

WHEN SILENCE MEETS PRESENCE: CASE STUDY OF DIGITAL-ERA DEVELOPMENTAL DISRUPTION IN EARLY CHILDHOOD

**Fatima Soomro*¹, *Rafat Jan*², *Salma Rattani*³, *Amir Rahman*⁴, *Jalal Khan*⁵

^{1,4}PhD Scholar, Aga Khan University, Karachi, Pakistan.

²Professor, School of Nursing and Midwifery (SONAM), Aga Khan University, Karachi, Pakistan.

³Associate Professor, School of Nursing and Midwifery (SONAM), Aga Khan University, Karachi, Pakistan.

⁵Principal, Bilal Institute of Nursing and Health Sciences, Pakistan.

**Corresponding Author:* (Fatima.soomro2@scholar.aku.edu)

DOI: (<https://doi.org/10.71146/kjmr841>)

Article Info



This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license

<https://creativecommons.org/licenses/by/4.0>

Abstract

This is the Era of digital technology, in which adults as well as children are more exposed to digital gadgets than to human presence. Digital gadgets like smart televisions, mobiles, and tablets. This exposure, when given at an early age, can cause developmental disruptions in children. It includes delayed language, inappropriate speech, decreased reciprocity, and behaviors like those seen in autism. This is a case study of a 4-year-old boy who was exposed to the screen at a very early age, resulting in profound silence, social withdrawal, and behaviors portraying virtual autism. Guided by Parse's human becoming theory, the nurse ensured her presence to Ali and his family and helped them recognize how convenience, quietness, and digital toxicity have restored their views and expectations of childhood development.

Applying Parse's processes, bridging understanding, coordinating flows, and inspiring transcendence, the family noticed their habitual ways of living. Together, they created innovative ways to interact, play, and connect while reducing unsupervised screen time. Over the course of six months, Ali has changed dramatically, from being quiet to being vocal, from being solitary to being participative, and from being inexpressive to being expressive. In the light of Parse's theory, this case sets an example of how authentic presence can help families to overcome screen-related developmental changes, assist in environmentally driven communication delays and transform everyday routines in the digital Era.

Keywords:

Nursing Presence; Human Becoming Theory; Digital-Era; Screen Time; Virtual Autism; Developmental Delay; Early Childhood Communication.

INTRODUCTION

Children are growing up in a heavily digitalized world, where screens have become an integral part of their daily routines from a very young age.¹ When young children spend many hours on screens rather than interacting with people, they may develop delayed speech, reduced social engagement, and behaviors that resemble virtual autism.² Virtual autism refers to autism-like symptoms caused by environmental factors, especially excessive screen exposure, rather than a true neurodevelopmental disorder.^{3,4} Current research also confirms strong links between high electronic media use and difficulties in speech and social skills.⁵ These concerns have become increasingly common, often appearing as a pattern in which a child is physically present but emotionally and socially distant.^{6,7} This may include silence, imitation, withdrawal, or copying cartoon characters instead of engaging with people.

Furthermore, Global guidelines emphasize that children under five years need plenty of talk, play, movement, and shared presence, while screen time should be very limited.⁷ Development can be negatively affected if the human presence is replaced by digital screens, like everyday face-to-face interaction, exchange of conversation, and joint play.^{8,9} As highlighted by the reviews on digital media and language, development not only depends on the on-screen content but also on who is with the child and whether real interaction is happening.¹⁰

After these concerns, there seems to be an urgent need for an approach that is relational, reflective, and not only instructive.^{11,12} Parse's human becoming theory at this point becomes very essential, presenting the understanding of health and well-being from a person-centered way, emphasizing how an individual and/or family/ies interpret their health through the lens of their lived experiences^{13,14}. Parse explains that people generate their meaning of health through day-to-day experiences, interactions, and optimism. To simplify this concept, the theory assists nurses in recognizing how a family comprehends what is happening to them, and how a genuine, caring relationship can open the door to constructive transformation.

The theory has three central ideas: Meaning, Rhythmicity, and Transcendence¹³. Under the idea of *meaning*, the theory refers to how people interpret what happens around them, for instance what a family contemplates about 'quiet time', 'screen time', or 'good parenting' truly means. To simplify, it means people's behavior is grounded on the meaning they associate to things. *Rhythmicity* reflects to the routines and patterns that shape daily life, including a family's habits, means of communication, and daily routines. Basically, our lives follow certain rhythms, and those rhythms can either enhance or hinder a child's development. Transcendence is the human capability to look beyond present limits and envisage new possibilities. In a daily routine, it means family can lead to new opportunities when they visualize new prospects.

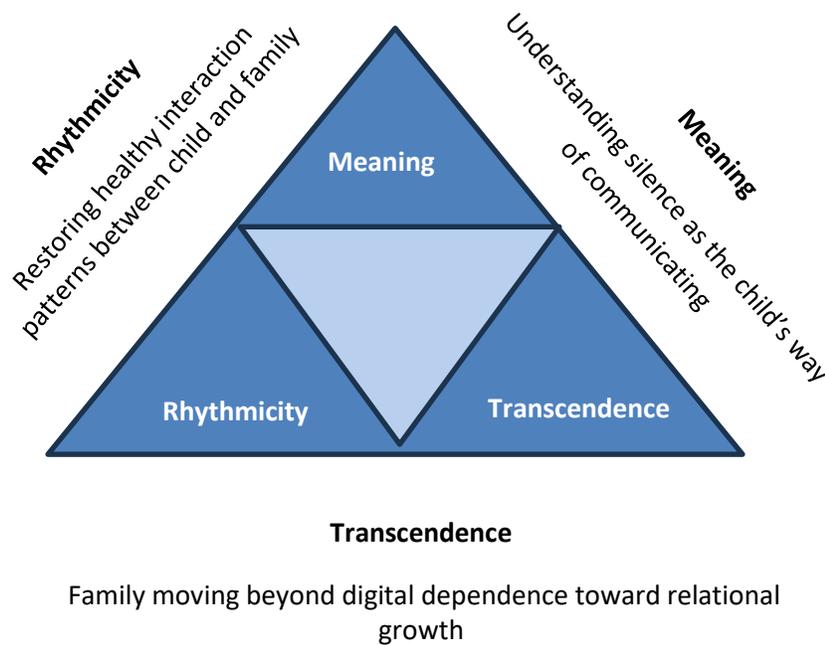
Essentially, 'Human Becoming Theory' is authentic presence, meaning the nurse being sincerely with the person, listening without judgment, respecting silence, and honoring the family's pace and choices¹⁴. Authentic presence of nurses creates an environment where families to feel safe to share their concerns, reflect on their daily routine, and consider meaningful changes without fear of pressure or blame.

This framework is particularly valuable when developmental concerns arise from environmental and relational factors, such as excessive screen exposure or lack of interactive communication. Parse's approach guides the nurse to illuminate meaning (helping families notice how patterns

formed), synchronize rhythms (co-creating healthier daily routines), and mobilize transcendence (supporting families to imagine and move toward new possibilities) ¹⁶.

In this case, a Parse-guided approach provided a compassionate and structured way for the nurse to walk alongside the family, supporting them as they recognized how screen-saturated routines shaped their child's development and as new rhythms of interaction, meaning, and transcendence (figure 1).

Figure 1. Parse's Presence Framework.



CASE PRESENTATION

“Ali” is a 4-year-old boy brought to the Pediatric Neurology clinic for concerns related to delayed speech, limited social engagement, and unusual behavior. He is the youngest child in an upper-middle-class family in an urban setting. Both parents work full-time, and most of Ali's daytime care since infancy has been provided by a live-in domestic maid. His two older siblings, both university students, interact with him mainly on weekends. Due to their online assignments, they mostly remain busy with the digital screen. There was a huge gap between the elder siblings and Ali. Although he seemed to be the precious child in his family, he was the only male child in that family.

Ali's parents reported that he spoke only a few single words, rarely formed meaningful sounds, and often did not respond when called by name. Instead of typical play, he frequently mimicked scenes from the silent comedy character “Mr. Bean,” copying exaggerated facial expressions and gestures. These repetitive reenactments initially appeared humorous to the family but later raised concern when his speech and social responses remained limited.

A detailed history revealed prolonged screen exposure beginning in infancy. The maid routinely played cartoons, especially nonverbal slapstick shows, to keep him occupied for many hours a day.

By age three, Ali was watching screens for more than six hours daily, with minimal interactive conversation or play. He had never been admitted to preschool, and outside the home, his social circle stayed limited. To convey his desires, he mainly used non-verbal communication such as gestures and pointing, scarcely using verbal communication, as most of his non-verbal promotes were mostly enough to accomplish his desire.

On assessment, Ali did not have proper eye contact, limited interchange of communication, and decreased responsiveness to verbal instructions. He was acting like familiar cartoon scenes with a toy, appearing more familiar with imitation than with the people around him. But, when the nurse gently tried to enter his play by mirroring his actions, he showed brief moments of action, suggesting preserved social capacity when considered within familiar patterns.

Moreover, while performing developmental screening, there was a critical receptive and expressive language delay, with proficiency closer to a 1½- to 2-year level. His neurological examination and hearing test were normal. Given his history of heavy screen exposure and minimal conversational interaction, the team considered his presentation as an environmentally shaped communication delay, sometimes described as “virtual autism.” The term "Virtual Autism" was first introduced by Romanian psychologist Dr. Marius Zamfir, who observed autism-like behaviors in children excessively exposed to screens. Studies have since supported the idea that prolonged screen exposure during early developmental stages can lead to symptoms resembling classical autism. This term is used when autism-like behaviors arise from limited human interaction rather than an intrinsic neurodevelopmental difference.

The most important thing was to understand the family context. As both parents expressed guilt, they realized that the developmental difference was because of excessive screen exposure. But the good thing was that they were motivated and ready to do anything to support their child. The maid had little understanding of children's developmental needs. The family's busy schedules, reliance on digital media for convenience, and limited awareness of early childhood communication needs collectively shaped Ali's environment and contributed to his developmental pattern.

This case provided a foundation for applying a presence-centered, Parse-guided nursing approach to help the family recognize their routines, understand underlying meanings, and co-create new rhythms to support Ali's development.

PRESENCE-CENTERED FAMILY AND NURSING APPROACH

Ali's case study is grounded in Parse's theory of the Presence, a nursing approach in which the nurse was genuinely present with the family before doing anything for them. The nurse decided to hear them attentively and without judgment. As an alternative to offering instructions or corrections, the nurse understood how the family's routines formed, what challenges they faced, and how they made sense of Ali's silence. This beginning created trust and opened a safe space where the parents could reflect without fear of being criticized. They opened for illuminating meaning, began to synchronize rhythms, Mobilizing Transcendence, and after the nurse's therapeutic use of self, the family felt empowered to meet Ali's developmental needs (Figure.2)

Illuminating Meaning

The nurse encouraged family members to share their interpretations of silence, engagement, screen time, togetherness, caring attitudes, and truly being present. After their in-depth conversation, Ali's parents realized that the amount of screen time they spent with Ali, even while being physically present around him, was the cause of his silence. His silence was not a sign of peace but a reflection of unmet developmental needs.

Synchronizing Rhythms

The nurse and Ali's family decided to introduce new rhythms of life for him. They settled timings for Ali's meal, outdoor play, and proper sleep. They decided to decrease screen time and isolation timings. They offered more presence to him while playing with him, telling him bedtime stories, and increasing face-to-face engagements. They introduce simple turn-taking games and incorporate reading and outdoor play into the daily schedule. These changes were not presented as rules but as shared choices emerging from the family's new understanding of Ali's needs.

Mobilizing Transcendence

The nurse helped the family to create new opportunities for Ali, such as watching him play and interacting with peers, rather than solely depending on the digital screens. This positive perception changed the mindset of parents. They admitted him to the Pre-school program, decided on regular outdoor activities, and read bedtime stories. Each step reflected the family moving beyond old habits toward new forms of relationship and growth.

The Nurse Therapeutic Use of Self

Thoroughly, the nurse remained collaborative with Ali and his family. She was genuinely present with them. Providing Ali with compassionate care, with love, kindness, and empathy. She engaged Ali in different plays. She has provided nonjudgmental attitude to his family, and help them to move from hopelessness to the hopefulness. These moments supported Ali's comfort with human connection and showed the family how relational presence could serve as a bridge to communication. The nurse's gentle stepping became part of the therapeutic process.

Family Empowerment

The parents felt more confident because the nurse helped them rather than criticizing. They commenced creating opportunities for Ali to use words, established consistent routines, and celebrate small steps. The maid also became a dynamic partner as well, using simple narration ("You are pushing the car," "Let's open the book") to stimulate language during daily care. (figure.2)

Figure 2. Presence-Centered Family and Nursing Approach



EVALUATION AND OUTCOMES

The progress for Ali's case was evaluated at multiple stages, first at one month, then after three and six months after initiating the Parse-guided, presence-centered interventions. During these follow-ups, changes appeared not only in Ali's speech and social engagement but also in the family's rhythms, interactions, and confidence.

One Month Evaluation

In the first month, Ali's screen time was reduced slowly, and although he resisted at the beginning, he eventually started adjusting. Whenever his parents or the nurse acted out the cartoon characters he liked, he became excited and joined in, which made it easier for him to learn. During this time, he began using around 20 words and shifted from only mimicking actions to naming the things he wanted. He also started recognizing his name and responded when called, something he rarely did before. His parents began enjoying their time with him; his mother said bedtime stories had become a special part of their day. These early changes showed that the family was settling into new rhythms, which aligns with Parse's process of synchronizing rhythms. The nurse's steady, reassuring presence during follow-up visits helped the family stay committed to the changes.

Three-Month Evaluation

By the third month, Ali's improvement became much more noticeable. He had started using small three- to four-word phrases and his habit of copying cartoon characters had reduced a lot. He was also adjusting better to the people and environment around him. His preschool teachers mentioned that he now played alongside his peers instead of staying by himself. At home, he began following

simple commands like “bring water,” “push the car,” or “do handshake,” which showed his growing understanding and connection.

These changes reflected the family’s steady involvement in the new routines of play, talking, and spending time together. For the nurse, these moments were clear signs of transcendence—Ali and his family slowly moving away from old patterns and stepping into healthier, more connected ways of living.

Six-Month Evaluation

By the six-month mark, Ali’s progress was clearly visible to everyone around him. He had started asking simple questions and could now speak short four- to five-word sentences with growing confidence. He enjoyed playing with other children and had begun coordinating well during group activities. During follow-up visits, the nurse was genuinely happy to see the family’s consistent warmth and true presence—something the parents had maintained from the start.

At home, the routine remained steady. Ali’s parents played with him daily, continued the bedtime story routine, and now Ali excitedly asked, “Which story is next?” His siblings also spent more time with him taking him outside, playing games, and including him in their activities. The maid, who now understood his developmental needs, actively talked with him and used interactive play during caregiving.

A neurological and developmental reassessment showed that the autism-like behaviors seen earlier had greatly reduced. This strengthened the understanding that Ali’s delays were shaped by his environment rather than biology. His steady improvement clearly reflected the family’s new rhythm of interaction, and highlighted how powerful presence-centered nursing can be in transforming a child’s developmental path.

INTERPRETATION THROUGH PARSE’S LENS

Ali’s recovery reflected the unfolding of all three processes of human becoming:

- **Illuminating meaning:** The family understood how their routines shaped Ali’s silence.
- **Synchronizing rhythms:** They co-created a new flow of daily life built on interaction instead of screens.
- **Mobilizing transcendence:** They envisioned and enacted new possibilities for Ali’s development.

The nurse’s authentic presence made these transformations possible by offering relational safety, encouragement, and nonjudgmental guidance. Ali’s progress demonstrates how presence-centered nursing can shift a family’s entire developmental environment, enabling meaningful change in a child’s communication and social engagement.

DISCUSSION

Ali’s case brings contemplation to the sophisticated connection between early exposure to digital gadgets, restrained human interaction, and the delay in developmental milestones like speech and other behavioral disorders seen in Virtual autism. Other studies support the findings that

substantial screen use in early childhood is linked with weaker expressive language, reduced social reciprocity, and delays in human interactions.¹⁴ More recent work adds an important touch: *how* and *with whom* a child uses screens matters as much as the amount.¹⁵ Children who watch screens alone, particularly nonverbal, show significantly poorer language, cognitive, and social outcomes than children who co-view with an engaged adult.¹⁶

Screen Time, Brain Development, and Social Withdrawal

Early and heavy exposure to digital gadgets can disrupt development in ways that many researchers now recognize as deeply concerning. Early and prolonged screen use can influence brain regions involved in attention, language, and social connection.¹⁷ Neuroimaging studies, including functional MRI, show decreased activity in Broca's area, which supports expressive language, and in Wernicke's area, which helps children make sense of spoken words, among toddlers who spend long hours on screens.¹⁸ When these areas are under-stimulated, it often reflects a lack of real conversation and back-and-forth interaction—the very experiences that build the neural foundations for communication and social engagement.

These neurological findings help explain what some scholars refer to as “virtual autism,” a pattern in which children display autism-like withdrawal due to environmental deprivation rather than an intrinsic neurodevelopmental condition.¹⁹ At the same time, the literature also shows that not every child with high screen exposure develops these difficulties, underscoring the protective role of caregiver engagement, responsive interaction, and mindful, balanced media use.²⁰

Impact of Media Type: Nonverbal Comedy, Cartoon Character Imitation, and Behavioral Modelling

Early exposure to certain types of cartoons—especially slapstick, exaggerated mimicry, or violence-based content—can leave a noticeable imprint on young children's developmental patterns. A growing body of research has examined how children respond to characters who rely on nonverbal comedy, exaggerated gestures, or chaotic humor. Several observational studies note that preschoolers who regularly watch such content often mirror what they see: they copy odd body movements, repeat exaggerated facial expressions, and become absorbed in repetitive, non-purposeful play.²¹ Instead of entering reciprocal or imaginative play, many retreat into imitations of the cartoon world they consume.

Studies on nonverbal cartoons also show that children tend to speak less during and after viewing.²² Their communication shifts toward pointing, gestures, or reenacting scenes, reducing opportunities for spontaneous language use—an essential ingredient for early speech development.

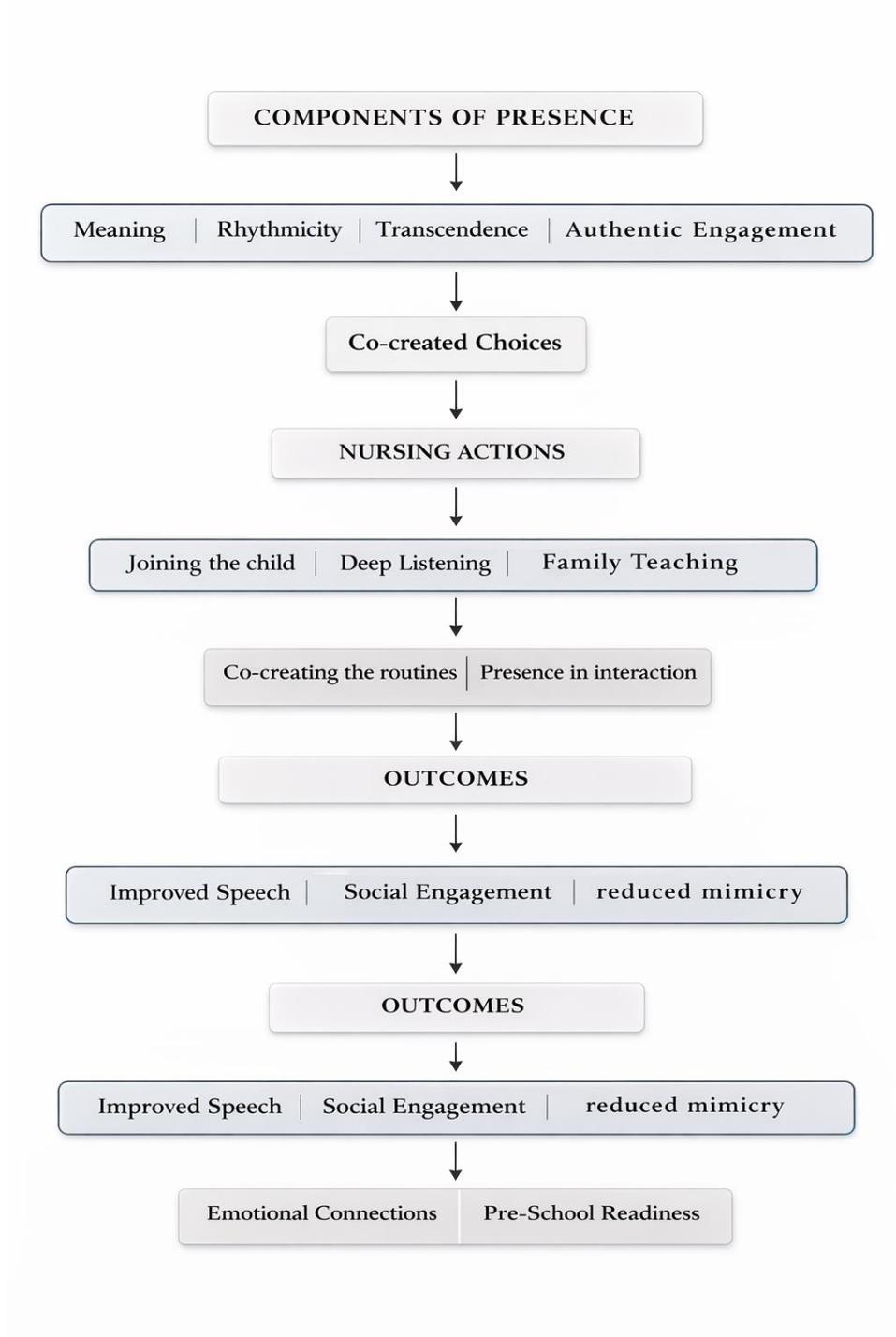
More troubling is the evidence surrounding fast-paced or aggressive cartoon content. Meta-analyses link frequent exposure to violent or high-intensity cartoon scenes with higher impulsivity, difficulty waiting or controlling impulses, and weaker emotional regulation in young children.²³ These findings, however, do not paint all media with the same brush. Other research shows that prosocial cartoons—those emphasizing kindness, sharing, and empathy—can support cooperation and emotional understanding.²⁴ Together, this evidence suggests that *the type of media*, not the screen alone, plays a powerful role in shaping a child's emerging behaviors, emotions, and communication.

Environmental Deprivation and Developmental Plasticity

Ali's steady progress over six months reflects what many studies have described about environmentally driven delays: when children begin receiving consistent relational input, they often show encouraging gains in a relatively short time. Interventional trials report that cutting down screen exposure and increasing parent-child interaction can boost vocabulary, joint attention, and social responsiveness within 8–12 weeks.²⁵ At the same time, systematic reviews remind us that recovery is not automatic; it depends on how reliably families sustain these new patterns, the quality of caregiver responsiveness, and the support available in the child's broader environment.²⁶ Some children, particularly those with underlying neurodevelopmental vulnerabilities, may not achieve the same level of improvement.²⁷

The Role of Nursing Presence

In situations like Ali's, where developmental patterns are shaped as much by environment as by biology, Parse's human becoming framework provides a deeply relational way of approaching care. Authentic presence allows nurses to meet families where they are, creating a space where they can recognize unhelpful routines without feeling judged or blamed. Research on nursing presence describes several benefits: better communication between clinicians and families, stronger follow-through with developmental guidance, and increased caregiver confidence.^{28, 29} At the same time, other studies acknowledge that maintaining sustained presence can be difficult for clinicians who face heavy workloads, limited time, or emotional strain.³⁰ Ali's experience illustrates how a steady, presence-centered approach can help families make sense of their day-to-day patterns, reshape routines, and gradually build healthier developmental rhythms together (Figure 3).

Figure 3. Presence-Centered Mechanism of Change in Ali's Case**A Multi-Dimensional Interpretation**

Ali's recovery illustrates the intersection of empirical evidence, neurodevelopmental science, media research, and family relational patterns. His transformation underscores that:

- **Screen exposure alone is not the sole cause of delay.**
- **Absence of human presence, conversation, and shared play is the central factor;**
- **Structured presence-centered nursing can accelerate recovery;**
- **children's brains remain highly plastic when environmental conditions improve.**

This case reinforces the importance of integrating theory (Parse), neuroscience, and relational nursing practice to support children affected by digital-era developmental disruption.

Conclusion

Early exposure to digital screens without supervision and human interaction can cause delayed developmental growth and symptoms seen in virtual autism. In this case study, Ali's silence and developmental disruptions were not because of the neurological issues, but due to his unsupervised continuous exposure to the screen.

By applying Parse's human becoming, the nurse moved beyond instructions and built understanding with the family by being truly present with them. With her true presence and thoughtful dialogue, she gradually shaped their new routines that supported Ali's development. This integration of presence theory helped the family recognize the value of genuine human connection and understand how to create a healthier balance between digital screen use and real, relational interaction. Together with simple, everyday developmental practices, it illustrates what nursing can offer families navigating the challenges of a digital childhood.

As digital technology emerges in the earliest years of life, the need for authentic human presence is even more critical. Families benefit from guidance that supports them in building homes where conversation, connection, and shared meaning naturally rise above the constant pull of screens.

Ethical consideration

This case study has followed the proper Ethical guidelines used for clinical Case Reporting. Proper written informed consent from the parents for sharing this case study for informational purposes. The Child's identity remained confidential; only he was called by his pseudonym ALI. The name of the hospital, as well area, remained hidden throughout the study because the family did not allow to share any of their information related to the hospital or their identity. The mental health support team was kept ready in case of any deal with consequences related to Ali or his family's mental health.

AI Disclosure Statement

An AI-assisted image generation tool (OpenAI, 2026) was used to support the visual design in figure 2. No AI tools were used in data analysis, interpretation, or manuscript writing. The author takes full responsibility for the content of this manuscript.

References

1. Sarfraz, S., Shlaghya, G., Narayana, S. H., Mushtaq, U., Shaman Ameen, B., Nie, C., Nechi, D., Mazhar, I. J., Yasir, M., & Arcia Franchini, A. P. (2023). Early Screen-Time Exposure and Its Association with Risk of Developing Autism Spectrum Disorder: A Systematic Review. *Cureus*, 15(7), e42292. <https://doi.org/10.7759/cureus.42292>
2. Chen, J. Y., Strodl, E., Huang, L. H., Chen, Y. J., Yang, G. Y., & Chen, W. Q. (2020). Early Electronic Screen Exposure and Autistic-Like Behaviors among Preschoolers: The Mediating Role of Caregiver-Child Interaction, Sleep Duration and Outdoor Activities. *Children (Basel, Switzerland)*, 7(11), 200. <https://doi.org/10.3390/children7110200>
3. Raheem, A., Ghayas Khan, S., Ahmed, M., Jawad Alvi, F., Saleem, K., & Batool, S. (2023). Impact of Excessive Screen Time on Speech & Language in Children. *Journal of Liaquat University of Medical & Health Sciences*, 22(03), 155–159. Retrieved from <http://ojs.lumhs.edu.pk/index.php/jlumhs/article/view/1096> .
4. Bibi A, Qureshi A, Iftikhar M, et al. Effects of increased electronic screen exposure and its impact on child development. *Pak J Med Res*. 2022;61(3):157-163
5. Garg, R. K., Garg, P., Sharma, P., Kumar, Y., Niwas, R., Singh, J., & Singh, S. (2024). Virtual autism among children: A leading hazard of gadget exposure and preventive measures. *Journal of education and health promotion*, 13, 76. https://doi.org/10.4103/jehp.jehp_1482_23
6. Al Moussawi, I., Al Moussawi, A., & Hammoudi, S. (2024). Virtual autism and excessive screen exposure in early childhood: A narrative review. *International Journal of Pediatric and Adolescent Medicine*, 11(4), 251–258. https://colab.ws/articles/10.4103%2Fijpam.ijpam_109_24
7. World Health Organization. (2019). *Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age*. WHO. <https://apps.who.int/iris/handle/10665/322417>
8. Ahmer A, Khan A, Fatima S. Impact of screen time on the social–emotional development of children under five years. *J Coll Physicians Surg Pak*. 2024;34(5):555-563.
9. Dore RA. Digital media use and language development in early childhood. In: Taylor M, ed. *Handbook of Early Language and Literacy in the Digital Age*. Cham: Springer; 2024. p. 101-121.
10. Hill MM, Chaudhari J, Ciesielski HA, et al. Toddler screen time and developmental outcomes. *Child Psychiatry Hum Dev*. 2024 <https://link.springer.com/article/10.1007/s10578-023-01683-x>
11. Parse RR. Human becoming: Parse’s theory of nursing. *Nurs Sci Q*. 1992;5(1):35-42.
12. Parse RR, ed. *The Human Becoming School of Thought*. Thousand Oaks (CA): Sage; 1998.
13. Parse RR. *The Human becoming Paradigm: A Transformational Worldview*. Pittsburgh (PA): Discovery International; 2014.
14. Madigan, S., McArthur, B. A., Anhorn, C., Eirich, R., & Christakis, D. A. (2020). Associations Between Screen Use and Child Language Skills: A Systematic Review and Meta-analysis. *JAMA pediatrics*, 174(7), 665–675. <https://doi.org/10.1001/jamapediatrics.2020.0327>

15. Wang, H., Zhao, J., Yu, Z., Pan, H., Wu, S., Zhu, Q., Dong, Y., Liu, H., Zhang, Y., & Jiang, F. (2024). Types of On-Screen Content and Mental Health in Kindergarten Children. *JAMA pediatrics*, *178*(2), 125–132. <https://doi.org/10.1001/jamapediatrics.2023.5220>
16. Guellai, B., Somogyi, E., Esseily, R., & Chopin, A. (2022). Effects of screen exposure on young children's cognitive development: A review. *Frontiers in psychology*, *13*, 923370. <https://doi.org/10.3389/fpsyg.2022.923370>
17. Hutton, J. S., Piotrowski, J. T., Bagot, K., Blumberg, F., Canli, T., Chein, J., Christakis, D. A., Grafman, J., Griffin, J. A., Hummer, T., Kuss, D. J., Lerner, M., Marcovitch, S., Paulus, M. P., Perlman, G., Romeo, R., Thomason, M. E., Turel, O., Weinstein, A., West, G., ... Potenza, M. N. (2024). Digital Media and Developing Brains: Concerns and Opportunities. *Current addiction reports*, *11*(2), 287–298. <https://doi.org/10.1007/s40429-024-00545-3>
18. Hutton, J. S., Dudley, J., Horowitz-Kraus, T., DeWitt, T., & Holland, S. K. (2020). Associations Between Screen-Based Media Use and Brain White Matter Integrity in Preschool-Aged Children. *JAMA pediatrics*, *174*(1), e193869. <https://doi.org/10.1001/jamapediatrics.2019.3869>
19. Prithviraj, M. M., Alam, M. R., & Devi, N. (2024). The cartoon character syndrome: Navigating the impact on childhood development in the digital age. *Indian journal of psychiatry*, *66*(5), 463–465. https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry_201_24
20. Kim, S. K., Wi, D. S., & Kim, K. M. (2023). Effect of Media Exposure on Social Development in Children. *Global pediatric health*, *10*, 2333794X231159224. <https://doi.org/10.1177/2333794X231159224>
21. Dohmen, A., Chiat, S., & Roy, P. (2013). Nonverbal imitation skills in children with specific language delay. *Research in developmental disabilities*, *34*(10), 3288–3300. <https://doi.org/10.1016/j.ridd.2013.06.004>
22. Mallawaarachchi, S., Burley, J., Mavilidi, M., Howard, S. J., Straker, L., Kervin, L., Staton, S., Hayes, N., Machell, A., Torjinski, M., Brady, B., Thomas, G., Horwood, S., White, S. L. J., Zabatiero, J., Rivera, C., & Cliff, D. (2024). Early Childhood Screen Use Contexts and Cognitive and Psychosocial Outcomes: A Systematic Review and Meta-analysis. *JAMA pediatrics*, *178*(10), 1017–1026. <https://doi.org/10.1001/jamapediatrics.2024.2620>
23. Mallawaarachchi, S., Burley, J., Mavilidi, M., Howard, S. J., Straker, L., Kervin, L., Staton, S., Hayes, N., Machell, A., Torjinski, M., Brady, B., Thomas, G., Horwood, S., White, S. L. J., Zabatiero, J., Rivera, C., & Cliff, D. (2024). Early Childhood Screen Use Contexts and Cognitive and Psychosocial Outcomes: A Systematic Review and Meta-analysis. *JAMA pediatrics*, *178*(10), 1017–1026. <https://doi.org/10.1001/jamapediatrics.2024.2620>

24. Ybarra, M. L., Mitchell, K. J., & Oppenheim, J. K. (2022). Violent Media in Childhood and Seriously Violent Behavior in Adolescence and Young Adulthood. *The Journal of adolescent health: official publication of the Society for Adolescent Medicine*, 71(3), 285–292. <https://doi.org/10.1016/j.jadohealth.2022.03.003>
25. Zhang Q. (2021). Positive Effects of Prosocial Cartoon Viewing on Aggression Among Children: The Potential Mediating Role of Aggressive Motivation. *Frontiers in psychology*, 12, 742568. <https://doi.org/10.3389/fpsyg.2021.742568>
26. Rashid, M., Jalil, J., Abbas Mehdi, S. A., & Mahboob, F. (2025). Effect of reducing screen time in children with speech delay: A pilot study. *JPMA. The Journal of the Pakistan Medical Association*, 75(5), 717–720. <https://doi.org/10.47391/JPMA.11437>
27. Bakht, D., Yousaf, F., Alvi, Z., Buhadur Ali, M. K., Hadeed Khawar, M. M., Munir, L., Hussain Bokhari, S. F., Qureshi, M. S., Raza, M., & Qureshi, A. A. (2025). Assessing the Impact of Screen Time on the Motor Development of Children: A Systematic Review. *Pediatric discovery*, 3(2), e70002. <https://doi.org/10.1002/pdi3.70002>
28. Chen, Y. H., Drye, M., Chen, Q., Fecher, M., Liu, G., & Guthrie, W. (2023). Delay from Screening to Diagnosis in Autism Spectrum Disorder: Results from a Large National Health Research Network. *The Journal of pediatrics*, 260, 113514. <https://doi.org/10.1016/j.jpeds.2023.113514>
29. Kostovich C. T. (2012). Development and psychometric assessment of the Presence of Nursing Scale. *Nursing science quarterly*, 25(2), 167–175. <https://doi.org/10.1177/0894318412437945>
30. Fallahnezhad, T., Aghaie, B., Norouzadeh, R., Ebadi, A., & Abbasinia, M. (2023). The Challenges of Nursing Presence at the Patient's Bedside from the Perspective of Nurses: A Qualitative Study. *Ethiopian journal of health sciences*, 33(2), 281–290. <https://doi.org/10.4314/ejhs.v33i2.13>