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## DIGITAL ADDICTION AND YOUTH WELL-BEING: A REVIEW OF MENTAL HEALTH, SOCIAL BEHAVIOR, AND LIFESTYLE OUTCOMES

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Article Received: 25 April 2026, Article Revised: 15 May 2026, Published on: 05 June 2026

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DOI: <https://doi-doi.org/101555/ijarp.3139>

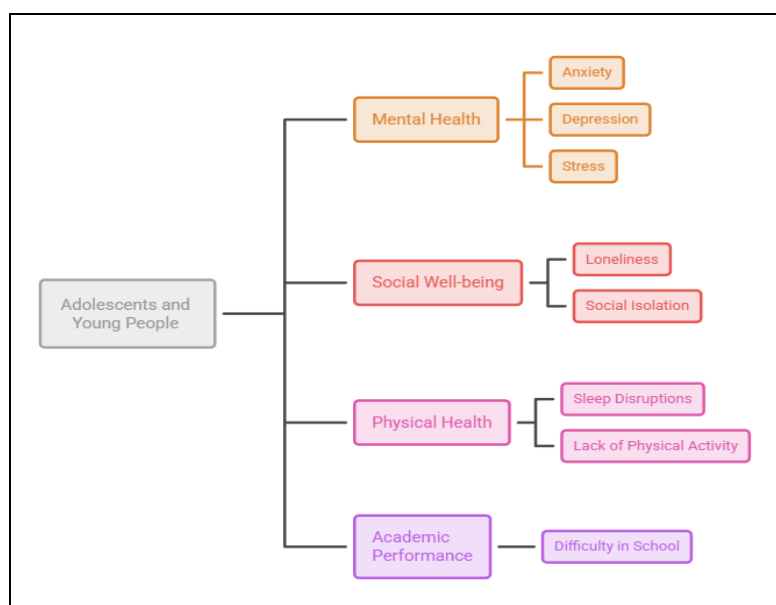
### ABSTRACT

Digital technology has become a part of life, so much so that many adolescents and young people use digital space as a means of communication, learning, entertainment and social engagement. Although these technologies have many advantages, they have also led to the recent trend of digital addiction, which has raised concerns about their effects on the health of youth. The objective of this review is to explore the association between digital addiction and different aspects of youth well-being such as mental health, social behaviors, and lifestyle outcomes. Based on previous studies in psychology, sociology, education and public health, the review examines the main types of digital addiction such as internet addiction, smartphone dependence, social media addiction, online gaming addiction and streaming content addiction. The study also examines the theoretical models that account for addictive use of digital technologies, and explores certain individual, family, social, and technological risk factors that may explain excessive technology use. The result showed that there are negative mental health consequences linked to digital addiction including anxiety, depression, stress, emotional instability and low self-esteem. Also, overuse of digital usage has been associated with social isolation, loneliness, decreased social skills, sleep problems, physical inactivity, sedentary lifestyle and reduced school performance. Additionally, the review underscores the intricate relationship between psychological susceptibility, environmental factors and technology design characteristics and their impact on digital behavior.

**KEYWORDS:** Digital Addiction, Internet Addiction, Social Media Addiction, Youth Well-Being, Mental Health, Social Behavior, Lifestyle Outcomes, Adolescents.

## INTRODUCTION

Digital technology has experienced rapid development and has impacted many aspects of contemporary life, especially for children, adolescents and young adults. The smartphone, Internet, social media, online games, streaming and communication applications are now a part of everyday life [1]. With more and more reliance on digital devices and online platforms, researchers and healthcare professionals have started to explore what we could call a digital addiction [2]. Digital addiction refers to a range of problematic behaviours relating to excessive use of digital technologies, such as internet addiction, smartphone addiction, social media addiction and online gaming addiction. Digital addiction is characterized by compulsive use, loss of control, preoccupations with digital activities and inability to decrease digital activities even in spite of negative consequences, unlike healthy technology use [3]. The past decade has also seen emerging evidence that hyper-digitisation is associated with a number of health and social issues, which has led to it being considered a public health and social problem [4]. Digital technologies are evolving and becoming more available, and there is a growing need to understand how digital technologies are affecting young people. Youth well-being is a complex issue which involves psychological, social, emotional and physical health [5]. Adolescents and young people are facing important developmental changes that affect their identity, relationships, and life experiences. There are several negative effects associated with long hours of digital technology use, such as anxiety, depression, stress, loneliness, social isolation from others, sleep disruptions, lack of physical activity, and difficulty in school as per shown in figure 1 [6].

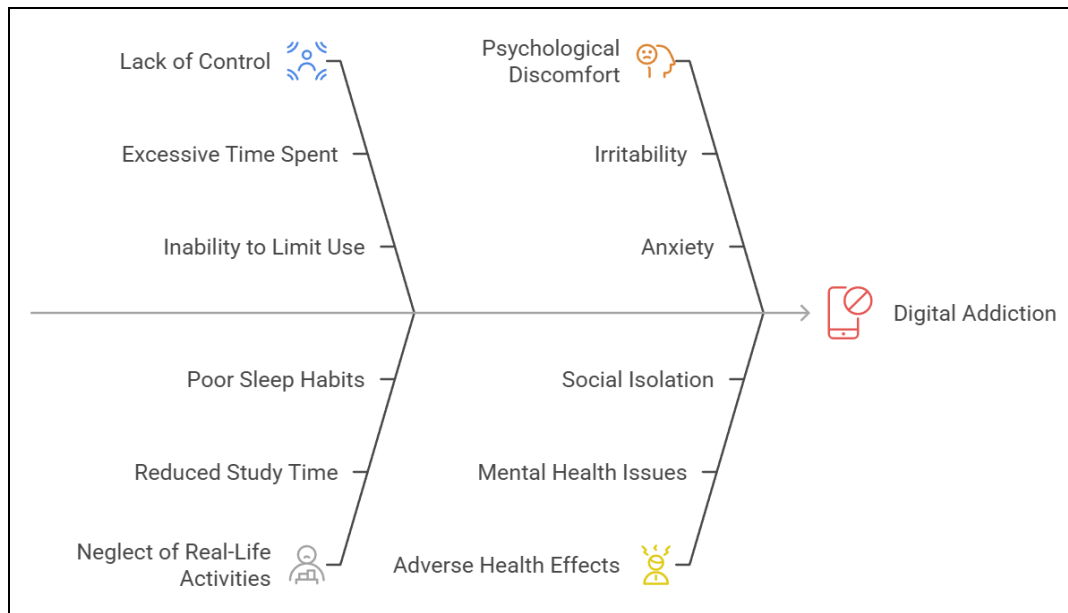


**Figure 1 Negative Effects of Excessive Digital Technology Use on Adolescents.**

Other studies, however, have found positive benefits of digital engagement, and the relationship between digital technology and well-being is complex. Thus, a synthesis of the existing knowledge is needed to gain a better understanding of these varying and sometimes conflicting findings [7]. This review's rationale is due to the rising rate of digital addiction among the youth and the amount of research focused on digital addiction's impact. The results of the investigations are still scattered in different disciplines; psychology, sociology, education and public health. So, from that perspective this review will focus on a thorough review of the literature about the effects of digital addiction on youth well-being. In particular, the review aims to examine the impact of digital addiction on psychological, social and life how problems, theoretical viewpoints, factors affecting digital addiction, research gaps, and what direction will future research take.

### **Overview**

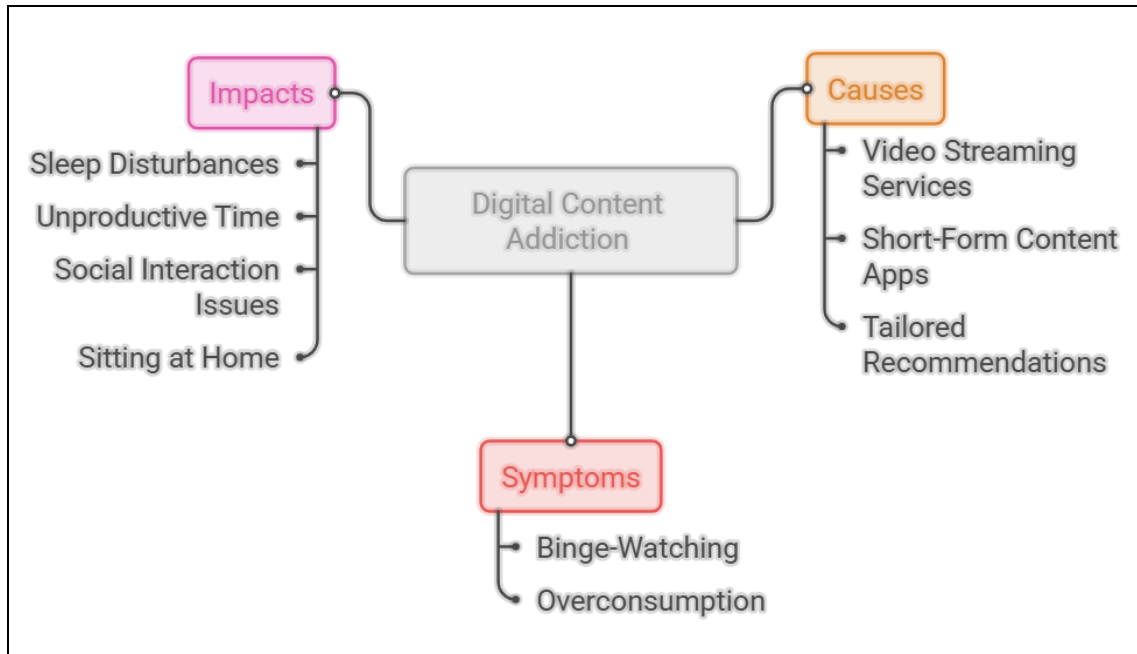
In today's world, the digital revolution has led to digital addiction becoming a major concern. Technology has profoundly shaped the lives of people and how they communicate, learn, work and entertain. Digital technologies can bring a lot of advantages, however their overuse and misuse can lead to addictive behaviors [8]. Digital addiction is defined as an excessive use of digital technologies with a loss of self-control over them and despite negative outcomes [9]. Digital addiction is sometimes regarded as a type of behavioral addiction due to the fact that it has some comparable features with other non-substance connected addictions including compulsive use, withdrawal signs and symptoms, tolerance, modifications to mood and dispute with personal, social or scholarly obligations [10]. A key feature of digital addiction is the lack of control over the amount of time spent on digital devices or online activities. People who are addicted to digital use tend to focus more on using digital media than on other activities that are important for everyday life, including studying, sleeping, exercising, and having interpersonal relationships [11]. They can also suffer from psychological discomfort, irritability, anxiety or restlessness when not able to access digital platforms. In addition, too much screen time can have adverse effects on mental health, social interaction, school performance, and well-being, especially among teenagers and young adults who are more susceptible to the impact of digital technology as shown in figure 2 [12].



**Figure 2 Understanding Digital Addiction.**

There are multiple types of digital addiction, but they are all related. When someone cannot control how he or she uses the Internet and this behavior has become excessive and has negatively affected his or her ability to function in daily life, he or she may become addicted to the Internet [13]. Online gambling is regarded as one of the oldest-known forms of digital addiction and features heavy gambling, communicating via the internet, and taking part in the internet-based activities. Smartphone addiction, meanwhile, is an instance of compulsive reliance on the smartphone and cell phone applications [14]. Smartphones are especially vulnerable to the frequent and frequent use because they are portable and easily accessible. This tendency to use the smartphone at all hours of the day makes it easy to become distracted, lose productivity, and disrupt interpersonal relationships [15]. Those who have fallen victim to social media addiction have a heightened need to read incoming messages, send posts, monitor social media interactions, and gain acceptance from others online. This type of behaviours are frequently linked to fear of missing out (FoMO), social comparison, anxiety and self-esteem [16]. Also, online gaming addiction is characterized as excessive gaming activity online, which leads to poor control of gaming behavior and neglect of other life responsibilities. Competitive gaming environments, reward systems, and immersive virtual experiences have a significant impact on extended gaming engagement [17]. Streaming and digital content addiction is another new type of addiction. With the rise of video streaming services, short-form content apps and tailored recommendations, binge-watching and overconsumption are becoming a more common occurrence [18]. Over exposure to entertainment content can cause sleep disturbances, unproductive time, sitting at

home and social interaction issues. These various types of digital addictions illustrate the complex nature of digital-behavioural dependence and the need to take a holistic approach when understanding and identifying causes, symptoms and impacts of these addictions on the health of youth as per shown in figure 3 [19].



**Figure 3 Digital Content Addiction: Causes, Symptoms, and Impacts.**

### Theoretical Perspectives on Digital Addiction

Theories have been proposed in different ways to help understanding in terms of motivations, behaviors and mechanisms of problematic technology use, when labeled as digital addiction. One of the most popular theories that are applied to digital technologies is 'Uses and Gratifications Theory' which proposes that people use digital technologies to meet specific needs, including information, entertainment, socialisation, emotional support and escapism [20]. Users can become addicted to using digital platforms for these reasons, and especially because digital platforms are able to provide them with instant communication, tailored content and perpetual chances to engage with the platform. Social Comparison Theory is another important theory stating that people make self-evaluations by comparing themselves to others' performance, appearance, and social position [21]. In the presence of social media these comparisons are more apparent and have led to a lack of satisfaction, low self-esteem, higher sense of anxiety and a need for social validation. The experiences can contribute to compulsion with platforms and even trigger addictions [22]. Self-Determination theory is one of the three primary psychological needs (autonomy, competence and relatedness) that are

also essential in the context of digital addiction. These can be offered in digital spaces either in terms of freedom of expression, through game-play and online activities to reach goals, or through social connection and interaction [23]. When the need for a virtual environment to meet these psychological needs becomes excessive, however, it can lead to problematic and unhealthy technology use, and lack of real world experiences. Theory of Problematic Internet Use is also valuable in explaining excessive internet use, as it emphasizes psychological vulnerabilities such as loneliness, depression, anxiety, stress and poor coping that are associated with excessive internet use [24]. Those with emotional issues may turn to the online world for places where they don't face difficulties in the offline world, or where they have more control over their negative emotions. These behaviors could provide a temporary respite from symptoms, but can create a vicious cycle of increased digital consumption and psychological distress. Lastly, B.A. view digital addiction as a non-substance addiction, and compares it to other addictions [25]. This model suggests that digital addiction goes through five phases that are identified by relapses when struggling to reduce technology consumption: salience - when technology becomes the main focus in a person's life, mood modification – when self-regulation of technology is used as a mood regulator, tolerance - when the person feels a need for more and more technology to obtain pleasure, withdrawal - when the person is not able to access technology, and conflict – when the person experiences problems related to personal, school, or social tasks as per shown in table 1 [26]. These theoretical frameworks reflect the complex nature of digital addiction, highlighting the importance of psychological needs, social contexts, emotional vulnerabilities, and reinforcement mechanisms in the development of digital addiction. These theories are crucial for comprehending digital addiction and its implications for young people's mental health, social behavior, and overall well-being [27].

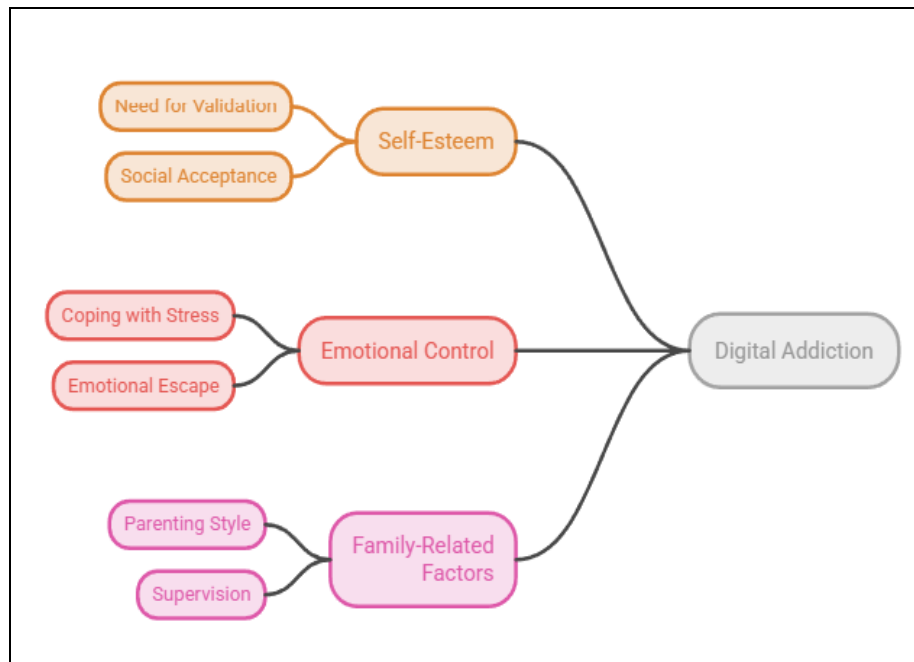
**Table 1 Major Theoretical Frameworks Explaining Digital Addiction.**

Framework	Core Concept	Role in Digital Addiction
<b>Need Fulfilment Theory (Uses and Gratifications Theory) [20]</b>	People use technology to satisfy needs such as information, entertainment, socialization, emotional support, and escapism.	Digital platforms encourage excessive use through instant communication, personalized content, and constant engagement opportunities.
<b>Social Evaluation Theory (Social Comparison Theory) [21,22]</b>	Individuals assess themselves by comparing their appearance, achievements, and social status with others.	Social media promotes comparison, leading to low self-esteem, anxiety, and a stronger need for social validation, which can contribute to addictive

		behaviors.
<b>Psychological Needs Theory (Self-Determination Theory) [23]</b>	People seek autonomy, competence, and relatedness.	Digital spaces can satisfy these needs through self-expression, achievements, and social connections, potentially leading to overreliance on technology.
<b>Psychological Vulnerability Theory (Theory of Problematic Internet Use) [24]</b>	Emotional difficulties such as loneliness, stress, anxiety, and depression influence internet use.	Individuals may use online environments to cope with negative emotions, creating a cycle of excessive use and psychological distress.
<b>Behavioral Addiction Theory (B.A. Model) [25,26]</b>	Digital addiction resembles other behavioral addictions and progresses through identifiable stages.	Addiction develops through salience, mood modification, tolerance, withdrawal, and conflict, often involving relapse when reducing technology use.

**Antecedents and Risk Factors of Digital Addiction**

Digital addiction is a complex phenomenon, affecting both the individual and family factors, and social and technological factors. An awareness of these factors is critical to risk assessment and prevention and intervention approaches. Personality traits are among individual factors that influence the use of digital information. Studies indicate that people who are impulsive, have a tendency toward sensation-seeking behavior, are neurotic, and have low conscientiousness score higher on their tendency to have excessive use of digital technologies [28]. Self-esteem will also influence the use of technology, such as those who are lower in self-esteem, feel the need to be validated, accepted and recognized socially through technology. In addition, emotional control issues can increase the risk of digital addiction because acquiring social media, games, or a computer activity online can be a means to relieve stress, anxiety, loneliness, or bad mood. Capturing too much digitally, can then become an emotional get away and over time add a level of dependency [29].



**Figure 4 Factors Influencing Digital Addiction.**

Risk factors in digital addiction consist of family-related factors and particularly for adolescents and young adults. Parents' parenting style is one of the crucial factors that determine technology-related behaviors. Figure 4 demonstrates that lack of supervision, inconsistent supervision, and/or excessive permissiveness are examples of poor parenting practices that can result in excessive screen time and problematic Internet use [30]. On the other hand, there are healthy technology habits that can be created by parent support and communication. It is also crucial to consider the communication dynamics within the family, as ineffective communication and a lack of emotional support within the family can lead to youth looking for connection and validation online [31]. Moreover, family dynamics that are conflictive, emotionally distant or neglectful can make it more difficult to engage in positive and healthy interactions offline, making online addictions more likely to occur. Another important class of risk factors are the social factors. Peer pressure is a special risk to adolescents because they are seeking acceptance from others and a sense of belonging. Online behaviors, platform preferences and online engagement can be influenced by peer groups [31]. The pressure to be constantly connected and responsive to others through technology use could also lead to excessive technology use. In addition, one of the most recent factors that has been seen as a predictor of digital addiction is the Fear of Missing Out (FoMO) [32]. FoMO is the fear that people are enjoying something without the user, and therefore they need to constantly check social media and online activities. The desire for and need to be constantly updated can perpetuate overextended use patterns and dependency on

technologies [33]. Technological factors also contribute to digital addiction to a great extent. Smartphones, high-speed Internet and portable digital devices make connectivity and access to online material readily available at all times [34]. Platform designs are designed in today's modern era intentionally to encourage users to engage more with the platform by providing notification, infinite scrolling, personalized recommendations, reward systems, and interactive platforms. Additionally, advanced algorithmic engagement features assess user preferences and actions to provide extremely relevant content to maintain longer and more frequent platform usage as per shown in table 2 [35]. Such technological features produce highly immersive digital spaces which can be engaging and foster the formation and sustainability of addictive behaviors. These combined individual, family, social and technological factors can affect the risk of digital addiction, and its consequences on youth well-being [36].

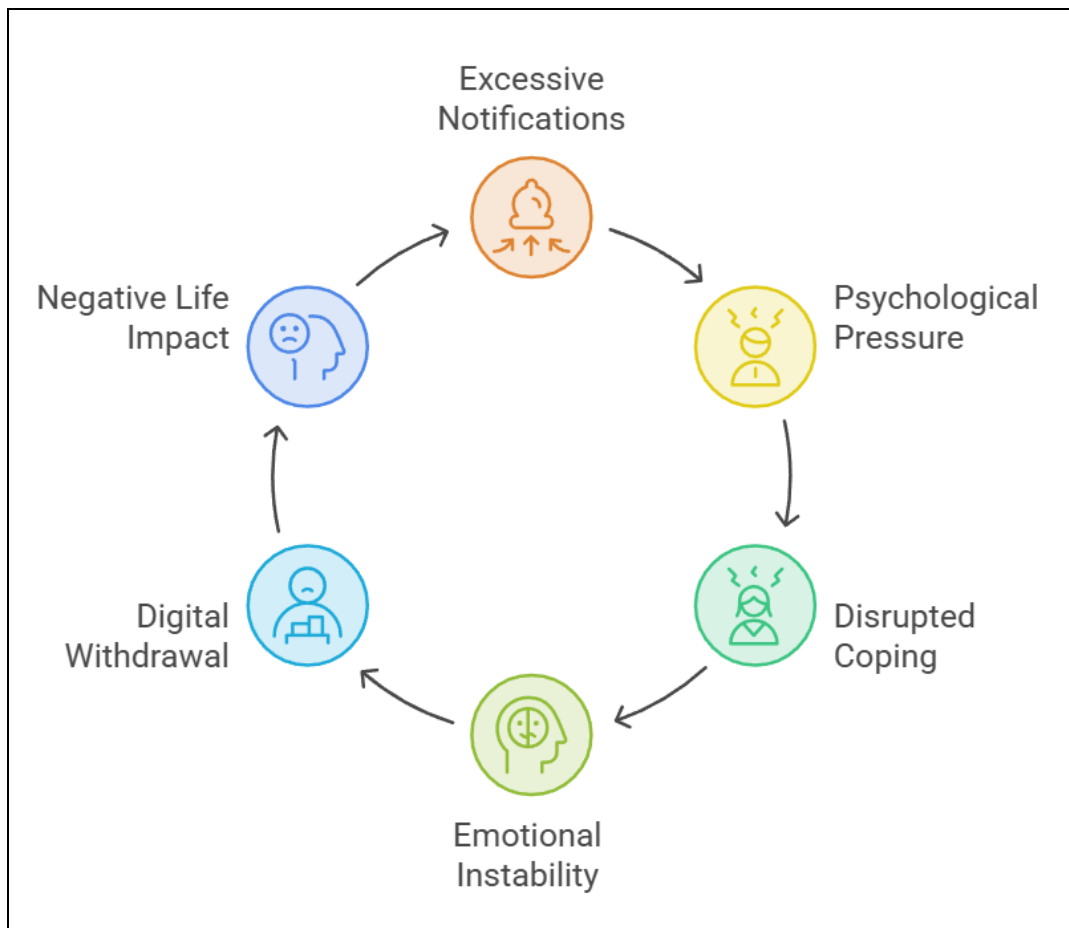
**Table 2 Individual, Family, Social, and Technological Determinants of Digital Addiction.**

<b>Factor</b>	<b>Key Elements</b>	<b>Impact on Digital Addiction</b>
<b>Individual [28,29]</b>	Impulsivity, low self-esteem, poor emotional control	Encourages excessive use for validation and emotional coping.
<b>Family [30,31]</b>	Poor supervision, weak communication, family conflict	Increases reliance on digital platforms for support and connection.
<b>Social [31–33]</b>	Peer pressure, social acceptance, FoMO	Promotes constant online engagement and compulsive use.
<b>Technological [34,35]</b>	Smartphones, notifications, algorithms, personalized content	Enhances accessibility and prolonged platform use.

**Digital Addiction and Mental Health Outcomes**

But digital addiction has become a serious issue of public health because it has a great impact on the psychological well-being and mental health of young people. The use of digital technologies offers opportunities to communicate, learn and entertain, but their intensive use and lack of control have been linked with a range of negative mental health effects over time [37]. One of the most frequently mentioned side effects is anxiety, which can be brought about by their constant connectivity, the high volume of social media they use, information overload and the need to be constantly available online. Adolescents and young adults may experience anxiety when they are worried about missing out on news or social events or on online activities, which can lead to ongoing anxiety and nervousness [38]. Depression is also a strong association of digital addiction. When people are exposed to an idealized version of other people's lives on social networking sites, it can lead people to make unfavorable

comparisons, feelings of inadequacy, and to have a lower life satisfaction. Spending too much time online can also deprive them of real relationships, leading to loneliness and social isolation, both of which can lead to depression [39]. Digital addiction has been linked with an increased stress level and psychological burden other than anxiety and depression. Excessive digitally delivered notifications, technological learning supports, cyberbullying and the need for instant responses can result in a lot of psychological pressure. Too much screen time can also disrupt healthy coping strategies, and limit relaxation which can make life more stressful [40]. In addition, emotional instability, mood swings, irritability, frustration and emotional management problems can be a part of digital addiction. People who are over-reliant on digital technology may feel some discomfort when taken away, and feel less resilient when facing a digital technology withdrawal. This emotional roller coaster can have a negative impact on relationships, schoolwork and lifestyle as per shown in figure 5 [41].



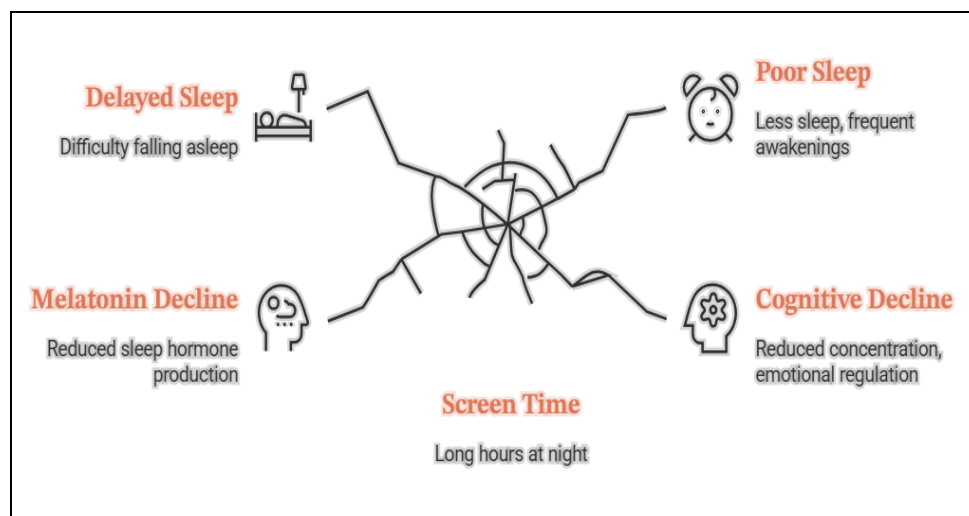
**Figure 5 Cycle of Digital Addiction's Psychological Burden.**

The impact of digital addiction on the self-esteem and self-concept is another important side-effect. Social media can often become a means for young people to find support and

validation through likes, comments and being recognized online. If approval from others is almost attained, this individual may then have an inaccurate perception of himself/herself and form substandard self-esteem [42]. Too much exposure to idealized images and curated content can also impact their self-concept and unrealistic expectations of how they look, will be successful, and will fit in with society. Over the years, this need for external approval might contribute to a loss of self-confidence, and may even produce a psychological burden [43]. When all the literature was analyzed, the relationship between anxiety, depression, stress, emotional instability and low self-esteem with digital addiction was seen as strong, and digital addiction had a great effect on the health of young people [44].

### Digital Addiction and Lifestyle Outcomes

Important implications arise to many aspects of lifestyle, such as digital addiction, which is very prominent in adolescent and young adult population that is very immersed in digital technologies. Excessive screen time – such as spending too much time on the smart phone or social media, online games and streaming – can profoundly impact healthy daily habits and cause long-term physical, academic and behavioral harm. One of the most commonly reported side effects of digital addiction is sleep disturbances [45]. Staying in front of screens for extended periods, especially in the evenings, can mess up the body's internal clock and may result in a decrease in the levels of the sleep hormone melatonin and a late bedtime. Those who overdo digital activities suffer from sleeping less, poor quality sleep, frequent awakenings at night and irregular sleeping patterns. These sleep difficulties can then have a negative impact on cognitive abilities, concentration, emotional regulation and well-being as per shown in figure 6 [46].



**Figure 6 Screen Time Disrupts Sleep.**

People who are addicted to digital devices are also linked with physical inactivity and sedentary lifestyle. Increased time spent with digital devices can limit time spent engaging in physical activity, going outdoors and recreation sports. The decrease in physical activity levels can lead to a range of health issues such as obesity, musculoskeletal pain, cardiovascular conditions and diminished physical fitness [47]. Also, sitting for long periods of time when using a smartphone, computer or playing a video game has been associated with a variety of negative health effects. Too much screen time and not enough exercise can have a detrimental impact on physical and mental wellbeing, adding to young people's difficulties [48]. Another significant domain in the influence of digital addiction on academic performance is lifestyle. Academic performance is another significant domain that is influenced by digital addiction. Too much screen time may be taking up too much of time to study, to finish schoolwork and to do school activities [49]. The constant disturbances caused by notifications, social media interactions, and online entertainment can have a negative effect on concentration, attention span, and comprehension. Consequently, pupils may find their academic performance affected, grades may be lower than they would expect, pupils may lose motivation, and there may be problems dealing with educational tasks. Sometimes, the use of technology may also add to academic outcomes due to the fact that some users may fall into a habit of procrastination and poor time management skills [50]. Furthermore, digital addiction can have an impact on daily life and productivity. People who use the Internet too much may not have the ability to have a well-rounded schedule. Those who spend too much time on the Internet find it difficult to have a balanced time schedule and a healthy lifestyle as per shown in table 3 [51]. Tasks like preparing meals, doing household chores, cleaning up, personal care, socializing and leisure time can be ignored for digital distractions. With digital content at their fingertips and so many websites that can be addictive, it may be difficult to be efficient with time and complete daily tasks. These disturbances can over time negatively impact personal development, work-school success and life quality [52]. The results show that digital addiction has various dimensions of life including sleep quality, physical activity, sedentary lifestyle, academic performance and productivity. The findings emphasize the need for raising awareness, using technology responsibly, and implement interventions to promote healthy technology use among youth [53].

**Table 3 Lifestyle Consequences of Digital Addiction.**

<b>Domain</b>	<b>Impact of Digital Addiction</b>
<b>Sleep Quality [45,46]</b>	Sleep disruption, reduced sleep quality, irregular sleep patterns, and daytime cognitive difficulties.
<b>Physical Health [47,48]</b>	Increased sedentary behavior, reduced physical activity, obesity risk, musculoskeletal problems, and poorer physical fitness.
<b>Academic Performance [49,50]</b>	Reduced concentration, procrastination, poor time management, lower academic achievement, and decreased motivation.
<b>Daily Functioning &amp; Productivity [51,52]</b>	Difficulty managing daily tasks, neglect of responsibilities, reduced productivity, and impaired work–life balance.

**Recommendations**

- Parents should establish rules about how long they spend looking at screens and encourage their adolescent child to spend time away from screens.
- Digital literacy and responsible technology-use programs should be incorporated into the context of education in educational institutions.
- Healthcare providers need to regularly monitor for signs and symptoms of digital addiction, and offer psychological support at the appropriate time.
- Policymakers should create evidence-based guidelines and awareness campaigns for safe and healthy digital engagement of youth.
- Digital wellbeing should be integrated into the platforms and applications of technology companies, including features such as screen time monitoring and screen time reminders.

**CONCLUSION**

In the digital age, where communication, education, entertainment and social interaction have become more and more digitalized, digital addiction has become a major problem especially for teenagers and young adults who are more and more dependent on digital technologies. This review shows that while digital technologies can provide many positive outcomes, they can also have a negative impact when used in excessive and uncontrolled amounts on many aspects of youth well-being. It is found that digital addiction is related to poor mental health, such as anxiety, depression, stress, emotional instability, and low self-esteem in the literature. In addition, overuse of digital technology can lead to social isolation, loneliness, poor relationships with others and unhelpful social behaviours. Other lifestyle-related problems include sleep, physical inactivity, sedentary lifestyle, low academic performance, and lifestyle disturbances, all of which are further examples of the wide reaching effects of digital dependency on youth. Further research is needed on the emergence of new digital environments, the potential long-term effects, and interventions that ensure effectiveness.

Collaboration is key between the family, the educator, the healthcare provider, the policy-maker and the creator of the technology to build a healthier and more sustainable relationship between young people and digital technology.

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