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Original Article

Exploring the Challenges and Consequences of Maternal Parenting in the Age of Digital Children (Digital Baby Syndrome): A Grounded Theory Study

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Abstract

Objective: One of the important issues affecting parenting is how parents navigate the digital age. The digital age has created the concept of ideal parenting, which can unintentionally distance parents from the real world, preventing them from recognizing their children's primary needs. Consequently, children may seek alternative spaces to fulfill their needs, which often involve virtual and unreal content, leading to negative effects and consequences. Thus, this study aims to explore the challenges and consequences of parenting in the age of digital children.
Method: This qualitative research was based on grounded theory. The study environment included mothers with children engaged with digital devices in Yazd Province, Iran. Based on theoretical, purposive, and snowball sampling, in-depth, semi-structured interviews were conducted, and 12 participants were selected until theoretical saturation was reached. Data were analyzed using MAXQDA software.
Results: Data were analyzed using Strauss and Corbin's grounded theory method, including open, axial, and selective coding. From open coding, 450 initial codes were extracted; axial coding yielded 23 subcategories, and selective coding resulted in four main categories: ideal parenting, immersion in cyberspace, lack of self-differentiation (fusion), and unbridled cyberspace. The core category of the digital child was also identified.
Conclusion: Parenting in the digital age can prevent parents from connecting with the real world and understanding the child's primary needs, directing the child toward spaces away from reality. Many parents are unaware of the challenges and potential problems caused by such spaces.

Key words: *Cyberspace; Digital Baby Syndrome; Digital Child; Grounded Theory; Internet Addiction, Parenting*

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Over the last decade, communication and information have dramatically changed due to instant internet access and the rapid spread of portable devices such as smartphones and tablets (1). With the widespread availability of the internet, numerous mental harms have emerged, such as anxiety, depression, restlessness, obsessive thoughts, and rumination. At the same time, social media provides an interactive environment for people (2, 3). While this environment has undeniable advantages- including access to information, increased accountability for consumers, online consultations in medical and psychological fields, and easier communication- its negative aspects are also significant, such as violation of privacy and exposure to misinformation (4). Today, digital interactions are accessible to everyone, including those who are not experts (2). Parents are among the groups who can access accurate evidence-based information shared by professionals, but they may also be unintentionally exposed to false or misleading content that confuses them (5).

The key challenge of cyberspace for parents is that it has redirected them from actual parenting toward ideal parenting by creating criteria that are often far from reality (6, 7). Parenting style is commonly defined as a set of behaviors and attitudes parents provide for their children (8). In contrast, ideal parenting refers to standards shaped by social comparison and online content, which are often unrealistic and may lead to feelings of inadequacy and incapacity in parents (8, 9). Parents who see themselves as incapable of meeting these standards are more likely to experience poor mental health and face multiple challenges in relation to their children (9). Closely related is the concept of the virtual parent[1], which refers to parents who, immersed in cyberspace, replace actual parenting with imagined ideals of childrearing. This shift often creates fantasies in parents' minds about themselves and their children, pushing them further away from the realities of everyday parenting (10).

In addition to these adverse effects on parenting style, digitalization also has harmful impacts on children (11). Children who attempt to satisfy their needs in an environment far from reality are referred to as digital children. This term describes those who, due to overexposure to cyberspace, seek identity, fulfillment, and self-worth in virtual contexts rather than through real-life interactions (12). These children are mostly part of what is now known as the Alpha generation- those born in 2010 or later -who are considered the first fully digital-native generation. Their exposure to technology from infancy has deeply shaped their cognitive, emotional, and social development patterns. In Iran, where access to digital devices among children is rapidly increasing, this phenomenon is becoming highly evident.

A digital child who escapes from reality may turn to multiple alternatives such as electronic devices and various media; if these are unavailable, they may even turn to books or imaginary games as gateways into cyberspace. Cyberspace itself is often described as a space opposed to outer reality, gradually making individuals less aware of their external environment (12, 13). According to existing studies, about 5% of children and adolescents are severely dependent on digital media (14, 15). Moreover, evidence shows that digital media use is associated with depression and suicide (15-17), personality and sleep disorders (18, 19), and reduced quality of life (20).

The Self-Determination Theory (SDT) by Ryan and Deci helps explain why children may seek refuge in virtual spaces (21). This theory suggests that all children are born with three basic psychological needs: competence, autonomy, and relatedness. Autonomy means that individuals need to feel their behaviors are self-directed and aligned with their own values and beliefs. Support for autonomy in childhood fosters a sense of psychological growth, while excessive prohibitions and restrictive rules push children to seek freedom in cyberspace (21, 22). Similarly, when children feel incompetent in the real world, they may turn to virtual or imaginary environments to regain a sense of mastery (23, 24). Finally, weak parent- child relationships often leave children searching for attention and approval online to satisfy their need for relatedness (25, 26).

Studies show that individuals who overuse digital media often face chronic psychological deficiencies in interacting with others. These deficiencies can lead to mental health problems such as depression, negative feelings, insomnia, eating disorders, reduced self-competence, poor physical health, anxiety, impaired emotional regulation, and loss of control over daily situations (27, 28). Where is the family in these negative situations? Within the family context, research indicates that inadequate parental involvement, low-quality parent–child interactions, and inconsistent media-related parenting strategies are major contributors to such negative outcomes (29, 30). Conversely, when parents are digitally literate, emotionally responsive, and actively engaged in setting boundaries for media use, many of these problems can be mitigated (31).

Therefore, the role of parents -particularly in shaping their children's digital behaviors and coping mechanisms -cannot be underestimated. In the Iranian context, limited parental digital literacy and the rapid growth of online culture make this role even more critical. Evidence suggests that inconsistent parenting approaches, lack of digital literacy among parents, or excessive idealization of parenting standards promoted

[1] Virtual parent refers to novel parenting techniques in the digital age in which, communicational media determine the parenting criterion and pattern for the parents.

online can lead to a misalignment between real and virtual parenting practices (7). These misalignments not only affect children's mental health but also contribute to parental stress and strained parent- child relationships in the digital era.

In summary, children's overuse of cyberspace and electronic media has become a pressing issue. This phenomenon not only immerses children in virtual environments and distances them from reality, but also leads to maladaptive trajectories and multiple behavioral problems. While experts have often focused on addressing the apparent symptoms of these problems, there is a critical need to explore their underlying causes. Accordingly, this study aims to examine the challenges parents face in raising digital children and the psychological and behavioral consequences of these challenges. Specifically, it seeks to address:

1. What challenges do parents encounter in raising digital children?
2. What psychological and behavioral consequences arise from these challenges?

Materials and Methods

This qualitative research was based on grounded theory. The research environment included all mothers with children who were engaged in digital devices in Yazd province (Iran). Based on theoretical, purposive and snowball sampling, in-depth, semi-structured interviews were conducted with participants, and 12 individuals were finally selected until theoretical saturation was reached. The data were analyzed using MAXQuda software.

Inclusion and Exclusion Criteria

For mothers, inclusion criteria were: (1) voluntary participation, (2) informed consent, and (3) the ability to reflect on and articulate parenting experiences in the digital era.

For children, the inclusion criteria were: (1) regular and significant use of digital devices, (2) being part of Generation Alpha (i.e., born from 2010 onwards), and (3) confirmed influence of digital media use on behavior by a child psychologist or related expert.

Exclusion criteria included: (1) the presence of severe somatic or neurological disorders in the child, (2) the absence of a confirmed diagnosis by a professional, and (3) lack of meaningful exposure to digital environments.

Interview Procedure and Analysis

Interview duration varied based on participants' responses. After the interview was done, the sessions were audio-recorded and transcribed verbatim; coding was then carried out by reviewing the audio files to ensure the accuracy of the transcript. MAXQDA software was used to analyze the data obtained through the grounded theory method. In this method, Strauss and Corbin's three steps of open coding, axial coding, and selective coding were used for data analysis, and a logical paradigm of developing theory was ultimately presented. Regarding credibility in this study, participants were asked to evaluate the general findings of the study and share their ideas about its accuracy. To prevent possible biases by the researcher in the research process, the discussion technique and sharing ideas with peers who did not participate in this study were used.

To ensure dependability, recorded interviews, transcripts, a list of interviewees, the researcher's notes, and the data analysis process were documented and saved. Also, to achieve confirmability in this research, the results of analyses and theories obtained through consultation with family and child experts were examined. Participants were assured of confidentiality and anonymity, and they were free to withdraw from the research at any stage.

Ethical Consideration

This study was approved by the Ethics Committee of Yazd University under the code (1400, 159) and it adhered to the principles outlined in the Declaration of Helsinki. Participation in the study was entirely voluntary. Written informed consent was obtained from all participants. For participants under the age of 18, informed consent was obtained from their parents or legal guardians.

Results

The mean age and standard deviation (SD) of mothers and their children in this study were 34 ± 6.51 and 4.5 ± 1.66, respectively. Also, the mean age of children at first exposure to digital devices equaled 3.5. Characteristics of participants are reported in Table 1. After coding was implemented, about 470 initial codes were obtained that were classified into 23 subcategories and four main categories. The main categories included ideal parenting, immersion in cyberspace, lack of self-differentiation, and unbridled cyberspace, each of which is elaborated in Table 2.

Table 1. Demographic Information of Mothers and Their Children (Age, Number of Children, Age at First Digital Exposure)

Row	Mother's Age	Child's Age	Number of Children	Detection Age
1	32	4	2	3
2	39	6	2	4
3	43	8	3	6
4	27	3	1	3
5	34	4	2	3
6	37	5	1	3
7	25	3	1	2
8	45	7	1	5
9	30	4	1	3
10	28	5	2	3
11	32	4	1	2
12	30	5	2	3

Table 2. Extraction of Main and Subcategories Themes from Interviews with Mothers of Digital Baby

Main Categories	Subcategories
Ideal parenting	Motherhood competition, imaginary role-modeling, maternal fantasy, escape from maternal failure, causing mothers' grief, self-revenge, mother's pain, covering badness
Immersed in cyberspace	Living in an inner cave, the tendency for fantasy, imaginary playmates, fear of not being lovely, real self-shame
Lack of self-differentiation (fusion)	Imaginary identity, imaginary power, controlling imagination for missed autonomy, returning to childhood, pretending to be a younger child to have mother's presence
Unbridled cyberspace	Fear of controlling situations, fear of new experiences, lack of control over sleep, brain's dump, full-of-data brain

Ideal Parenting:

Ideal parenting is a maladaptive style through which the parents distance themselves from their children and just focus on achieving their criteria by creating restrictive rules in their minds. Parents are indeed trying to achieve their maternal fantasies and follow imaginary models that reach nowhere but frustration and confusion. Participant (3): "*I always felt I would lose the match if I did not attend these parenting courses."* Participant (5): "*I liked to be the exact mother illustrated in the book. It was as if I was looking to achieve it and obeyed the model in my imaginatio*n."

This parenting style makes it difficult for parents to communicate well with their children or respond to their children's needs because mothers view their children's behavior as revenge on them and compensation for their own shortcomings. Participant (7) "*I always wanted my child to be better than everyone else and no matter what I did, it didn't work. Now it's like when I look at my child*."

Immersion in Cyberspace:

Immersion in cyberspace means taking refuge in a non-real world, which is an important issue among digital children. Reasons for being immersed in such a world may include issues such as fear of not being lovable and feeling ashamed of the true self. Participant (1): "*My child teaches herself in her room because she says that her teacher does not like her. She always feels nobody in the world likes her.*" Participant (5): "*I feel my child does not like me at all and does not want to make a relationship with me because my child always beats herself, and no matter how much time I spend with her, I cannot persuade her that I like her. She feels a high level of self-shame*."

Lack of Self-Differentiation (Fusion):

Lack of self-differentiation means that the child does not know their real self. In fact, they do not know the difference between the permissible and the real. Due to the lack of an independent and differentiated self, digital children take refuge in an imaginary world

Participant (3): "*My child sees many clips on YouTube, and now the dress style, talking, and hairstyle of my child are all changed.*" Participant (7): "*My child ignores me at all, and I feel all of the stubbornness and talking I do not know with whom occur to say that I am*

here too, and I have strongly received this message these days."

Unbridled Cyberspace:

When children and adolescents spend long hours in cyberspace for various reasons, they create an imaginary identity for themselves and gradually distance themselves from the real world, which results in not dealing with life realities and not having control over themselves. (Figure 1).

Participant (4): "*When we want to go out of the house. I face a big problem as my child is stubborn with me in all stages of getting ready to leave; I assume my child fears not having* control over the situation and environment."

Cyberspace sometimes causes children to lose their initial focus. Participant (6): "*When I talk to my child I feel there is another thing in his mind occupied with other things, because my child is* looking at me, but I know my child does not understand a word I say."

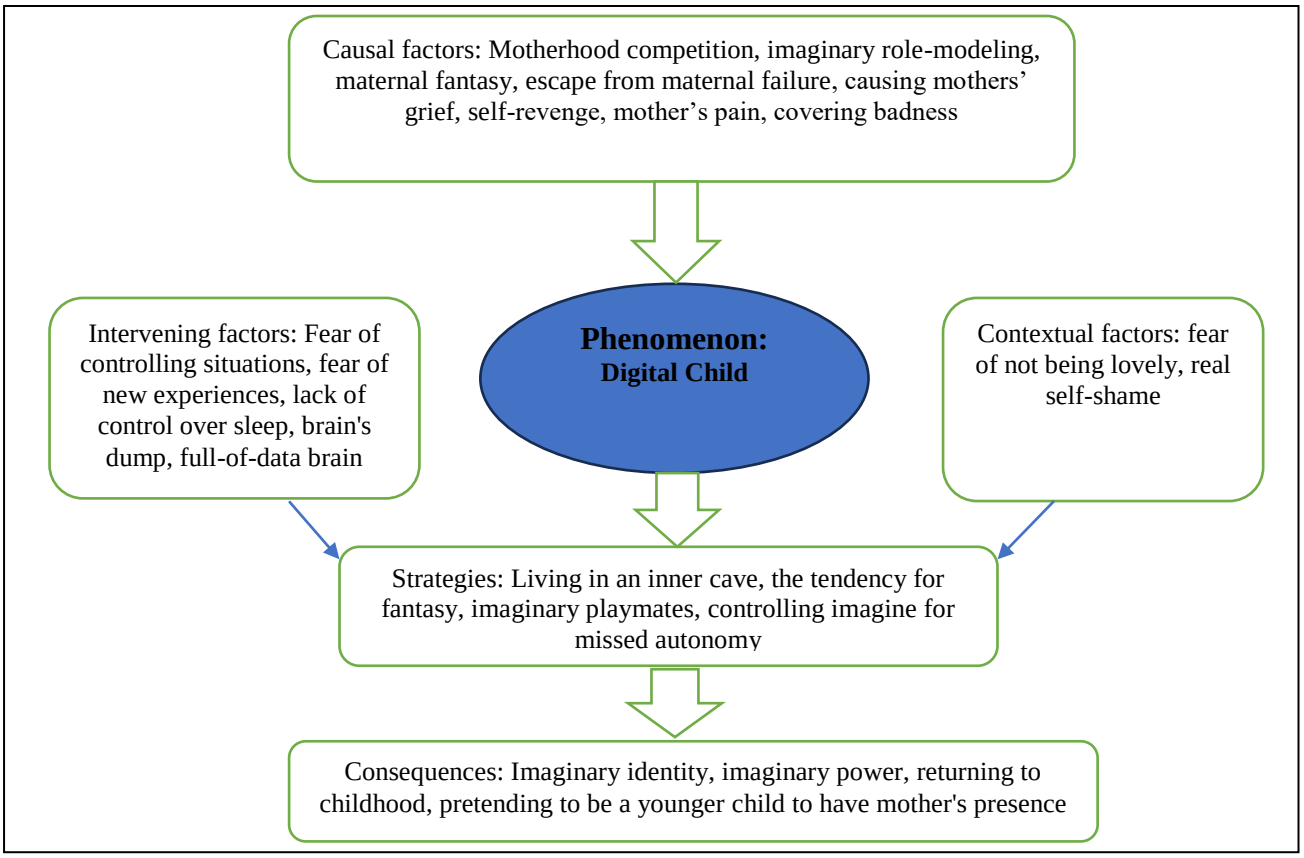

Figure 1. The Emerging Grounded Theory Model Illustrating the Pathway to Becoming a Digital Child

Discussion

One of the key challenges mothers face in the digital media environment is motherhood competition, a socio-cultural pressure that pushes mothers toward unwanted rivalry to demonstrate their competence in maternal roles (29). This competition often results in imaginary role-modeling, where mothers adopt idealized maternal images portrayed in media, culture, or personal narratives (29). These role models may lead to maternal fantasies, in which mothers perceive themselves in unrealistic, unattainable forms (30). Such fantasies can serve as a psychological mechanism to escape perceived maternal failure, but they also deepen the gap between reality and ideal, causing emotional distress (31). In some cases, mothers may engage in self-revenge, punishing themselves or distancing from their children due to feelings of inadequacy. These behaviors contribute to mothers' emotional pain, as they become entangled in distorted reflections of the maternal role, losing a sense of personal identity (31, 32). These concepts not only reveal the causal factors of maternal experience, but also indicate how social, cultural, and psychological pressures may lead to complex behavioral and sensual patterns among mothers (32).

Digital media also affects cognitive and emotional functions. Constant exposure can elevate anxiety and reduce coping capacity, creating a psychological barrier to change and unfamiliar situations (33, 34). Sleep dysregulation is one of the important factors affecting the brain function. On the other hand, "brain dump" or feeling information overload occurs when an individual faces a large volume of data and the brain is not able to effectively process this information. This may lead to confusion, less productivity, and more stress (35).

Ultimately, an overloaded brain refers to a situation in which a person deals with a large volume of information but does not have sufficient tools for structuring and analyzing these data. These conditions may result in mental fatigue or less ability for problem-solving (35).

For children, early experiences, particularly in parent-child interactions, contribute to fears such as not being loved, which may manifest as avoidance or overdependence, ultimately increasing engagement with cyberspace (36, 37). The mentioned contextual, intervening, and causal factors may shape the digital child, which is related to various factors, such as shame, fear, imaginary role-modeling, fear of new experiences, and so forth. Due to overexposure to digital media, digital children may experience disorders in their social and communicational interactions. This phenomenon may lead to quasi-autism symptoms due to social relationships being replaced with unilateral interactions with digital devices (38). Fear of new experiences and imaginary role-modeling may play a role in this process, because children may develop imaginary fears due to less interaction with the real environment (39). Shame may also appear as a consequence caused by limited social interaction (38).

By using more digital devices, children enter a world of fantasies and fantasy imaginations, and their strategies can be taken as a safe place for escaping from social and emotional realities. This fantasy world allows them to experience their emotional feelings and needs by creating fantasy personalities and unreal playmates (40). However, this dependence on the digital world may result in lower real and social interactions, and therefore, affect the child's emotional and social autonomy. Studies have confirmed that children gradually lose control over their imaginations when facing digital content, which may lead to some problems such as anxiety, depression, and behavioral disorders. In particular, children who spend a long time playing digital games may have problems in creating real relationships and gradually have more desire for fantasies (40). These fantasies not only serve as a way to escape from reality but also may prevent children from processing real experiences of life accurately. Finally, the negative effects of digital life on children may create an inner cave in which children are immersed in their imaginations and fantasies instead of interacting with the real world, and this issue may leave lasting effects on their social and emotional growth (41).

The consequences of digital media are a subject that has received great attention in the current world. By providing a world with many fantasies and imaginations, digital media allows children to easily immerse themselves into their imaginative worlds that may shape their fantasy identities (42). This imaginative identity often serves as a safe place for escaping from daily life realities, directing children toward the desire for fantasy. In this light, imaginative power strengthened through interaction with digital content can help children process their feelings and experiences in a better way (42). However, this dependence on imagination and fantasy may lead to regressive tendencies, where the child feels more comfortable being in cyberspace rather than the real world. This situation may cause problems in the social interactions of children, preventing them from facing the challenges of real life effectively (43). Moreover, pretending to be a younger child to have a mother's presence may be a consequence of this dependence. When using digital media, children may feel their emotional and mental needs are not met by their parents, so they take refuge in a fantasy world. This phenomenon not only would affect the social and emotional growth of children but also may result in some problems, such as anxiety and depression (44). Finally, digital media exposure may generate imaginative identities, providing a safe refuge but sometimes preventing the child from effectively engaging with real-life challenges (42, 44). Pretending to be younger for parental attention, reliance on imaginary friends, and online social networks can amplify virtual identities, creating mismatches with real-world personas (43, 45).

Limitation

One limitation of this study was the exclusive focus on mothers, which may limit the applicability of the findings to broader parental roles, including fathers or other caregivers. However, given the cultural context and the aim of exploring maternal experiences specifically, focusing on mothers allowed for a deeper understanding of their perspectives. Another limitation relates to the cultural and geographic context: all participants were recruited from Yazd province, Iran. While this provides rich, context-specific insights, it may reduce the generalizability of the findings to other regions or cultural settings. Nevertheless, the study's qualitative approach and detailed descriptions offer valuable guidance for similar contexts and lay a foundation for future comparative studies. The small sample size (12 mothers) is typical for qualitative grounded theory studies aiming for theoretical saturation. While this may limit the breadth of experiences captured, the in-depth, semi-structured interviews and rigorous coding process (open, axial, and selective coding using MAXQDA) ensured comprehensive analysis of participants' perspectives.

Finally, regarding methodological limitations, formal pilot testing or psychometric validation of the interview guide was not conducted. However, credibility and dependability were strengthened through participant feedback, peer debriefing, and careful documentation of the analysis process, minimizing potential biases and enhancing trustworthiness. Overall, despite these limitations, the study provides valuable insights into maternal parenting in the age of digital children and identifies critical factors that can inform both practice and future research.

Conclusion

Based on the findings of this study, it can be concluded that the phenomenon of the digital child is influenced by a set of complex and interrelated factors- both direct and indirect- that must be accurately identified and analyzed. The development of digital children is not only shaped by their individual characteristics, but also significantly impacted by environmental, social, and parental contexts. With the growing accessibility of digital platforms and social networks, children face both unique opportunities and serious challenges that require careful and informed parental navigation. These findings also provide practical insights for parents and professionals, suggesting strategies to support children's healthy development and manage challenges in the digital environment.

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Conflict of Interest

None.

Author's Contributions

HZM and MM developed the theoretical formalism, ZSH conducted the interviews. HZM and MM contributed to the versions of the manuscript. All authors read and approved the final manuscript and are responsible for questions related to the article.

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