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A Qualitative Exploration of the Etiological Factors Underlying Adolescents' Tendency toward Internet Addiction

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ABSTRACT

Objective: The aim of the present study was to qualitatively examine the etiology of adolescents' tendency toward internet addiction.

Methods and Materials: This research was conducted using a qualitative approach and thematic analysis. Participants were a number of adolescents aged 12 to 18 years who were selected through purposive sampling based on high scores on Young's Internet Addiction Test and willingness to participate in the study. Data were collected through in-depth semi-structured interviews and field notes, and were analyzed concurrently with data collection using open, axial, and selective coding.

Findings: The findings indicated that adolescents' tendency toward internet addiction results from the multilayered interaction of individual factors (deficits in emotion regulation, need for belonging and approval, feelings of loneliness, perfectionism, and escape from the real self), family factors (insufficient parental monitoring, marital conflict, permissive or authoritarian parenting styles, and parents' media-use patterns), school-related factors (academic pressure, failure in peer relationships, experiences of rejection and labeling), and sociocultural factors (widespread availability of the internet, normalization of excessive use in the media, and a lack of healthy alternatives for leisure time). At the process level, the internet was experienced by adolescents as a strategy for emotion regulation, compensating for relational deficiencies, and constructing a virtual identity, which in turn led to the maintenance and intensification of addictive use.

Conclusion: Based on these results, it seems essential to design multilevel preventive programs focusing on enhancing emotion regulation skills, empowering parents, improving the school climate, and providing healthy patterns of media use in order to reduce adolescents' tendency toward internet addiction.

Keywords: Internet Addiction, Adolescents, Qualitative Study, Etiology.

Introduction

Internet use has become a defining feature of contemporary adolescence. Mobile devices, social media platforms and online games are now deeply embedded in young people's daily routines, transforming how they learn, socialize and construct their identities (Odgers & Jensen, 2020). Recent international reports show that adolescents are spending increasing portions of their waking hours online, with a growing subgroup reporting difficulties in controlling their use and experiencing distress when they attempt to cut back (Innocenti, 2025; Organization, 2025). In the WHO European Region, for example, the proportion of adolescents showing "problematic" social media use rose from 7% in 2018 to 11% in 2022, and around 12% are estimated to be at risk of problematic gaming. These patterns have intensified policy concern about the mental health implications of digital technologies for young people and have prompted calls for more nuanced, evidence-informed responses.

Within this broader landscape, the construct of "internet addiction" – often discussed alongside terms such as problematic internet use (PIU) and internet use disorders – has received sustained clinical and research attention. Although there is ongoing debate about whether excessive online engagement should be conceptualized as an addiction in its own right or as a maladaptive coping strategy shaped by contextual vulnerabilities Kardefelt-Winther (2014), many adolescents present with compulsive, poorly controlled patterns of use that resemble other behavioral addictions in their functional impact. The inclusion of Internet Gaming Disorder in Section III of the DSM-5 as a condition for further study has further legitimized the study of online-related addictions and stimulated research on their diagnostic boundaries and measurement (Király et al., 2019; Pontes & Griffiths, 2015).

Epidemiological and clinical studies suggest that problematic or addictive internet use is relatively common among adolescents. Systematic reviews of youth samples have reported prevalence estimates for internet addiction ranging from approximately 3% to 20%, with higher rates typically observed in clinical or high-risk groups (Kuss & Lopez-Fernandez, 2016; Özparlak & Karakaya, 2020).More recent meta-analytic work indicates that around one in six adolescents may meet criteria for internet addiction or PIU when validated instruments and established cut-offs are applied (Marcos et al., 2025; Özparlak & Karakaya, 2020). Notably, longitudinal evidence from the Adolescent Brain Cognitive Development (ABCD) study shows that high or increasing trajectories of addictive screen use – including social media, mobile phones and video games – are associated with two- to three-fold elevations in suicidal ideation, suicidal behaviors and broader internalizing and externalizing symptoms, even after controlling for total screen time (Xiao et al., 2023). These findings reinforce the view that it is not mere time online, but distress-driven, compulsive patterns of use that confer the greatest mental health risk.

Converging evidence links adolescent internet addiction and PIU with a wide range of psychological and functional difficulties. Cross-sectional and longitudinal studies have documented associations with depressive and anxiety symptoms, sleep disruption, behavioral problems, substance use and poorer academic performance (Fan et al., 2026; Kaya & Dalgiç, 2021; Marcos et al., 2025; Özparlak & Karakaya, 2020). A recent policy-oriented evidence review conducted for the WHO Regional Office for Europe similarly concludes that problematic digital engagement is consistently related to depression, self-harm, suicide-related behaviors, loneliness, low self-esteem and stress in young people, although the direction of causality is likely bidirectional and moderated by individual and environmental factors (Organization, 2025). These patterns underscore the importance of moving beyond prevalence estimates to a deeper understanding of how and why some adolescents slide from intensive but non-problematic internet use into addictive trajectories.

A growing line of research highlights the role of individual-level vulnerabilities in this process. Longitudinal work has shown that early emotion regulation strategies predict later risk of internet addiction in adolescence, suggesting that difficulties in managing negative affect may

predispose young people to use online activities as a form of escape or self-soothing (Cimino & Cerniglia, 2018). Narrative and quantitative reviews indicate that problematic internet use can function as a maladaptive coping strategy to compensate for emotion regulation deficits across adolescence and young adulthood (Gioia et al., 2021; Guerrini Usubini et al., 2022). Other studies emphasize the centrality of loneliness and unmet needs for belonging: loneliness has been linked to higher PIU in both cross-sectional and longitudinal designs, with detachment from parents and dissociative tendencies partially mediating this relationship (Fukuya et al., 2025; Matiz et al., 2024; Musetti et al., 2020). These findings resonate with clinical observations that many adolescents with internet addiction describe the online world as a space where they can temporarily escape self-criticism, social anxiety and perfectionistic self-standards, receive validation and construct alternative identities that feel more controllable than their "offline" selves.

At the same time, family context has emerged as a key ecological layer shaping adolescents' vulnerability to addictive internet use. Systematic reviews and large-scale studies show that low parental warmth, inconsistent or overly harsh discipline, impaired parent–child communication, and limited monitoring of online activities are associated with greater odds of PIU (Gong et al., 2024; Liu et al., 2024; Nannatt et al., 2022). Insecure attachment relationships, interparental conflict and parental mental health problems further amplify risk, whereas supportive family climates and clear, collaboratively negotiated rules about internet use appear protective (Chen et al., 2025; Trumello et al., 2018). Importantly, parents' own media habits and attitudes serve as powerful models; adolescents whose caregivers engage in heavy or dysregulated screen use report higher levels of problematic use themselves (Liu et al., 2024). These patterns suggest that adolescents' internet habits cannot be understood in isolation from broader family dynamics and relational histories.

School and peer environments constitute another critical layer. Experiences of school victimization, peer bullying and social exclusion have repeatedly been linked to higher levels of internet addiction and PIU, with life satisfaction, loneliness and school connectedness acting as mediators in some studies (Chen et al., 2026; Li et al., 2025; Shi & Wang, 2023). A recent meta-analytic review concludes that peer victimization and problematic internet use are moderately associated, and that deviant peer affiliation further compounds risk (Andrianie et al., 2024). Academic pressure, repeated academic failure and stigmatizing labels within school settings have also been identified as contextual stressors that may drive adolescents toward online spaces where they feel more competent, anonymous or accepted (Özparlak & Karakaya, 2020).

Beyond these proximal settings, structural and socio-cultural conditions shape the background against which internet addiction develops. High-speed connectivity, widespread smartphone ownership and the design of attention-capturing platforms make continuous online engagement both easy and normatively encouraged (Montag et al., 2024). Policy briefs and global reports have emphasized that digital environments are not neutral: algorithmic amplification, persuasive design features and commercialization strategies create "digital determinants" that can either support or undermine youth mental health, depending on how they interact with individual vulnerabilities and local opportunities for healthy offline activities (Innocenti, 2025; Organization, 2025). In many communities, limited access to safe physical spaces, extracurricular programs or meaningful leisure opportunities further increases the relative appeal of online worlds, which can offer immediate rewards, social connection and a sense of mastery.

Despite this accumulating body of quantitative research, there remain important gaps in our understanding of the lived, subjective etiologies of adolescent internet addiction. Much of the existing literature relies on cross-sectional self-report surveys and variable-centered analyses, which identify statistical associations but provide limited insight into how adolescents themselves interpret the pathways leading from everyday internet use to patterns they experience as addictive (Gioia et al., 2021; Kuss & Lopez-Fernandez, 2016). Recent policy reports have stressed the

need to center young people's own narratives when designing interventions and regulations in the digital sphere (Innocenti, 2025; Organization, 2025). Qualitative studies, particularly in diverse sociocultural settings, are well placed to illuminate how adolescents make sense of their internet use in relation to personal histories, family dynamics, school experiences and broader cultural norms around technology, success and belonging.

Standardized instruments such as Young's Internet Addiction Test (IAT) are widely used to screen for clinically significant levels of problematic use and to identify adolescents who may be at risk (Widyanto & McMurran, 2004). Recent psychometric studies across different countries and languages confirm the reliability and validity of the IAT in adolescent and young adult samples, supporting its utility as a selection tool for in-depth clinical and qualitative work (Athira et al., 2026; Herrero et al.; Liu et al., 2025; Nadiradze et al., 2024). Building on this measurement base, there is a pressing need for idiographic, context-sensitive research that explores how high-scoring adolescents narrate the origins and maintenance of their internet use problems.

The present qualitative study was designed to address this gap by conducting an in-depth thematic analysis of adolescents' accounts of the factors that, from their perspective, contribute to the development and persistence of internet addiction. Focusing on adolescents aged 12–18 years who scored above the clinical cut-off on Young's IAT and agreed to participate in semi-structured interviews, the study sought to elucidate the multi-layered interplay of individual, familial, school-related and socio-cultural influences in their trajectories toward addictive internet use. By giving analytic priority to adolescents' own meanings and causal explanations, this research aims to generate a nuanced etiological model that can inform the design of multi-level preventive interventions targeting emotion regulation skills, parenting practices, school climate and healthier cultural norms of media consumption.

Methods and Materials

Study Design

This study employed a qualitative design using thematic analysis to explore adolescents' subjective understandings of the factors that contribute to the development and maintenance of internet addiction. A qualitative approach was chosen because it allows for an in-depth examination of meanings, experiences and contextual processes that cannot be adequately captured through standardized questionnaires alone. The study was situated within an interpretive paradigm, assuming that adolescents' experiences of internet use and addiction are socially constructed and best understood through their own narratives and interpretations.

Participants and Recruitment

The study was conducted in Isfahan Province, Iran. Participants were recruited from public and private middle and high schools located in urban areas of Isfahan. In total, 20 adolescents between 12 and 18 years of age participated in the study. Of these, 12 identified as girls and 8 as boys, and they were recruited from middle and high schools in the study region.

Participants were adolescents aged 12 to 18 years who were identified as being at risk of internet addiction based on their scores on Young's Internet Addiction Test (IAT). Initially, a larger pool of students was screened in collaboration with school counselors and psychologists. Adolescents who obtained scores above the recommended clinical cut-off for problematic internet use and who expressed willingness to talk about their experiences were considered eligible. Purposeful sampling was used to ensure that the sample included variation in gender, age, school grade and type of online activities (e.g., gaming, social media, streaming). Recruitment continued until informational redundancy and thematic saturation were reached, that is, when additional interviews no longer generated substantially new codes or themes.

To protect confidentiality, schools and families were approached through official channels, and information

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sessions were held to explain the aims and procedures of the study. Written informed consent was obtained from parents or legal guardians, and written assent was obtained from the adolescents themselves. Participation was voluntary and adolescents were informed that they could withdraw at any time without any negative consequences.

Measures and Sampling Criteria

Young's Internet Addiction Test (IAT) was used as a screening instrument to identify adolescents with high levels of problematic internet use. The IAT is a 20-item self-report scale that assesses the extent to which internet use interferes with daily life, psychological well-being and social functioning. Each item is rated on a Likert scale, and higher scores indicate greater risk of addiction-like patterns of use. In the present study, adolescents scoring in the "moderate" or "severe" range on the IAT were eligible for inclusion, provided that they also reported subjective difficulties in controlling their internet use. In addition to the IAT, a short demographic form was used to collect information about age, gender, school grade, family structure and general patterns of internet use (hours per day, main activities, devices used). These data were used to describe the sample and to support maximum variation sampling.

Data Collection

Data were collected through in-depth semi-structured interviews and supplementary field notes. An interview guide was developed based on the existing literature on internet addiction in adolescents and on clinical observations of problematic internet use. The guide included open-ended questions about the history of the adolescent's internet use, perceived benefits and costs of being online, attempts to control or reduce use, emotional and interpersonal experiences associated with internet use, and perceived factors that had pushed them toward or kept them in an addiction-like pattern. Probing questions were used to elicit concrete examples, clarify meanings and explore underlying emotions and interpretations.

Interviews were conducted individually in a quiet, private room in the school or a counseling center, depending on the participant's preference and logistical considerations. Each interview lasted approximately 45 to 90 minutes. With participants' and parents' permission, interviews were audio-recorded and later transcribed verbatim. During and immediately after each interview, the interviewer also wrote field notes documenting non-verbal cues, emotional reactions, contextual details and emerging analytical ideas. These field notes were incorporated into the analysis as an additional source of data and as a reflexive tool.

Data Analysis

Data analysis followed the principles of thematic analysis with a focus on identifying patterns related to the perceived causes and maintaining factors of internet addiction in adolescents. The process was iterative and began during data collection. First, all transcripts were read several times to gain an overall sense of the material and to become familiar with the content. Initial open coding was then performed line by line, assigning descriptive labels to segments of text that captured meaningful units related to experiences, beliefs, emotions, behaviors and contextual influences.

In the next phase, axial coding was used to examine relationships between codes and to cluster them into more abstract categories. Codes that referred to similar phenomena were grouped, and links between individual, familial, school-related and socio-cultural factors were explored. Particular attention was paid to conditions, mechanisms and consequences described by the adolescents, as well as to processes of escalation from "normal" to problematic use. Finally, selective coding was carried out to integrate the categories into overarching themes that represented the core dimensions of the adolescents' etiological narratives. Throughout the process, the researchers moved back and forth between transcripts, codes and emerging thematic maps, refining the themes and checking them against the data to ensure coherence and distinctiveness.

To facilitate the organization and retrieval of data, qualitative data analysis software (e.g., MAXQDA or NVivo) was used. The software supported systematic coding, comparison of cases and documentation of analytic memos. However, interpretive decisions and theme development

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were grounded in close reading of the transcripts and regular team discussions rather than being driven by the software itself.

Data collection and analysis proceeded iteratively. After every three to four interviews, the research team met to compare emerging codes and preliminary themes across cases. Theoretical saturation was considered to be reached when new interviews no longer generated substantially new codes or dimensions within the existing thematic structure, and when variations within each theme were sufficiently understood. Saturation was judged collectively by the research team and was further supported by the recurrence of similar explanatory patterns across participants with different ages and gender.

Trustworthiness and Rigor

Several strategies were employed to enhance the trustworthiness of the findings. Credibility was strengthened through prolonged engagement with the data, repeated readings of the transcripts and the use of probing questions during interviews to clarify meanings and avoid superficial explanations. When feasible, preliminary interpretations were discussed with a subsample of participants (member checking) to verify that the researchers' understanding resonated with adolescents' intended meanings. Peer debriefing sessions were held in which two researchers independently coded a subset of transcripts and compared their coding schemes, discussing discrepancies and refining the codebook until consensus was reached.

Dependability and confirmability were supported by maintaining an audit trail, including documentation of sampling decisions, interview guides, coding frameworks, memos and reflections on methodological choices. Reflexive notes were used to examine how researchers' assumptions, professional backgrounds and personal experiences with digital technologies might influence data collection and analysis. Transferability was facilitated by providing rich, thick descriptions of the context, participants and themes, allowing readers to assess the applicability of the findings to other settings and adolescent populations.

Ethical Considerations

The study protocol was reviewed and approved by the institutional ethics committee of the affiliated university. All procedures complied with ethical standards for research involving minors. Participants and their parents were informed about the aims of the study, the voluntary nature of participation, confidentiality and the handling of sensitive information. Pseudonyms were used in transcripts and reports, and any identifying details were removed or altered to protect anonymity. Audio files and transcripts were stored securely with access restricted to the research team.

Given the potential sensitivity of topics such as family conflict, emotional distress and problematic internet use, interviews were conducted by a trained clinical or counseling psychologist experienced in working with adolescents. If an interview revealed acute psychological distress, suicidal ideation or severe functional impairment, the adolescent was gently encouraged to seek professional help and, with their and their parents' permission, was referred to appropriate school or community mental health services.

Findings and Results

The analysis of the interviews yielded a rich, multi-layered understanding of how adolescents made sense of their progression from intensive to addictive internet use. Across cases, internet addiction was not described as the result of a single cause, but as the outcome of a gradual process in which individual vulnerabilities interacted with family dynamics, school experiences and broader socio-cultural conditions. From the adolescents' narratives, five interrelated thematic domains were identified: individual-level factors, family-level factors, school-related factors, socio-cultural and structural conditions, and a process dimension describing how seemingly functional use turned into an addiction-like pattern. Together, these domains formed a dynamic etiological model of internet addiction in adolescence.

The final sample included adolescents between 12 and 18 years old with high scores on Young's Internet Addiction Test and self-reported difficulties in controlling their

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internet use. Most participants described spending several hours per day online, with patterns that combined social media, online gaming, streaming content and messaging. Although the specific platforms and activities varied, the themes that emerged about why and how their use escalated showed considerable convergence across gender, age and preferred online environments.

Individual-Level Factors

A central theme concerned individual vulnerabilities related to emotion regulation, self-concept and coping. Many adolescents described the internet as their primary way of dealing with intense or confusing emotions such as sadness, anger, anxiety, shame and emptiness. Rather than turning to caregivers or peers face-to-face, they reported opening social media, games or video platforms whenever they felt "overwhelmed," "too tired to think" or "about to explode." One participant explained: "When I'm angry or stressed, I just go online. In five minutes I don't feel anything anymore. It's like the feelings freeze" (Participant 4, 15-year-old boy). For several adolescents, this pattern gradually replaced other regulation strategies and created a strong association between negative affect and going online.

Emotion dysregulation was closely intertwined with a strong need for belonging and external validation. Adolescents who felt "invisible," "boring" or "not good enough" in offline settings described the online world as a place where they could receive quick feedback in the form of likes, comments, victories in games or constant messaging. One girl shared: "In real life nobody cares what I post or say. Online, if I upload something, I get reactions. It proves I exist" (Participant 9, 16-year-old girl). For some, social media metrics became a crucial source of self-worth, amplifying perfectionistic tendencies and fear of failure. They spent long periods curating their profiles, editing photos or rehearsing messages to avoid criticism and maximize approval.

Another recurring individual factor was the experience of loneliness and a desire to escape from one's "real" self. Adolescents who described themselves as "shy," "awkward" or "too sensitive" often constructed alternative identities online, where they could be more confident, humorous or socially skilled. These virtual identities were experienced as safer and more controllable than their offline selves. One boy said: "Offline I'm quiet and people think I'm weird. In the game, I'm the leader of the team. They respect me. I prefer that version of me" (Participant 2, 14-year-old boy). Over time, the contrast between their online and offline identities increased, deepening dissatisfaction with their everyday life and reinforcing the impulse to remain in digital spaces.

For several participants, perfectionism and fear of negative evaluation also contributed to avoidance of offline tasks and responsibilities. When faced with academic demands, social challenges or family expectations they felt unable to meet, the internet became a way to delay or escape uncomfortable situations. Some adolescents explicitly described a cycle of procrastination and self-criticism: they went online to avoid stress, then felt guilty about lost time and academic failure, which in turn intensified their need for further escape. This cycle was frequently mentioned as a key mechanism through which occasional overuse transformed into compulsive, difficult-to-control patterns.

Family-Level Factors

Adolescents' accounts pointed to the family environment as a crucial context shaping the development of addictive internet use. Many participants described inconsistent or insufficient parental monitoring of their online activities. Some reported that their parents were largely unaware of how much time they spent online or what they did on the internet, especially when parents were preoccupied with work, caregiving for other family members or their own digital devices. One participant noted: "My parents are busy with their phones all the time. They just say 'don't stay up too late,' but they don't really know what I'm doing" (Participant 6, 13-year-old girl).

In other cases, rules about internet use existed but were applied in a rigid, punitive or unpredictable way. Adolescents from families with authoritarian or harsh parenting styles described strict bans, confiscation of devices or sudden disconnection of the internet as typical responses to conflict. These strategies were often experienced as

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humiliating and provoked secretive use or lying rather than genuine regulation. A boy commented: "If I tell my father I'm addicted, he just shouts and takes my phone. So I hide. I use it at night under the blanket" (Participant 11, 17-year-old boy). Conversely, adolescents in permissive environments, where parents rarely set limits or discussed online risks, described a sense of being "left alone" with the internet and having to self-regulate without guidance.

Marital conflict and emotional climate within the family also emerged as important themes. Several adolescents reported using the internet to escape tense, noisy or hostile home atmospheres. Those who witnessed frequent arguments between parents, or who perceived their parents as emotionally unavailable or depressed, described going online as a way to "leave the house without leaving" or to avoid being drawn into conflicts. One girl explained: "When they start fighting, I just put on my headphones and go online. It's like closing the door of another world" (Participant 8, 15-year-old girl). In such contexts, the internet functioned both as a shield against distressing family interactions and as a surrogate source of emotional support.

Parental media habits played a modeling role as well. Adolescents whose parents spent large amounts of time on their own phones, televisions or computers reported feeling that intensive screen use was "normal" adult behavior. This normalization sometimes made it difficult for parents to credibly ask their children to reduce their use. A number of participants described situations in which attempts to discuss internet use led to arguments about "double standards" because parents themselves frequently used social media or streaming services during family time. This perceived hypocrisy weakened parental authority and contributed to adolescents' resistance to change.

School-Related Factors

The school setting appeared as another significant layer in adolescents' narratives of internet addiction. Many participants described high academic pressure, frequent examinations and intense expectations from parents and teachers to achieve top grades. For adolescents who struggled academically or who had learning difficulties, the classroom became a site of repeated failure and shame. In this context, the internet offered immediate relief and alternative sources of achievement. As one boy summarized: "At school I'm always the one who doesn't finish the test. Online, I can be the winner" (Participant 3, 14-year-old boy).

Simultaneously, difficulties in peer relationships at school were repeatedly mentioned as triggers for increased online engagement. Adolescents who had experienced bullying, exclusion, teasing or stigmatizing labels (e.g., "loser," "weirdo," "nerd") often withdrew from face-to-face interactions and sought connection in digital spaces. Some found supportive communities in online games, fandoms or interest-based groups; others became involved in group chats or forums where they could re-negotiate their social status. A participant who had been bullied for her appearance said: "In class they laugh at me. Online nobody sees my face. They only see my messages. I can be funny there" (Participant 10, 16-year-old girl).

School responses to problematic internet use were perceived as inconsistent. Some participants reported that teachers simply complained about "phone addiction" without offering concrete support or guidance. Others described disciplinary measures such as confiscating phones or prohibiting device use during breaks, which they experienced as unfair, especially when digital tools were simultaneously required for homework or class assignments. In a few cases, adolescents expressed that school counselors helped them reflect on their use and develop alternative coping strategies, but these positive experiences were rare. Overall, the school context was depicted more often as a stressor or a site of humiliation than as a resource in preventing or addressing internet addiction.

Socio-Cultural and Structural Conditions

Beyond family and school, adolescents located their experiences within a broader socio-cultural environment that strongly encouraged constant connectivity. Many participants described living in homes where high-speed internet and multiple devices were available, and where being online late at night was common among siblings and

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peers. They noted that most social and academic communication now occurred through digital platforms, making it difficult to distinguish between "necessary" and "optional" online time. One boy remarked: "Teachers send homework on the app, friends chat on the app, everything is on the phone. If you turn it off, you disappear" (Participant 5, 15-year-old boy).

Participants also commented on the pervasive cultural narrative that equates being "updated" and "reachable" with being responsible and socially competent. The fear of missing out (FOMO) on news, jokes, trends or peer interactions was frequently cited as a reason for keeping devices nearby and checking them repeatedly, even when adolescents recognized that this behavior disrupted sleep, concentration or family time. In their view, social media platforms and online games were designed to keep them engaged through notifications, rewards and continuous new content, making it "too easy" to remain online for hours.

A further theme concerned the lack of accessible and attractive offline alternatives for leisure and socialization. Several adolescents reported living in neighborhoods with limited safe public spaces, few youth clubs or extracurricular activities, and financial barriers to sports or hobbies. In such contexts, the internet emerged as the most convenient, affordable and socially accepted way to spend free time. Some participants, particularly girls, mentioned cultural restrictions on going out alone or meeting friends in public places, which narrowed their opportunities for offline social engagement and further increased their dependence on digital environments.

Process Dimension: From Functional Use to Addictive Patterns

Across interviews, adolescents described a broadly similar trajectory from initial, seemingly functional internet use to patterns they themselves labeled as "addictive." This process dimension cut across the other themes and highlighted the dynamic nature of internet addiction. In the early phase, most participants started using the internet mainly for homework, entertainment or maintaining friendships. Over time, as individual vulnerabilities, family tensions, school pressures and socio-cultural factors converged, online activities acquired new functions: regulating negative emotions, compensating for social rejection, constructing preferred identities and escaping from stressful realities.

The transition to problematic use was often gradual and difficult for adolescents to recognize. Many spoke of a "turning point" where they realized they were losing control—such as staying online until dawn despite early school obligations, neglecting basic self-care, lying about their use, or feeling intense irritability and emptiness when offline. One participant recalled: "At first it was just playing after homework. Then I started playing instead of homework. Now, even if I want to stop, my hand goes to the phone by itself" (Participant 1, 13-year-old boy). Attempts to reduce use typically resulted in short-term success, followed by relapses triggered by stress, boredom or interpersonal conflict.

Adolescents frequently described a cyclical pattern of relief and guilt: going online temporarily reduced tension and provided comfort, but prolonged use led to academic problems, conflicts with parents and social withdrawal, which in turn intensified negative emotions and strengthened the urge to escape again into the digital world. This self-perpetuating cycle was experienced as a "trap" or "loop" that they felt unable to break without external help. For some, the experience of being "addicted" also became part of their identity, contributing to feelings of hopelessness and passivity regarding change.

Taken together, the findings indicate that adolescents' trajectories toward internet addiction are shaped by the interplay of emotion regulation difficulties, fragile self-concepts and maladaptive coping strategies at the individual level; insufficient or inconsistent parental monitoring, family conflict and problematic parental media use at the family level; academic pressure, school failure and peer victimization at the school level; and socio-cultural norms that normalize heavy connectivity while limiting offline opportunities for meaningful engagement. These factors converge in a gradual process whereby the internet shifts from being a tool and source of enjoyment to becoming an

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essential, yet ultimately constraining, strategy for managing emotional pain and relational needs. This multi-layered etiological model provides an empirical basis for designing preventive and therapeutic interventions that address not only individual skills but also family, school and cultural contexts.

Conceptual interactional model of adolescent internet addiction

Based on the thematic analysis, we developed a conceptual interactional model of adolescent internet addiction (Figure 1). At the centre of the model are adolescents' individual vulnerabilities, including emotion-regulation difficulties, loneliness, perfectionism and a tendency to escape from a devalued "real self." These vulnerabilities are embedded within the family context (e.g., limited or inconsistent parental monitoring, marital conflict, parenting style and parental media habits) and the school and peer context (e.g., academic pressure, school failure, peer rejection and victimization). These proximal systems, in turn, are situated within broader socio-cultural and structural conditions, such as the widespread availability of high-speed internet, persuasive platform design, normalization of heavy connectivity and limited offline leisure opportunities. The model also incorporates a process dimension: as these layers interact over time, adolescents' internet use may gradually shift from functional or recreational engagement into a dominant coping strategy and, eventually, into a compulsive, addiction-like pattern that is experienced as difficult to control.

Discussion and Conclusion

The present qualitative study explored how adolescents who scored high on Young's Internet Addiction Test make sense of the factors that drive and maintain their addictive internet use. Across interviews, internet addiction emerged as a multilayered phenomenon rooted in individual emotion regulation difficulties and fragile self-concepts, embedded in family conflict and inconsistent parenting, intensified by academic pressure and peer problems at school, and reinforced by a socio-cultural environment that normalizes constant connectivity and offers few attractive offline alternatives. Adolescents described a gradual trajectory in which initially functional internet use turned into a primary means of managing emotions, relationships and identity, eventually becoming experienced as a "trap" that was hard to escape. Similar constellations of themes have been reported in recent qualitative work with adolescents in Indonesia, India and Iran, which also highlight unmet social needs, emotional distress and contextual vulnerabilities as central to lived experiences of internet addiction (Ahmadi, 2014; Chen et al., 2026; Nadiradze et al., 2024).

These findings were integrated into a conceptual interactional model (Figure 1) that situates adolescents' individual vulnerabilities within family, school and socio-cultural systems and highlights the dynamic process through which internet use evolves from a functional tool into an addiction-like pattern.

Individual vulnerabilities and emotion regulation

A first major finding was the central role of emotion dysregulation, loneliness, perfectionism and escape from a disliked "real self" in adolescents' etiological narratives. Participants repeatedly described going online to "freeze" or numb overwhelming feelings, to obtain rapid validation, and to inhabit alternative identities that felt more competent or socially accepted than their offline selves. These accounts converge with quantitative and review studies showing that problematic internet use and related behaviors (e.g., problematic gaming, social media overuse) often function as maladaptive coping strategies to compensate for deficits in emotion regulation and social support Duch-Ceballos et al., (2025), Gioia et al., (2021), Mo et al., (2018), Villanueva-Blasco et al., (2026).

This pattern can be interpreted within a developmental-psychopathology framework. Many adolescents in this study lacked flexible strategies to tolerate and modulate distress and had limited access to responsive adults. In such conditions, highly stimulating digital environments provide immediate negative reinforcement: going online reduces aversive affect in the short term, which strengthens the tendency to use the internet whenever negative emotions arise. Over time, this reinforces an avoidance-based coping

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style and prevents the practice of more adaptive strategies, thereby increasing both emotional vulnerability and the centrality of the internet in the adolescent's regulatory repertoire. The contrast between idealized online selves and devalued offline selves further entrenches dependence on virtual spaces, as leaving the internet means returning to an identity experienced as inadequate or stigmatized.

Family dynamics and parental media ecology

A second key finding concerned the family environment. Adolescents located their internet addiction in the context of limited parental monitoring, inconsistent or harsh rule-setting, marital conflict and parents' own heavy or dysregulated media use. They described feeling either largely unsupervised with respect to their online life or subjected to punitive, credibility-undermining control practices that fostered secrecy and resistance rather than collaboration. These narratives are consistent with correlational and longitudinal research linking problematic internet use in adolescents to low family functioning, emotion regulation difficulties in the family context, and insufficient or poorly calibrated parental mediation Aziz et al., (2022), Bleakley et al., (2016), Günaydın et al., (2022); Li et al., (2025), Li et al., (2022).

From an explanatory perspective, the family themes suggest that internet addiction often arises in relational climates where adolescents' emotional needs are not consistently acknowledged and where parents either lack the time, skills or credibility to guide digital use. In homes marked by conflict, emotional distance or parental distress, the internet becomes a convenient "private room" where adolescents can withdraw without physically leaving the household. When parents simultaneously model high, unregulated screen use, adolescents receive the message that intensive media engagement is normal adult behavior, undermining attempts to establish limits. Conversely, rigid bans and device confiscation may escalate power struggles and push adolescents toward nighttime or clandestine use, which increases both addiction risk and family distrust. The findings underscore that interventions focused solely on the adolescent's "self-control" are unlikely to succeed if they do not address family communication, parental media habits and shared rule-making.

School experiences, peer relations and academic pressure

A third major theme involved school-related experiences. Participants described a combination of academic overload, repeated failure, stigmatizing labels and peer victimization leading them to retreat into online environments where they felt more competent and accepted. They reported that achievements in games or social media interactions could temporarily repair wounded self-esteem and compensate for humiliation or exclusion at school. These accounts echo evidence that peer victimization, low school connectedness and deviant peer affiliation are associated with higher levels of problematic internet use and problematic online gaming among adolescents (Andrianie et al., 2024; Li et al., 2022; Zheng et al., 2023).

Interpreted ecologically, the school context in this study often functioned as a generator of chronic stress and shame rather than a buffer. For academically struggling adolescents or those with learning difficulties, digital spaces offer a compensatory arena where effort is more immediately rewarded and failure is less visible. For those who are bullied or socially marginalized, online communities can provide a sense of belonging and agency that is missing offline. However, these compensatory functions come at the cost of further disengagement from school tasks and relationships, potentially worsening academic trajectories and reinforcing the very vulnerabilities that drive excessive use. The ambivalent role of schools—simultaneously demanding digital engagement for homework and castigating "phone addiction" without providing structured support—may further confuse adolescents about what counts as healthy versus harmful internet use.

Socio-cultural conditions and digital architectures

A fourth finding relates to broader socio-cultural and structural conditions. Adolescents portrayed a digital ecosystem in which continuous online presence is expected and algorithmically reinforced. They emphasized the fear of missing out if they disconnect and the perception that homework, peer interaction and entertainment all converge

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on the same device. Similar concerns about the "digital determinants" of youth mental health and the role of persuasive platform design have been raised in recent policy and empirical work, which points to notification systems, infinite scroll and reward structures as mechanisms that prolong screen time and increase the difficulty of disengaging Chen et al., (2025), Innocenti, (2025), Organization, (2025).

In this socio-technical context, adolescents in communities with limited safe public spaces, few organized activities and gendered restrictions on mobility may have little choice but to rely on digital media for social life and leisure. The internet thus fills structural gaps in youth services and recreational infrastructure. Yet when the same infrastructures are optimized for engagement rather than well-being, they can foster patterns of use that feel compulsive even to young people themselves. Our findings therefore support a multi-level perspective that situates adolescent internet addiction not only in individual pathology but also in the design of digital products and the availability of offline alternatives.

From coping strategy to perceived entrapment

Finally, the process dimension identified in this study—whereby internet use gradually shifts from a functional tool to an addiction-like pattern—helps integrate the thematic domains. Adolescents described a cycle in which going online initially provided relief, recognition or escape, but over time led to neglect of responsibilities, conflict with parents, deteriorating grades and social withdrawal. These consequences intensified negative emotions such as guilt, hopelessness and self-criticism, which in turn strengthened reliance on the internet as the only accessible coping mechanism. Similar loops of relief and regret, as well as experiences of entrapment, have been documented in other qualitative studies of adolescents with problematic internet use Ahmadi (2014), Rakhmawati et al., (2021), Singh et al., (2025).

Conceptually, this trajectory can be understood through models of behavioral addiction that emphasize the transition from impulsive to compulsive use. In the early phase, internet use is primarily driven by positive reinforcement (pleasure, curiosity, novelty). As stress, loneliness and conflict accumulate, negative reinforcement (relief from aversive states) becomes more salient, and the behavior increasingly serves to avoid discomfort rather than to seek enjoyment. Over time, habitual patterns and environmental cues (e.g., seeing the phone, receiving notifications) trigger automatic use, and adolescents begin to describe their behavior as "out of control." Recognizing this progression has implications for intervention timing: prevention efforts should target the stage where internet use still functions as a flexible coping strategy, before it becomes rigidly entrenched.

Limitations

Several limitations should be considered when interpreting these findings. First, the study relied on a purposive sample of adolescents who scored above the clinical cut-off on the IAT and were willing to discuss their difficulties. Their narratives may differ from those of adolescents with milder forms of problematic use or those who do not perceive their behavior as problematic. Second, the data are based on self-report and retrospective reconstruction; adolescents' descriptions of family dynamics, school experiences and the temporal evolution of their use may be influenced by memory biases or current mood. Third, the study was conducted within a specific cultural and educational context, which shapes family structures, school practices, gender norms and access to digital devices. As a result, certain themes—such as restrictions on girls' mobility or particular parenting styles—may not generalize to all settings. Finally, although efforts were made to enhance trustworthiness through triangulation, peer debriefing and reflexivity, the interpretation of themes remains influenced by the researchers' theoretical orientations and clinical backgrounds.

Suggestions for practice and future research

Despite these limitations, the study offers several implications. At the clinical and preventive level, the findings argue for multi-component interventions that go beyond time-management apps or individual psychoeducation. Programs should explicitly address adolescents' emotion regulation skills, including strategies for tolerating distress, managing shame and perfectionism, and integrating online and offline identities in a coherent sense of self. Family-focused components are essential, with an emphasis on improving emotional communication, modeling healthier media use, co-constructing realistic rules about internet use, and reducing marital conflict or parental inconsistency where possible. School-based initiatives should tackle both academic stress and peer victimization, for example by integrating digital well-being into health curricula, fostering supportive teacher–student relationships, and providing safe spaces where students can talk about online pressures without fear of punishment. At a policy level, the results support calls for regulating persuasive platform features that disproportionately target adolescents and for investing in accessible, attractive offline leisure opportunities—particularly in communities where such options are scarce.

Future research could build on these findings in several ways. Longitudinal qualitative and mixed-methods studies are needed to trace how trajectories of internet use and related mental health outcomes unfold over time, and to identify turning points that facilitate either escalation or recovery. Comparative studies across cultural contexts would help clarify which etiological pathways are universal and which are context-specific. In addition, intervention research informed by adolescents' own narratives—such as packages designed from qualitative themes and then tested in randomized trials—could bridge the gap between descriptive knowledge and practical solutions (Ahmadi, 2014; Shirdel et al., 2025). Finally, future work should include adolescents who have successfully reduced problematic use, to illuminate resilience processes and protective factors that can be amplified in prevention programs.

Taken together, the present study reinforces the view that adolescent internet addiction is not simply a matter of "too much screen time," but a complex response to layered emotional, relational, institutional and technological conditions. Addressing it effectively will require coordinated efforts that respect adolescents' lived experiences and intervene simultaneously at the levels of the individual, family, school and digital environment.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Declaration of Helsinki, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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