

RESEARCH ARTICLE

Technology overuse Influencing Emerging Psychological Acquaintances among Youth

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Abstract

Family foundation is one of the main institutions prevailing since ages in all human communities. The main building block organization of developed societies are reverential families. To meet economic stability, social and emotional needs, family holds fundamental importance. Technological innovations as a cardinal principle have positioned a huge gap among intra-family relationships. Therefore, the current research emphasizes impact of modern electronic media creating psychological breaches among families in Pakistan. Phenomenological analysis in present research revealed that digital platforms impact negatively eradicating traditional family norms, values and ethical bonding by minimizing positive constructive interaction among family members for healthy upbringing. Data analysis in present research disclosed that digital platforms impact negatively eradicating traditional family norms, values and ethical bonding by minimizing positive constructive interaction among family members for healthy upbringing. In the collective scientific monogram, the influence of digitalization on family ties is not neglectable. It is pertinent to clarify that adulthood transitions rely on strong family bonding as families often hold prominent role in young-adult lives. Despite hindrances, electronic interruption among family bonding impacts deleteriously. To overcome future destructions, preemptive actions are quite necessary in terms of communal strategies, civic tutelage and healthcare.

Keywords: Digital dementia; Communal strategies; Constructive interactions; Civic tutelage

Introduction

Technology usage is expanding day by day and is considered as a global game-changer. The impact of technology on human life is significant, touching various aspects such as communication, economy, education, medicine, industry, and even ecosystems. A key advantage of technology is its ability to break down physical barriers, enabling collaboration across geographies and areas of expertise. The educational landscape has been transformed by e-learning, which has revolutionized training methods, while healthcare has advanced using

modern medical equipment and telemedicine. Technology has also shaped cultural and societal evolution, influencing communication, interaction and knowledge sharing but no one could deny that social media's irruption has redefined the dynamics of personal relationships (Costanza et al., 2023). Unfortunately, technology overuse is leading to serious concerns effecting individuals' psychological well-being. The friendly interaction among families is neglected since technology interrupted our lives. Families shape civilizations in all human communities as the hierarchy of internal ties and values. Personality construction, socialization, cultural heritage and ethical norms depend greatly on family bonding. Space-time continuum, localization and family foundation structure relies on interactional family legacy and in today's era a child hides huge fear of survival without technology (Klymenko, 2021; Rodríguez-García et al., 2020). In today's digitalization era, family bonding is affected as children's reliance on screens is leading socio-emotional interlude followed by defiance, moodiness, digital dementia and lingual and internalizing disorders, worsening positive functioning of an individual's growth (Mupalla et al., 2023; Baker et al., 2016). For children, the loss of contextual knowledge that in-person contact allows is particularly important, and this is a major limitation in the usefulness of digital contact between children and their families (Iyer, Albakri et al., 2020). Energy, time, love, respect and affection all are lost somewhere since technology interrupted family bonding in form of cellphones, social media and electronic games (McGrath, 2012; O'Reilly, 2016; Adelhardt et al., 2018). The negotiation among families especially mothers to maintain relations with kids stereotypically is a fundamental dilemma. Present study focusses on how technology overuse creates intra-family consequences in Pakistan affecting physical and physiological well-being. Since electronic devices have occupied time from adolescents' life, the emotional, and behavioral disorders are at peak. Cognitive development of an individual's brain is severely affected by long screen hours. The functional expansion of young brains sways attentional domains followed by creativity, focused thoughtfulness and learning memory, but unfortunately digital dementia, moodiness, several disorders and anxiety arises as an outcome of long-screen epochs (Barr et al., 2015). As physical and psychological bonding is interlinked, it is pertinent to mention that excessive screen time affects brain structure and function, particularly during development as youngsters' semantic memory is feebly compromised by technology overuse (Segijn et al., 2017). The alteration of white volumes and grey matter in human brain is particularly noticed as an effect of screen. This change increases the risk of impairing acquisition of memories and learning in human development processes. Neurodegeneration is accelerated as an outcome of chronic sensory overstimulation spending excessive time on screen further leading to obesity and negative self-concept (Laurie et al., 2022).

Excessive media usage effects negatively on an individual's mental, emotional and spiritual growth. Stress level is increased as direct interactions with family members are restricted by spending long hours on technology platforms. Hence, digital stimuli enhance sensory overload and impulsive attitudes disturbing equilibrium in relationships (Kim & Choi, 2017). Digital media promotes isolation and anguished behavior among families gaining substantial neuroscience attention focusing cognitive repercussions (Myhre et al., 2017). Further working memory is altered spending more time on media, as attention from one task to another is switched easily (Uncapher et al., 2017; Kato et al., 2019). A constructive interlinkage among an individual's emotional and hyperactivity-inattention are also observed due to excessive media usage. These are serious concerns leading toward social estrangement, sequestration and seclusion. Excessive internet usage significantly affects and reduces the academic and social functioning of an individual. They suffer from poor academic performance, isolation, poor relationships with parents, and impaired parent-child relationships (Wang et al., 2021). Internet addiction in adolescence and young demographics is of primary concern linked to loneliness, behavioral disorders, anxiety, moodiness, compromised self-respect, sadness, digital dementia and so on. Passive internet and digital usage results obesity, health issues leading further toward severe physical and mental concerns. The

conceptual framework illustrates how technology overuse acts as a central driver that disrupts both family bonding and individual psychological well-being (Haand & Shuwang, 2020). Excessive use of digital devices reduces face-to-face communication within families, leading to emotional detachment and social isolation among family members, particularly children. This disruption affects traditional family values and roles, as families become more reliant on digital interactions rather than personal ones. Additionally, technology overuse has significant cognitive and behavioural effects, such as impaired attention, memory, and learning in children, alongside increased hyperactivity, inattention, and addictive behaviours. These changes, compounded by the mental health impacts such as anxiety, depression, and the emerging phenomenon of digital dementia, further exacerbate family conflicts and strain parent-child relationships. To counter these effects, family-based interventions like technology-free zones, co-use of technology, and digital detox periods are essential. Educational reforms and government initiatives also play a crucial role in promoting healthier technology habits and mitigating the negative consequences of technology overuse on Pakistani families. This framework connects these dynamics, showing how technology overuse leads to multifaceted psychological and social challenges within families (Valkenburg et al., 2022).

Addressing these challenges, the present study emphasizes the key objectives, focusing development of reforms regarding guidance, interventions and policies maquillage to restrict potential harms caused by excessive media usage among children in Pakistani families. It is obvious that smartphones, gaming systems, electronic platforms, and other screen devices befitted a foremost concern & temptation among all age-groups, so our study ponders elucidations on the possible connection between excessive screen media activity and psychological disorders emerging in Pakistani youth.

Methodology

The present research follows the interpretivist paradigm to explore the real impact of modern electronic media creating psychological breaches among families in Pakistan, particularly how digital platforms may be affecting family norms, values, social and psychological bonding. Phenomenological approach was adopted in this study since phenomenology serves as a valuable qualitative research tactic within the interpretive paradigm, offering a means to explore and comprehend the lived experiences and subjective perspectives of individuals. It is a qualitative approach which aims to provide detailed examinations of personal lived experience (Smith and Osborn, 2015). Interpretative Phenomenology Analysis (IPA) was focused for as research approach as an idiographic commitment, focusing primary theoretical underpinnings, which aims to produce an account of lived experience of targeted audience. This methodology emphasizes as an interpretative endeavor because humans are sense-making organisms, therefore, participants live experiences were observed and elaborated resulting technology misuse. The findings were illustrated and describes following phenomenological lense to explore the real impact of modern electronic media creating psychological breaches among families in Pakistan, particularly how digital platforms may be affecting family norms, values, social and psychological bounding bonding.

Results

Based on the data given themes were developed by using open coding approach of qualitative data analysis. In the data analysis of this study, a phenomenological approach was employed to explore the impact of technology overuse on family dynamics and psychological well-being in Pakistani families. Through qualitative data gathered from participants, the analysis identified several key themes related to the disruption of traditional

family values, communication patterns, and emotional bonds caused by excessive screen time. Open coding was used to categorize the data into themes such as decreased face-to-face interaction, psychological detachment, and the emergence of behavioral and mental health issues in children and adolescents. The findings consistently revealed that the overuse of digital media not only minimizes positive familial interactions but also exacerbates social isolation, cognitive impairments, and emotional stress within family units (Figure 1). This analysis provides a comprehensive understanding of how modern digital platforms have deeply affected the core structure of family relationships, particularly in the Pakistani cultural context (Figure 2).

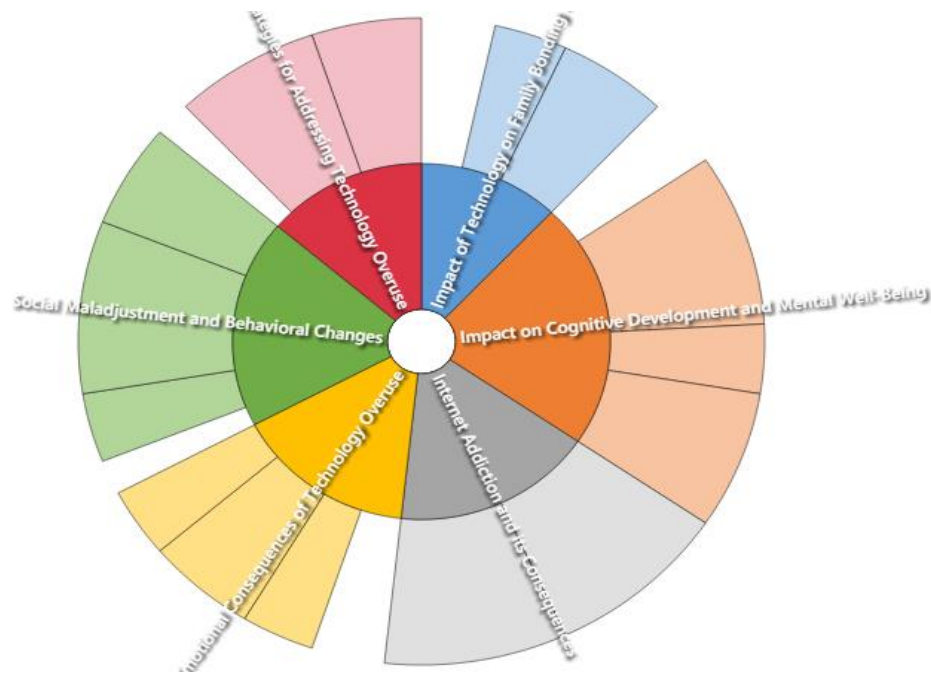


Figure 1: Overuse of digital media on child’s social, cognitive and emotional domains

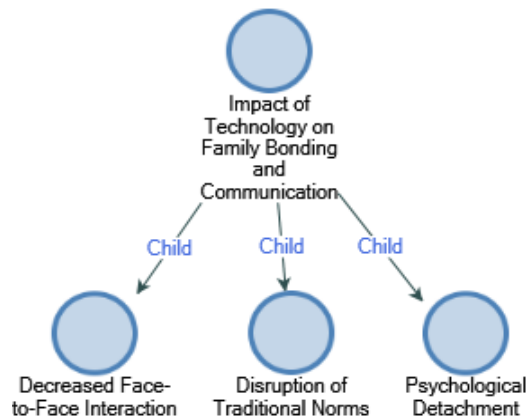


Figure 2: Impact of Technology on Family Bonding and Communication

Technology has minimized direct communication, leading to a loss of traditional family bonding activities like shared meals and conversations. Whereas parents and children experience emotional and psychological detachment due to excessive screen time and the use of digital media challenges traditional family values and

structures, affecting intra-family relationships. Moreover, the main consequences of technology use on family relationships, focusing on the child’s role. The diagram highlights three major impacts: Decreased Face-to-Face Interaction, Disruption of Traditional Norms, and Psychological Detachment. Each consequence represents how children's interaction with digital devices reduces direct family communication, challenges long-established family norms, and creates emotional distance. The figure visually supports findings from the study that suggest excessive screen time in children leads to significant psychological and social breaches within the family structure. Secondly the results revealed that psychological and emotional impacts of technology overuse on children involve four key areas, viz: Social and Emotional Isolation, Increased Stress Level, Cognitive and Emotional Distress, and Psychological and Emotional Consequences of Technology Overuse (Figure 3). The figure demonstrates how excessive technology usage can increase stress, promote isolation, and lead to significant emotional and cognitive issues in children. This visual supports the study’s findings that prolonged screen time has multiple detrimental effects on the mental and emotional well-being of younger family members.

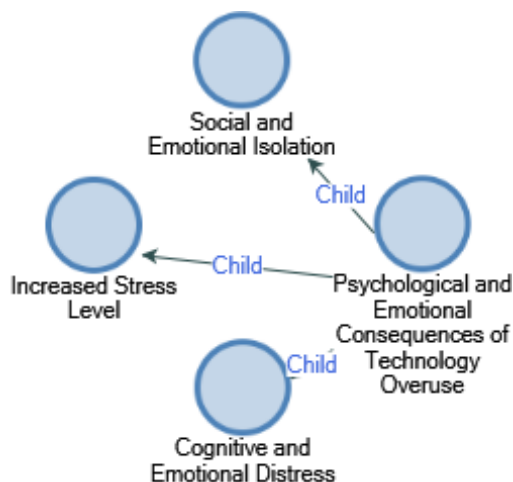


Figure 3: Four dimensional psychological and emotional impacts of technology overuse on children

Long screen hours lead to issues such as moodiness, digital dementia, and internalizing disorders in children and excessive technology use promotes feelings of loneliness and social isolation among family members, particularly children. Whereas both parents and children experience higher stress levels due to decreased quality of family time and increased reliance on digital interactions. Further the findings of present study demonstrate the negative effects of technology overuse on children's cognitive and mental health. Three key areas of impact viz: Cognitive Impairments, Mental Health Disorders, and Neurodegeneration, revealed are elaborated in Figure 4. These outcomes are directly related to prolonged exposure to digital media, which, as highlighted in the study, affects memory, learning, emotional regulation, and accelerates neurodegeneration. The figure 4, supports the research finding that excessive screen time contributes to the development of mental health issues and cognitive decline in children.

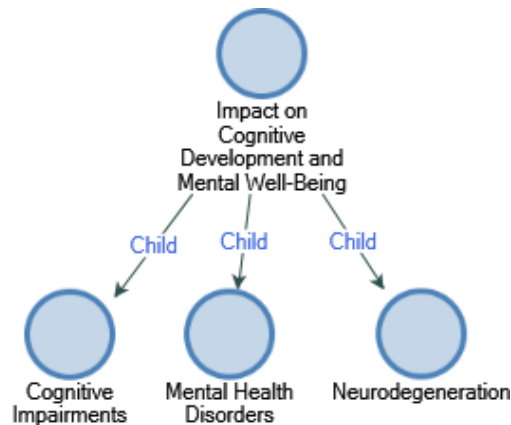


Figure 4: Mental Health Concerns & Cognitive Decline by Excessive Screen Usage

Excessive media usage negatively affects brain development, particularly memory retention, learning, and creativity and technology overuse is linked to behavioural disorders, anxiety, and depression, especially in younger family members. Whereas prolonged screen exposure accelerates neurodegeneration, affecting attention, cognitive maturity, and the ability to focus. The social and behavioral consequences of excessive technology use among children were also elaborated, highlighting four key areas: Parent-Child Relationship Strain, Social Maladjustment and Behavioral Changes, Hyperactivity and Inattention, and Family Conflict and Misunderstandings (Figure 5). The diagram shows how these issues interconnect, with technology use leading to strained relationships, miscommunication, and behavioral problems. This visual supports the study's findings that over-reliance on digital media contributes to significant social and behavioral challenges within families, especially among children.

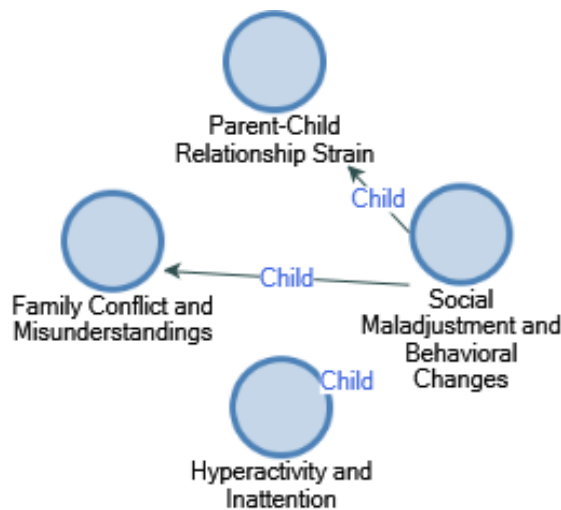


Figure 5: Social and behavioral challenges within families, especially among children

The overuse of digital platforms leads to behavioural issues like hyperactivity and difficulty maintaining attention, contributing to academic and social challenges. Miscommunication and misunderstandings among family members arise due to the prioritization of digital interactions over personal relationships and the

excessive use of technology disrupts parent-child dynamics, contributing to emotional distance and weakened family bonds. The study findings highlighted another key aspect regarding the internet addiction in children, specifically focusing on adolescents. Two primary outcomes were reported, viz: Internet Addiction in Adolescents and Physical and Mental Health Issues (Figure 6). The excessive online activity leads to addictive behaviors in adolescents, which in turn cause a range of physical and psychological problems, including poor health and mental disorders. This figure visually supports the study’s findings that link heavy digital media use to significant mental and physical health challenges in young individuals.

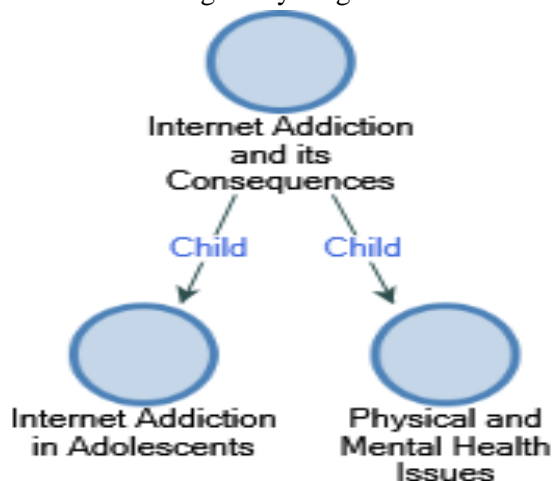


Figure 6: Internet Addiction Impacting Child overall Health

The younger generation's dependence on digital media is a key concern, leading to issues like anxiety, depression, loneliness, and a lack of self-esteem. The sedentary lifestyle encouraged by technology use contributes to health problems such as obesity and poor physical health, which are closely linked to negative mental health outcomes. The study findings stress the importance of developing communal strategies, civic education, and healthcare initiatives to mitigate the negative impacts of digital media on family relationships. There is a call for promoting positive face-to-face interactions within families to rebuild emotional bonds and create healthier dynamics. The overall primary and secondary consequences of technology overuse elaborated in the present study are summarized in (Figure 7). Each section represents a key area of impact, including Cognitive Development and Mental Well-Being, Internet Addiction and Its Consequences, Psychological and Emotional Consequences, Social Maladjustment and Behavioral Changes, Strategies for Addressing Technology Overuse, and Impact on Family Bonding and Communication. The size of each box within the treemap reflects the emphasis placed on each consequence in the research, with issues such as Neurodegeneration, Internet Addiction, Cognitive Impairments, and Family Conflict being highlighted. This visualization succinctly illustrates the study’s findings that excessive technology use has multifaceted impacts on children and family relationships.

The most frequently occurring terms in the current study focusing impact of technology overuse on family relationships are particularized in (Figure 8). The size of each word reflects its frequency in the data, with prominent terms such as "family," "digital," "media," "children," and "psychological" signifying core focus areas. Other significant terms include "emotional," "relationships," "excessive," "screen," and "technology," representing the central issues of family bonding, emotional well-being, and cognitive effects of digital media. The visual emphasizes the study’s conclusion that excessive media use adversely affects family dynamics, particularly among children.

within romantic and parental relationships. However, technology co-use (shared use of devices) was found to foster positive interactions across various relationship types (Tammisalo & Rotkirch, 2022). Another systematic review by Tadpatrikar et al. (2021) emphasized that family communication and bonding are negatively affected due to excessive technology usage. Their research highlighted that technology reduces the quality of offline family bonding, replacing it with online communication, which lacks the emotional depth of in-person interaction (Tadpatrikar et al., 2021). Regarding psychological well-being, Dienlin & Johannes (2020) reviewed the effects of digital technology on adolescents and found that while moderate use can positively affect well-being, excessive use is generally detrimental, leading to issues like anxiety, depression, and decreased life satisfaction. Adolescents, in particular, experience heightened vulnerability to the negative effects of passive technology use, such as procrastination and excessive social media consumption (Dienlin & Johannes, 2020). Furthermore, McKesey and Fabi (2022) explored the broader health implications of technology overuse, highlighting how it exacerbates issues like sleep disturbances, diminished cognitive focus, and increased stress. These findings align with the consensus that digital overuse poses significant challenges to mental health, particularly in younger populations (McKesey & Fabi, 2022). Families should create technology-free zones in homes (e.g., dining areas) and set specific times (e.g., during meals or before bedtime) when all members must disconnect from their devices. This will help promote direct face-to-face interactions and rebuild emotional and psychological connections. Research has shown that constant device use, particularly during important family times, erodes family bonding and leads to psychological detachment (Tammisalo & Rotkirch, 2022; Chan, 2018). Lastly, it is also important to note that efforts to mitigate these negative effects through interventions, such as coaching, have shown promising impact. A study by Phaekwamdee et al. (2022) demonstrated that coaching techniques significantly improved the psychological well-being of digital technology users, providing a path for mental health recovery from overuse. Moreover, it is pertinent to mention that families should engage in shared technology use, such as playing video games together or watching educational contents, as this technology co-use leads healthy environment at home and shows to foster positive relationships by turning technology into a shared activity rather than an isolating one. Studies by Tadpatrikar et al., (2021) support our findings where technology co-use revealed positive impacts on children mental well-being. Parents should enforce strict screen time limits, especially for children and adolescents. Encouraging active, educational, or productive use of technology viz; learning apps may mitigate the harmful effects of passive social media usage. Another study by Dienlin & Johannes (2020) emphasizes that excessive social media and technology usage is linked to increased anxiety and depression Implementing clear boundaries for device use will reduce cognitive overload and emotional distress. In nutshell, the present study justifies all these scientific arguments and state that technology overuse holds massive negative impact on youth, therefore, timely coaching and motivation is of utmost importance regarding child mental well-being and healthy upbringings.

Conclusion

The present study concludes that the overuse of technology has a profound and predominantly negative impact on family dynamics prominently psychological well-being. The long-term usage of these devices disrupts direct communication, leading to emotional distance and stress. Interventions like shared technology use and professional coaching can help alleviate these issues, promoting healthier family interactions and improved mental health. To focus on rebuilding of emotional and psychological connections in families, limiting the negative psychological effects of technology, and promoting healthier digital habits is need of an hour. Implementing these critical measures can lead to better family functioning and mental well-being in the digital age. Following recommendations are concluded.

1. Establish technology-free zones and times
2. Limit screen time and encourage healthy usage of social media apps
3. Promote co-use of technology
4. Implement digital detox periods
5. Provide guidance and coaching for technology management
6. Promote civic and educational initiatives

Declaration

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Consent to participate: A prior participation consent was voluntarily submitted by participants

Consent for publication: N/A

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Authors contribution: Gull-e-laala Khan: conceived the idea, write original draft, Amber Jamshaid and Yasir Hussain: Data analysis and write-up, Gull-e-laala Khan, Amber Jamshaid, Hamna Zaheer and Aamna Mukhtar: reviewing and editing of entire manuscript.

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