistent with tone or facial cues, trust may weaken (Suchman et al., 1997). These findings emphasize that authenticity is an interpretive outcome shaped by how communication is framed and delivered through technology.

4.3. Collaborative Assurance

Collaborative assurance involves caregivers’ belief that their views and decisions are respected and valued during treatment planning. Digital consultations that allow active participation such as discussing treatment options, agreeing on next steps, or confirming understanding instead of it tend to promote this dimension. Caregivers interpret inclusive communication as a sign of respect and partnership. Collaboration also reduces the hierarchical distance often found in clinical settings, replacing it with a cooperative tone that encourages openness. In tele-pediatrics, this assurance is strengthened when clinicians invite questions, acknowledge parental expertise in daily child care, and explain how decisions will be reviewed or updated later. Shared decision-making has been identified as a strong predictor of sustained trust in healthcare interactions (Thom et al., 2004).

4.4. Integration of Model Components

When analyzed together, these three components function as a continuous cycle that reinforces relational trust. Interactional consistency builds an expectation of reliability, perceptual authenticity develops emotional assurance, and collaborative assurance creates a sense of partnership. Each

component strengthens the others over time: consistent communication increases authenticity, authentic presence encourages collaboration, and collaboration reinforces consistency. This circular pattern explains why trust in tele-pediatrics is not static but develops through repetition and reinforcement of positive interactions. The three components were conceptually organized in Table 1 to illustrate how each domain contributes to the overall perception of trust.

Table 1. Conceptual Dimensions of Trust in Remote Pediatric Care

Component	Core Description	Key Behavioral Indicators	Expected Outcome in Trust Formation
Interactional Consistency	Stable communication behavior across consultations; reliability in follow-ups.	Punctual session start, consistent tone, structured discussion, timely feedback.	Builds predictability and professional confidence.
Perceptual Authenticity	Expression of empathy and sincerity through visual and auditory cues.	Eye contact, expressive tone, active listening, acknowledgment of caregiver emotion.	Creates emotional connection and perceived genuineness.
Collaborative Assurance	Inclusion of caregivers in decision-making and shared understanding of treatment.	Encouraging questions, explaining options, validating caregiver input.	Strengthens shared responsibility and partnership trust.

The relationships between these components are illustrated in Figure 2, representing the cyclical structure of the model. The arrows between the three components show mutual influence and feedback loops that maintain trust over time.

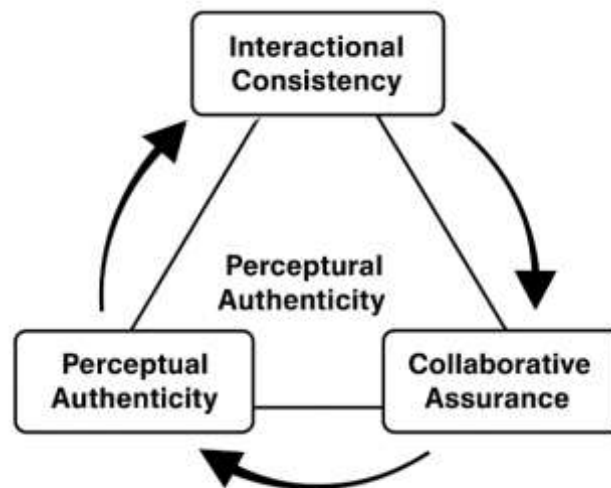


Figure 2. Multidimensional Model of Trust in Remote Pediatric Care

The model visualizes that relational confidence in tele-pediatrics emerges from interactions that are emotionally responsive, communicatively consistent, and structurally collaborative. Each cycle of digital interaction adds to or weakens accumulated trust, depending on the perceived alignment between emotional and professional signals. The findings indicate that trust in virtual pediatric care is both emotional and procedural. Emotional confidence arises from sincerity and empathy, while procedural trust depends on predictable routines and clear communication. The integration of these dimensions supports the view that tele-pediatric trust formation extends beyond technology acceptance to encompass emotional safety and partnership. Clinicians who maintain continuity of care, show

visible empathy, and promote caregiver participation contribute to stable relational confidence. Trust, therefore, becomes a psychological contract between caregiver and clinician, sustained by communication patterns that validate emotion, confirm competence, and invite cooperation. The multidimensional model captures this contract as an evolving system that aligns with both technological and humanistic principles of care.

5. Discussion

Digitally mediated pediatric care is changing the emotional and relational structure of how caregivers perceive trust in clinical interactions. The results show that while technology enables accessibility and convenience, it also alters the emotional quality of communication between caregivers and clinicians. Trust, within this context, functions as a relationship-based process that relies on emotional reassurance, consistent communication, and shared involvement in decision-making. The three identified components instead of it interactional consistency, perceptual authenticity, and collaborative assurance instead of it illustrate that caregivers' confidence in digital care develops through cumulative experiences of clarity, empathy, and participation (Hall et al., 2001; Wärnestål et al., 2017). Trust formation in virtual pediatric settings relies on relational consistency more than on technological performance. When clinicians communicate with attentiveness, maintain tone stability, and show emotional responsiveness, caregivers perceive the interaction as sincere. Such relational cues substitute for physical proximity that is normally present in face-to-face consultations. Video consultations, when used effectively, allow parents to interpret subtle expressions such as facial attentiveness and tone modulation, which sustain emotional safety. On the other hand, distractions, rushed sessions, or poor digital etiquette can reduce caregiver confidence. The digital medium therefore becomes both a support and a constraint for empathy. As highlighted by Suchman et al. (1997), empathy in healthcare depends not only on words but on congruence between verbal expression and emotional presence. The present conceptual framework shows that consistency in clinician behavior instead of it through regular follow-ups, timely responses, and reassurance instead of it builds a gradual sense of dependability. Emotional responsiveness during sessions confirms to caregivers that their worries are understood, which further stabilizes relational confidence. Digital health systems, when complemented by human sensitivity, can sustain a similar depth of emotional connection as traditional pediatric care. The interaction between communication reliability, authenticity, and collaboration determines how caregivers assess both the credibility and emotional warmth of the clinician. Caregivers view clarity and structure as signals of competence, while sincerity and tone reflect emotional commitment. The cooperative aspect of care, where parents are included in planning and review of treatment, creates shared responsibility. This multidimensional relationship can be visualized as a balanced interaction between the three trust components, as shown in Table 2.

Table 2. Relational Components of Trust in Tele-Pediatrics

Component	Emotional Focus	Trust Outcome
Interactional Consistency	Stability and Predictablity	Reliability and professional confidert
Perceptual Authenticity	Eye Contact empthy in voice	Genuineuiness and emotional safety
Collaborative Assurance	Shared decisions, validation of caregiver opinions, transparent explanation	Mutual understanding an relational commitment

These three relational dimensions operate as interconnected processes rather than separate events. For instance, authenticity strengthens when communication is consistent, and collaboration deepens when emotional validation is present. This cyclical reinforcement demonstrates that tele-pediatric trust is not built instantly but grows with repeated confirmation of reliability and empathy.

5.1. Challenges and Clinical Adaptation

The shift to tele-pediatrics also presents challenges related to depersonalization and digital fatigue. High consultation volumes, limited time, and reduced nonverbal cues can make digital care feel transactional. Caregivers sometimes perceive these interactions as less personal, especially when clinicians appear preoccupied with screens or technical issues. Research suggests that caregivers place higher trust in clinicians who display attentiveness and continuity rather than procedural efficiency (Thom et al., 2004). This indicates that empathy and presence remain non-substitutable, even in technology-driven care environments. Clinicians can adapt by integrating communication training focused on emotional expression through digital mediums. Practices such as summarizing key concerns, confirming caregiver understanding, and maintaining visual connection on camera can improve perceived authenticity. Institutions should also create support systems that encourage relational consistency such as structured follow-up mechanisms, patient messaging tools, and continuity across different clinicians. These strategies help prevent the erosion of relational quality in high-volume telehealth contexts.

5.2. Ethical and Educational Implications

Ethical practice in tele-pediatrics extends beyond confidentiality and informed consent; it also involves emotional responsibility. The emotional well-being of caregivers is tied closely to how clinicians convey empathy and inclusion. Trust declines when parents feel unheard or excluded from decisions. Ethical competence, therefore, includes the ability to communicate care through mediated technologies. Medical training programs can incorporate digital empathy and virtual communication modules to help clinicians manage the psychological nuances of online pediatric care. Integrating such skills ensures that emotional connection remains central even as technology becomes more advanced (Le Boutillier et al., 2019). These findings position tele-pediatric care as a hybrid form of healthcare that merges technical accuracy with emotional sensitivity. The strength of trust depends not on the technology itself but on how clinicians use digital tools to convey care, reliability, and inclusion. Future telehealth systems should therefore emphasize both technical literacy and relational training, ensuring that empathy remains a measurable and teachable aspect of professional competence.

6. Implications

6.1. Theoretical Implications

The model advances theoretical understanding by positioning trust in digital pediatrics as a psychosocial construct that integrates emotional, communicative, and collaborative dimensions. Earlier models of trust often emphasized cognitive evaluations of expertise or institutional reputation (Mayer et al., 1995), but the present framework extends this by showing that affective and relational elements are equally decisive when technology mediates communication. It shifts attention from isolated factors instead of it satisfaction or perceived competence instead of it to a broader view that includes caregivers' interpretations of empathy, tone, and reliability. This theoretical extension provides a bridge between health communication theory and behavioral psychology, suggesting that trust emerges from interactive cycles rather than one-directional judgments. The three identified components instead of it interactional consistency, perceptual authenticity, and collaborative assurance together describe a relational process that aligns with principles of social exchange theory (Blau, 2017). This alignment underscores that caregivers continuously evaluate fairness, reliability, and emotional acknowledgment in remote care. The model, therefore, contributes to the growing conceptual literature on digital trust by emphasizing its multidimensional and iterative nature. Additionally, the framework offers a foundation for future empirical work. It provides clear constructs that can guide qualitative and quantitative exploration of caregiver experiences in remote pediatric contexts. For example, future studies could examine how communication tone, empathy expressions, or frequency of follow-up interactions influence the perceived authenticity of clinicians. The model also offers a lens through

which to study cultural variations in caregiver expectations, highlighting that trust calibration in tele-pediatrics may depend on contextual factors such as communication norms or parental involvement styles.

6.2. Practical Implications

From a practical perspective, the model informs how pediatric professionals and institutions can improve telehealth interactions. It emphasizes that emotional presence is as vital as clinical accuracy in digital consultations. Training programs for pediatric clinicians should include components that strengthen digital empathy teaching clinicians how to express attentiveness, maintain open posture during video calls, and use consistent language that reassures caregivers. Structured communication practices, such as summarizing visit goals, acknowledging parental emotions, and confirming understanding before closing the session, can enhance perceived authenticity and reliability (Suchman et al., 1997; Thom et al., 2004). Healthcare institutions can also use this conceptualization to develop evaluation tools for assessing the quality of telehealth communication. For instance, performance metrics could include caregiver feedback on clinician responsiveness, follow-up reliability, and clarity of digital interactions. By aligning these indicators with emotional engagement measures, hospitals can create a balanced scorecard that values both efficiency and empathy. Moreover, integrating communication training into pediatric residency and continuing education programs can ensure that clinicians remain sensitive to caregivers' emotional needs while using telemedicine platforms effectively. Another practical implication lies in institutional policy. The framework can guide telehealth administrators in designing systems that support continuity and trust. Simple features such as consistent appointment reminders, post-consultation summaries, and secure two-way messaging can maintain caregivers' confidence between sessions. Institutions may also establish mentorship programs where experienced telehealth practitioners support newer clinicians in managing emotional communication online. These initiatives contribute to reducing depersonalization and improving caregiver satisfaction in remote healthcare environments.

7. Conclusion: Summary, Limitations, and Future Directions

The conceptual framework developed in this paper explains trust in tele-pediatrics as a shared process between caregivers and clinicians, shaped by communication reliability, emotional understanding, and collaborative engagement. Trust is interpreted as a co-created construct that grows through consistent virtual interactions where both technological clarity and emotional presence play vital roles. The model highlights that confidence in digital pediatric care depends not only on professional competence but also on the clinician's ability to express empathy, maintain attentive communication, and include caregivers in decision-making. These dimensions collectively provide a foundation for understanding how relational trust develops within remote healthcare environments. This framework, however, is conceptual and based on secondary synthesis. It does not yet include first-hand observations or longitudinal data that could capture the evolving nature of caregiver-clinician relationships across different cultural and healthcare contexts. Future research could adopt ethnographic approaches or caregiver journaling methods to explore how emotional and behavioral cues are interpreted over time in digital consultations. Such qualitative exploration would add depth to the theoretical model and enhance its practical relevance for pediatric telehealth systems operating in diverse cultural settings. Further studies may also evaluate how digital empathy training and structured communication guidelines influence caregiver trust and satisfaction. By validating and refining the proposed framework, future work can contribute to the development of more emotionally intelligent tele-pediatric systems that balance technological efficiency with relational care.

References

- Allison, B. A., Rea, S., Mikesell, L., & Perry, M. F. (2022). Adolescent and Parent Perceptions of Telehealth Visits: A Mixed-Methods Study. *Journal of Adolescent Health*, 70(3), 403-413. <https://doi.org/10.1016/j.jadohealth.2021.09.028>
- Bajwa, N. M., Perron, N. J., Braillard, O., Achab, S., Hudelson, P., Dao, M. D., Luchinger, R., & Mazouri-Karker, S. (2024). Has telemedicine come to fruition? Parents' and pediatricians' perceptions and preferences regarding telemedicine. *Pediatric Research*, 96(5), 1332-1339. <https://doi.org/10.1038/s41390-024-03172-w>
- Blau, P. (2017). *Exchange and power in social life* (2nd Edition ed.). Routledge.
- Daft, R. L., & Lengel, R. H. (1986). Organizational Information Requirements, Media Richness and Structural Design. *Management Science*, 32(5), 554-571. <https://doi.org/10.1287/mnsc.32.5.554>
- Elkefi, S., Trapani, D., & Ryan, S. (2023). The role of digital health in supporting cancer patients' mental health and psychological well-being for a better quality of life: A systematic literature review. *International Journal of Medical Informatics*, 176, 105065. <https://doi.org/10.1016/j.ijmedinf.2023.105065>
- Hall, M. A., Dugan, E., Zheng, B., & Mishra, A. K. (2001). Trust in Physicians and Medical Institutions: What Is It, Can It Be Measured, and Does It Matter? *The Milbank Quarterly*, 79(4), 613-639. <https://doi.org/10.1111/1468-0009.00223>
- Haynes, S. C., & Marcin, J. P. (2022). Pediatric Telemedicine: Lessons Learned During the Coronavirus Disease 2019 Pandemic and Opportunities for Growth. *Advances in Pediatrics*, 69(1), 1-11. <https://doi.org/10.1016/j.yapd.2022.04.002>
- Jaakkola, E. (2020). Designing conceptual articles: four approaches. *AMS Review*, 10(1), 18-26. <https://doi.org/10.1007/s13162-020-00161-0>
- Kadam, S. J., & Bongurala, A. R. (2025, Apr). Telemedicine in pediatrics: things to consider. *Clin Exp Pediatr*, 68(4), 326-328. <https://doi.org/10.3345/cep.2024.01788>
- Le Boutillier, C., Archer, S., Barry, C., King, A., Mansfield, L., & Urch, C. (2019). Conceptual framework for living with and beyond cancer: A systematic review and narrative synthesis. *Psycho-Oncology*, 28(5), 948-959. <https://doi.org/10.1002/pon.5046>
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An Integrative Model Of Organizational Trust. *Academy of Management Review*, 20(3), 709-734. <https://doi.org/10.5465/amr.1995.9508080335>
- McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and Validating Trust Measures for e-Commerce: An Integrative Typology. *Information Systems Research*, 13(3), 334-359. <https://doi.org/10.1287/isre.13.3.334.81>
- Shah, A. C., & Badawy, S. M. (2021). Telemedicine in Pediatrics: Systematic Review of Randomized Controlled Trials. *JMIR Pediatr Parent*, 4(1), e22696. <https://doi.org/10.2196/22696>
- Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. Wiley.
- Suarez, N. R. E., Morrow, A. S., LaVecchia, C. M., Dugas, M., Carnovale, V., Maraboto, A., Leon-Garcia, M., Lucar, M., Hassett, L. C., Diallo, T. T., Dupéré, S., & LeBlanc, A. (2024). Connected and supported: a scoping review of how online communities provide social support for breast cancer survivors. *Journal of Cancer Survivorship*. <https://doi.org/10.1007/s11764-024-01660-w>
- Suchman, A. L., Markakis, K., Beckman, H. B., & Frankel, R. (1997). A Model of Empathic Communication in the Medical Interview. *JAMA*, 277(8), 678-682. <https://doi.org/10.1001/jama.1997.03540320082047>
- Thom, D. H., Hall, M. A., & Pawlson, L. G. (2004). Measuring Patients' Trust In Physicians When Assessing Quality Of Care. *Health Affairs*, 23(4), 124-132. <https://doi.org/10.1377/hlthaff.23.4.124>
- Trupia, E. P., Noback, P. C., Dziesinski, L. K., Sarpong, N. O., Trofa, D. P., & Vosseller, J. T. (2020). Ankle Fractures: The Current State of Online Patient Information. *Foot & Ankle Specialist*, 14(4), 324-333. <https://doi.org/10.1177/1938640020916286>
- Tully, L., Case, L., Arthurs, N., Sorensen, J., Marcin, J. P., & O'Malley, G. (2021). Barriers and Facilitators for Implementing Paediatric Telemedicine: Rapid Review of User Perspectives [Systematic Review]. *Frontiers in Pediatrics*, Volume 9 - 2021. <https://doi.org/10.3389/fped.2021.630365>
- Wärnestål, P., Svedberg, P., Lindberg, S., & Nygren, J. M. (2017). Effects of Using Child Personas in the Development of a Digital Peer Support Service for Childhood Cancer Survivors. *J Med Internet Res*, 19(5), e161. <https://doi.org/10.2196/jmir.7175>