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Tobacco Use and Digital Dependency in Adolescents: A School-Centered Framework for Prevention

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Abstract

This article explores the prevalence and contributing factors of addictive behaviors among adolescent students, focusing on tobacco use and screen addiction (e.g., mobile phones, social media, gaming). Through a review of international and Greek literature, individual, family, and school-related risk factors are identified, along with the critical role of school-based Health Education programs in prevention. Emphasis is placed on the need for early interventions that strengthen students' psychosocial resilience and promote healthy decision-making. The school is highlighted as a key environment for the development of life skills and the enhancement of protective factors. The article concludes with recommendations for integrating targeted prevention programs into school curricula to address the rising incidence of adolescent addiction.

Keywords: addictions, adolescents, students, digital addiction, tobacco use, risk behaviors, health education prevention, school-based interventions, psychosocial resilience, school environment, addictive behaviors.

1. Introduction

Adolescence is a life period marked by particular vulnerability, as cognitive and emotional functions are still developing and neurobiological self-regulation mechanisms have not yet fully matured (Aikaterini, 2023). In this context, the increased availability of digital means and near-unlimited access to the internet create an environment in which excessive usage behaviors are more likely to develop. At the same time, experimentation with smoking continues to appear in a segment of the adolescent population, amplifying the risk of adopting behaviors that may lead to long-term harmful habits (Diamantoula, 2016). The addiction, whether concerning internet use or tobacco consumption, is often accompanied by psychosocial difficulties. Empirical data suggest that excessive use of computers and mobile phones by adolescents can correlate with elevated levels of anxiety and depressive symptoms, as well as reduced concentration in school tasks (Panagoula, 2021). Regarding smoking, especially when initiated early, it is observed that social influences and identity-seeking play a decisive role in converting experimentation into regular use (Diamantoula, 2016).

The school environment can either offer protection through prevention strategies or become a place reinforcing harmful influences if adequate support is lacking. Diagnosing internet addiction in adolescents is typically done via standardized measurement tools, such as the Young Diagnostic Questionnaire (YDQ) or specially designed questionnaires, which assess criteria like inability to limit usage and neglect of other activities due to online engagement (Tsampa, 2018).

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Such instruments have significantly contributed to the scientific mapping of the phenomenon but require cultural adaptation to better reflect social norms of each population group. This is particularly important for Greek youth, where participation in so-called "internet cafés" remains relatively high (Aggelopoulos et al., 2008).

At younger ages, another risk factor appears: children and adolescents who show symptoms of attention deficit/hyperactivity disorder (ADHD) display greater susceptibility to pathological internet use. This often co-occurs with more severe symptoms of the ADHD itself, creating a vicious cycle in which excessive online engagement not only fails to alleviate difficulties of concentration but exacerbates them (Aikaterini, 2023). Thus, a dual burden emerges: existing cognitive dysregulation is magnified by a medium that could theoretically offer learning and communication opportunities.

However, the issue is not limited to individual behavior. The social dynamics among peers often encourage extreme digital engagement or experimental smoking as signs of acceptance by the group. In the case of smoking, it has been shown that school prevention programs engaging students as peer educators achieve greater effectiveness in changing attitudes and behaviors (Diamantoula, 2016). Similarly, collaborative educational models can be employed to inform students about the risks of excessive use of digital tools.

Digital technology, beyond everyday utility and inexhaustible informational potential, becomes dangerous when it is used without limits or awareness of psychological implications, especially for vulnerable groups like adolescents (Tsampa, 2018). Some usage forms involve high levels of social comparison or exposure to unsuitable content, which can intensify tendencies toward self-harm. This has been observed in extreme expressions of the phenomenon, where the purpose of internet use is directly tied to mental health issues. Likewise, in smoking, although the act is clearly linked to biological consequences, its initiation is often more motivated by cultural symbolism or social pressure than by a conscious choice to develop dependence (Diamantoula, 2016).

The 12–17 age group lies at the crossroads between childhood and adulthood, making it a critical point for preventive interventions. Studies have documented a close relationship between digital addiction and the onset of anxiety and depression in this age range, implying that strategic planning of educational actions must consider both learning needs and students ' psychological resilience. The literature supports that, without parental involvement and an active network among school personnel, any effort to curb these behaviors may yield limited results. Finally, it becomes clear that the two forms of addiction — to the internet / mobile phones and to smoking — though seemingly different in mechanism, converge in their impact on adolescents ' psychosocial development (Panagoula, 2021). A common element is the effect on learning capacity, an increase in stress, and a decline in overall well-being. These consequences are most likely to be addressed effectively when there is a multilevel approach: diagnosis via reliable tools, understanding of social risk factors, and implementation of personalized prevention programs within school communities (Aggelopoulos et al., 2008; Tsampa, 2018).

2. Theoretical background

2.1 *Definitions and conceptual approach of addiction*

Addiction can be viewed as a multidimensional concept incorporating psychological, biological, and social components. In its simplest form, it refers to a state in which a person shows repeated and persistent need to engage in a particular activity or consume a substance, despite negative consequences to personal, social, or occupational life (Papadaniil, 2017). Scientific approaches to the term extend beyond traditional substance addictions (like nicotine) to behavioral addictions such as internet and digital media addiction (Aikaterini, 2023). Some

models argue that the core of addiction is dysfunction in impulse-control mechanisms of the brain, with the prefrontal cortex playing a critical role in inhibiting inappropriate behaviors (Panagoula, 2021).

This dysfunction can result from long exposure to addictive substances or from habits that strongly reinforce reward circuits. The term "pathological" is often used to describe behaviors whose frequency and intensity exceed the bounds of what is considered normal or beneficial. In internet addiction research, inability to limit use is often accompanied by social exclusion and the neglect of other activities (Tsampa, 2018). The conceptual distinction between substance addiction and behavioral addiction is of scientific interest. In cases like nicotine, biochemical changes affect neurotransmission via specific receptors. In behavioral addictions the focus shifts more toward reinforcement learning and the development of habitual patterns that become automated (Aggelopoulos et al., 2008). Nevertheless, a common core remains: the strong connection between the act (either smoking or online navigation) and the feeling of pleasure or relief obtained.

Diagnosis of addiction typically requires detection of specific criteria, such as tolerance (needing increasing doses or duration), withdrawal symptoms when the behavior is interrupted, and loss of control in attempts to limit use (Papadaniil, 2017). In the case of internet use, indicators may manifest as psychosomatic signs like sleep disorders or anxiety when disconnected. There is also critical debate regarding the criteria: some researchers argue that existing diagnostic systems should take into account cultural variation in perceptions of "excessive" use (Panagoula, 2021). For example, a time spent online considered acceptable in one social context may be judged as problematic in another, which poses challenges for prevalence measurement and intervention design.

Comorbidity is common: many adolescents with internet addiction also present anxiety or depression (Aikaterini, 2023). Similarly, youth who begin smoking early may have concurrent self-regulation difficulties or engage in other high-risk behaviors. Thus, "addiction" acts as an umbrella concept covering a set of problems where multiple levels of health are involved: mood, motivation for daily activity, and social functionality. The functional impact becomes a central element in defining problematic behavior. An adolescent might not meet all diagnostic criteria yet suffer noticeable decline in school performance due to excessive social media use (Tsampa, 2018).

Finally, addiction is best viewed as a continuum. Beyond strict psychiatric definitions, there is a dynamic relationship among casual use, problematic use, and full dependence. Transition between these stages may be gradual and often goes unnoticed by the adolescent or family. This makes early detection difficult, yet essential to prevent habit consolidation. Some scholars propose three-factor models for understanding internet addiction: cognitive factors (expectancies of pleasure or relief), emotional factors (loneliness, anxiety), and social factors (peer pressure) (Panagoula, 2021). Likewise for smoking, both biological mechanisms and social norms contribute to the process. From a practical perspective, the conceptual approach must consider not only objective indicators but subjective experience.

2.2 *Historical evolution of addictive behaviors in adolescents*

The evolution of addictive behaviors among adolescents over past decades reflects not only changes in social norms but also technological progress. In the 1980s and early 1990s, smoking was among the most widespread high-risk behaviors in youth, due in part to its societal acceptance. Adolescents were exposed to strong influences from peers and family, while tobacco marketing was relatively unregulated (Diamantoula, 2016). Initiation often coincided with

identity exploration and the desire for social acceptance, increasing the chances of experimental use becoming habitual.

With the entry into the 21st century, while public health campaigns began reducing youth smoking prevalence, another addictive behavior emerged more prominently: pathological internet use. The spread of personal computers in households and the mass arrival of internet-connected mobile phones reshaped how adolescents communicated, entertained, and accessed information (Aikaterini, 2023). What was initially perceived positively — as opportunities for learning or social networking — was soon accompanied by concerns about excessive engagement. As early as the late 1990s, evidence suggested that prolonged digital exposure might yield psychological effects similar to other forms of addiction. Young's (1998) work attempted to describe user profiles showing inability to limit online activity despite negative consequences (Panagoula, 2021).

Over time, interventions against smoking began earlier (e.g., regulation on advertising and sales to minors), whereas digital addiction strategies lagged even as technology was already deeply integrated into adolescent life. This delay likely contributed to the rapid spread of problematic usage patterns. Technological advances after 2010 accelerated this shift: algorithmically tailored social media and apps created environments of continuous engagement. Adolescents spent hours daily producing and consuming digital content, often displacing other social or physical pursuits (Aikaterini, 2023).

Historically, there is a temporal coincidence: the decline in youth smoking (after regulatory policies) and the rise of digital addiction. In many countries, including Greece, anti-tobacco programs in schools began in the 2000s, while structured responses to internet overuse came later. This timing may have facilitated a shift in the direction of reward-seeking behaviors among youth.

Overall, addictive behaviors in adolescents have shifted from mostly chemical dependencies to more abstract but equally powerful forms of behavioral addiction. From cigarettes to smartphones, a shared element is the search for pleasure or relief through repetitive acts that sometimes sacrifice time for productive activities (Panagoula, 2021). The historical pattern shows that each generation is shaped by the technologies and social norms of its time, requiring continuous adaptation of prevention strategies to address new predominant addictive stimuli.

3. Smoking addiction in adolescents

3.1 *Epidemiology and statistics*

The epidemiology of smoking addiction among adolescents is dynamic, shaped by social, economic, and cultural changes. In many countries, experimentation rates may exceed 30% in school populations before completion of lower secondary. In Greece, particularly in earlier decades before stricter tobacco laws, access to cigarettes by minors was nearly uncontrolled (Diamantoula, 2016). Recently, prevalence has declined due to combined government policies and school–based prevention programs. Yet this decline is uneven across regions and socioeconomic strata: rural or semi-urban areas often show higher regular smoking rates than urban centers.

Gender patterns have shifted: while historically males dominated smoking prevalence, in newer cohorts the gender gap is shrinking. In European cross-country studies involving 15–16-year-olds, daily smoking rates vary from below 10% to over 25%, depending on national policy and enforcement. In Greece, prevalence is close to the European average, with regions maintaining high cultural acceptance of smoking. Statistical studies also point to the role of perceived prevalence among peers: adolescents believing that smoking is widespread among friends are

more likely to try or adopt the behavior. Overestimation of peer prevalence can itself be a reinforcing factor. Standard surveys assess frequency (daily vs occasional), age at first use, and family or school environment factors. Data indicate that first experimentation often occurs around ages 13–14, a period of strong social influence and identity development. From a public health view, key statistics include intensity and duration of use in youth. A notable portion of daily users' report consuming more than 5–10 cigarettes per day before adulthood, indicating early development of tolerance and a higher likelihood of long-term dependence (Diamantoula, 2016). Occasional users are often overlooked, but many evolve to more intense usage over years.

Secondary analyses reveal comorbidity with other high-risk behaviors, including excessive internet use. In some studies, adolescents with lower academic performance also show increased likelihood of smoking (Panagoula, 2021). This may relate to lower self-efficacy or less participation in school-based preventive initiatives. Policy measures indeed influence trends: after restrictions on tobacco advertising and sales to minors, many countries saw declines in youth smoking, though residual use persists especially where enforcement is lax or social norms remain permissive. In Greek communities, careful breakdowns show that even as averages decline, vulnerable subpopulations maintain high rates, underlining the need for targeted interventions. Without such granularity, broad strategies risk overlooking high-risk subgroups (Diamantoula, 2016).

3.2 *Risk factors and social influences*

Understanding risk factors for adolescent smoking addiction requires linking epidemiological data with social and individual dynamics. Age at first exposure is not merely a statistic but an entry point into a cascade of influences. Family environment plays a central role: in families with weak boundaries or limited emotional connection, adolescents are more likely to seek acceptance outside the home. When parents or older siblings smoke, they effectively model the behavior, even if verbally opposed.

Peer groups are perhaps the most potent influence in adolescence. Smoking may become a "badge of membership" in certain peer circles. Such normalization elevates adoption risk even among initially uninterested youth (Diamantoula, 2016). Psychologically, traits such as low self-esteem, increased anxiety, or depressive mood often co-occur with experimentation or regular use: smoking may be used as a temporary coping strategy (Panagoula, 2021).

In the school environment, norms matter: schools with a high proportion of smokers in upper grades show higher initiation risk in younger students. Social modeling within the same community is powerful, especially in absence of strong counter-narratives from educators.

Socioeconomic factors also matter: families with lower income or parental unemployment often struggle to provide organized preventive activities, and smoking may be more socially accepted. Cultural contexts where tobacco is not stigmatized pose additional challenges to change.

There is evidence that digital overuse and smoking can interact: excessive internet use is linked to increasing loneliness and anxiety (Panagoula, 2021), which might lead some adolescents to experiment with smoking as a form of emotional regulation. This interaction can form feedback loops: one behavior reinforcing the other. Weak parental monitoring increases the likelihood of both problematic digital use and smoking. Hence effective strategies must address a network of risk factors — from individual personality traits to broader cultural norms — rather than focusing on isolated causes. Collaboration among school, family, and community is essential to weaken negative social pressures and strengthen protective ones.

4. Internet and mobile addiction in adolescents

4.1 *Types of addictive behavior*

Classifying types of digital addiction in adolescents helps to understand underlying mechanisms and tailor interventions. One category is excessive gaming: adolescents spend long hours in multiplayer online games, where continuous progression may supplant real-life goals. This can lead to neglect of school obligations or social life, with emotional distress if disconnected (Tsampa, 2018). Another type is heavy use of social networking platforms, where constant checking for "likes" or comments triggers reward circuits, fostering the compulsion to repeatedly check notifications (Aikaterini, 2023). The phenomenon of continuous connectivity undermines attention and heightens anxiety. A third type is aimless web browsing, where adolescents drift among websites or media without defined purpose. Though seemingly less "harmful," the result is similar: disorganization, time loss, and detachment from offline responsibilities (Panagoula, 2021).

Excessive messaging or chat use is a related pattern: adolescents retain contact with virtual friends even while physically in company of others, reducing in-person interaction and deepening isolation. Another variant is excessive engagement with online commerce or shopping platforms. In older adolescents, motivations may include pleasure from purchasing or belonging to interest communities around certain products. Related to this is internet gambling or betting, combining behavioral and financial risk — though more prevalent in young adulthood, it can emerge in older teens. Some adolescents use the internet as a gateway to other addictive content (e.g., exposure to adult content or cybersexual behaviors). While content-wise distinct, the mechanism reinforces the bond between the platform and brain reward systems (Aggelopoulos et al., 2008).

A common feature across types is the sense that life off-screen is incomplete without digital engagement. This leads to structuring daily routines around online activity, often prioritizing it above real-world demands (Aikaterini, 2023).

In practice, many adolescents display poly-addictive patterns, combining elements — e.g., social media plus gaming plus browsing. This intersection increases not just usage intensity but also resilience against attempts to cut back (Tsampa, 2018). These complex users often present with higher risk of co-occurring psychological problems such as depression or social anxiety. Researchers debate whether all forms should be subsumed under the general label "internet addiction." Some propose multidimensional assessment tools, each targeting core types, so that interventions can map to the individual's specific usage profile (Aggelopoulos et al., 2008).

4.2 *Relationship with mental health disorders*

The association between digital addiction and mental health issues in adolescents is complex and multi-layered. Excessive use of digital media is correlated with increased likelihood of emotional difficulties — anxiety, depression, sleep disturbances — and in some cases may exacerbate existing psychiatric conditions.

One established link is between ADHD and pathological internet use. Adolescents with attention deficits or hyperactivity symptoms show higher susceptibility to compulsive gaming or social media use (Aikaterini, 2023). Such usage can further fragment attention and disrupt daily discipline, exacerbating ADHD symptoms — forming a vicious cycle where addiction and ADHD reinforce each other. Anxiety in adolescents with digital addiction can stem from fear of missing out (FOMO) or concerns about losing connections. This can fuel continuous checking of networks. Some also turn to the internet to escape real-life stressors, perpetuating dependence.

Depression often coexists with internet addiction. Youth with low mood may use online environments to avoid negative feelings (Tsampa, 2018). Though this can offer temporary relief, over time it deepens isolation and weakens real-life engagement. In one longitudinal study, internet addiction and depressive symptoms showed reciprocal influence over time (Junjie Zhang, 2024). Sleep disorders are among the most direct consequences. Nighttime exposure to screens impairs sleep quality and duration, which in turn reduces cognitive and emotional resilience (Aggelopoulos et al., 2008). Adolescents postponing sleep to continue digital activity often enter a pattern of chronic fatigue.

Moreover, social comparison on digital platforms — constant exposure to curated images of success, beauty, or relationships — can intensify feelings of inadequacy, particularly among already vulnerable adolescents (Panagoula, 2021). The digital environment also increases risk of cyberbullying, which independently contributes to depression and suicidal thoughts. From a neurobiological perspective, digital addiction and mental disorders may share functional circuits involving neurotransmitters like dopamine. Excessive rewards from online engagement can dysregulate these pathways, especially in adolescents still undergoing brain development. Some comparative studies have noted that the motivational drivers differ: nicotine dependence often hinges on habitual drive, while internet addiction may be more influenced by fear-driven use (e.g. anxiety, craving) (Chen et al. 2025). Overall, many of these associations are not incidental but reflect deeper shared mechanisms. Addictive digital use can act both as cause and consequence of mental health challenges, highlighting the need for early detection and integrative interventions.

5. Impact of addiction in the school setting

5.1 *Academic performance*

The influence of smoking and digital addiction on adolescents' academic performance is a complex interplay of direct and indirect factors. As discussed, excessive digital use correlates with anxiety, depressive mood, and impaired concentration (Panagoula, 2021). These traits directly undermine a student's ability to meet academic demands. Sleep disruption is a critical mediating factor: prolonged exposure to screens before bedtime undermines sleep quality, which impairs alertness and cognitive processing during classes (Aggelopoulos et al., 2008). Academic decline often begins subtly: missed deadlines, reduced class participation, and lagging study habits. Adolescents heavily using social networks or games have less time for study and struggle with time management (Tsampa, 2018). This is aggravated if they already face cognitive vulnerabilities such as ADHD (Aikaterini, 2023).

Regarding smoking, nicotine may temporarily heighten alertness, but long-term use associates with increased anxiety and mood instability, impairing sustained focus and engagement (Diamantoula, 2016). Socially, students who step out during breaks to smoke or check their phones lose opportunities for collaborative learning and interaction, undermining their connection with classmates. Empirical studies show that these disruptions lead to declining grades over time. A student who stays up late gaming may miss class content the next day, they might get distracted in class, checking notifications, and thus fall behind in cumulative knowledge. At the same time, reduced sense of belonging and decreased cooperation with peers can further depress academic outcomes.

To counter this, school programs combining awareness, experiential learning, and skill training (e.g. self-control, planning) have demonstrated effectiveness in helping students balance technology use with study demands (Diamantoula, 2016). In addition, encouraging physical activity within the school day helps counter sedentary habits and supports cognitive alertness. Parental role is also important: students whose parents set consistent limits on screen time or mobile use tend to perform better academically (Aikaterini, 2023). Where parents model

excessive digital or smoking behavior, negative patterns are more likely to be internalized. In combinations of heavy digital use plus regular smoking, the negative impact on academic performance is synergistic. Addressing one without the other yields limited results; an integrative approach is required.

5.2 *Social relations and discipline*

Addictive behaviors affect social relations and disciplinary climate within schools. Excessive mobile use in class or during school activities often signals disengagement from the group, leading to reduced participation in cooperative tasks and erosion of relational skills (Panagoula, 2021). In adolescence, social identity is cultivated through peer interaction; replacing face-to-face interaction with digital isolation fosters a "social void."

Smokers tend to form subgroups that retreat to hidden corners of the schoolyard. These closed circles may provide belonging to new members but effectively segregate them from the broader student body (Diamantoula, 2016). In the digital realm, cliques based on online interests can marginalize students who don't share those interests. Disciplinary issues arise when addictive behaviors violate school rules. Frequent mobile use during lessons may incur warnings or penalties, which undermines teacher–student trust. In the case of smoking, punishments are often administrative and symbolic, lacking preventive emphasis (Aggelopoulos et al., 2008). Students may perceive rules as obstacles to their addictive impulses, leading them to hide behavior or act covertly (Aikaterini, 2023). Moreover, when high-status students repeatedly flout rules without serious consequences, others may imitate their behavior (Panagoula, 2021). This modeling effect undermines the normative culture. The unhappy consequence is erosion of school cohesion, trust in authority, and a permissive climate toward rule violations.

Cyberbullying, facilitated by uncontrolled digital use, often spills from online to physical contexts, creating tension and conflict in schools (Tsampa, 2018). Victims withdraw from participation, reducing their engagement in the school community. Hence, the role of the educational staff is crucial. A purely punitive approach is often counterproductive; better results emerge when punishment is coupled with supportive counseling, peer mediation, and opportunities for the student to reflect and change (Aggelopoulos et al., 2008). Peer mentoring programs, where older students model healthy behavior, can reshape group norms and reduce pressure toward addictive practices (Diamantoula, 2016). Ultimately, social relations can also be protective: friend groups committed to moderating digital use or avoiding smoking provide mutual control and encouragement (Panagoula, 2021). Interventions should thus aim to embed healthy norms within peer culture rather than impose them top-down.

6. Role of the school in prevention and reduction of addiction

6.1 *Health education programs*

Health education programs in schools are organized and systematic efforts to improve knowledge, attitudes, and behaviors related to well-being. Within schools, these programs acquire special importance in countering addiction to smoking or digital technology. An effective program combines not only informational content, but also resistance skills, curiosity management, and avoidance of peer pressure.

Rather than lectures, successful programs use experiential methods: group discussions, role-playing, scenario simulations where students make decisions with full awareness of consequences. Engaging students as active participants — even peer educators — strengthens behavior change (Diamantoula, 2016). When messages come from similar-aged peers, resistance to them lessens and acceptance increases. Enhancing self-esteem is another key objective:

students who recognize their own value are more likely to resist addictive habits. Activities that foster success in non-addictive domains (sports, arts) help build that positive identity.

Developing coping skills is central. Teaching simple anxiety management techniques (e.g. breathing, mindfulness, movement) can provide alternative outlets to nicotine or digital overuse (Panagoula, 2021). Communication training enables students to assert refusal when faced with peer pressure. Success depends also on school–family collaboration. When parents are informed, they can support consistent limits at home (Aikaterini, 2023). For example, the family might enforce screen-time limits or schedule non-digital group activities. Teachers must also be trained to serve as health models: a prevention message loses impact if educators themselves ignore it.

School policies matter: smoke-free zones, bans on mobile use in classrooms, and designated tech-free periods send strong signals (Aggelopoulos et al., 2008). But rules must be paired with supportive options: if a student loses their "escape" (e.g. digital engagement), alternative opportunities must exist within the school. A possible model is a themed week: one day devoted to peer pressure, next to screen-time management, then to health impacts of smoking, then to community engagement. Tying knowledge to lived experience helps embed prevention in daily thought. Program evaluation is crucial: pre- and post- intervention surveys measure shifts in attitudes and behaviors, while observation can track actual practice (Tsampa, 2018). If some methods (e.g. role-play) outperform lectures, they should be emphasized. In Greek applications, combining information and practice has reduced initiation rates of smoking over monitoring periods (Diamantoula, 2016).

Similarly, raising awareness about psychological effects of excessive digital use helps students self-detect early problem signs (Panagoula, 2021). Thus, health education programs serve both as prevention and early intervention. Their impact multiplies when the school community treats them not as obligatory lessons but as quality-of-life opportunities, building a collective culture of healthier choices.

6.2 *Collaboration with parents and community*

Effective prevention of addiction in adolescents requires a synergy between the school, family, and community. The school's interventions (from section 6.1) gain greater reach when supported by parents who understand risks and strategies (Aikaterini, 2023). Parents are not passive receivers but active parts of a shared effort. Through regular school–parent communication (meetings, workshops), scientific data on addiction can be paired with discussion of home life. Parents might notice their children spending excessive hours online or sneaking out to smoke; such observations allow the school to tailor support. The community can offer alternative spaces and activities (sports clubs, cultural centers) that reduce adolescents 'free time in risk zones (Aggelopoulos et al., 2008). For example, collaboration between school and local sports clubs to provide free training opens healthy social options.

Coordination is essential: forming working groups with teachers, parents, and community representatives encourages discussion of cases, pooling ideas, and organizing preventive events. Parents can contribute their skills (e.g. a parent who is an IT professional might share safe-use tips). Community institutions (public health departments, local NGOs) may offer counseling services for students with signs of addiction (Tsampa, 2018). Public campaigns on smoking can reinforce school messages. In small towns or villages, where people know one another, social stigma around youth smoking can be a deterrent; in larger cities where anonymity prevails, more structured campaigns may be needed (Panagoula, 2021). Digital norms are similar: in highly technologized communities, messages should frame balanced use rather than prohibition. A collaborative weekly schedule might include: expert talks on tobacco risks,

workshops on healthy mobile use, a communal sports day, and a parent–teacher evening to share experiences. Students 'participation in these events increases both knowledge and social connection.

Importantly, the culture of the community shapes success: in places where public disapproval of youth smoking exists, prevention has a stronger effect; in tech-oriented areas, digital overuse is normalized, requiring more sensitivity in messaging (Aggelopoulos et al., 2008). Finally, collaboration demands continuous feedback: after a school event, parents may receive handouts with usage rules and alternative activity ideas (Aikaterini, 2023). This transforms theory into daily practice at home. The goal is a multi-level strategy: the school provides structure and knowledge; the family enacts it in daily life; the community offers alternative positive engagement. When all parts align, adolescents can develop self-regulation skills that protect not only during their school years but into adulthood.

7. Suggested educational strategies

To address smoking addiction and excessive technology use in adolescents, educational strategies must combine scientific grounding, pedagogical design, and sociocultural sensitivity. One highly effective approach is the theory–experiential combination: students should receive both factual knowledge and opportunities to reflect on their own habits via role-play, group discussions, or case scenarios (Diamantoula, 2016). Such methods foster refusal skills under peer pressure and build confidence in personal choices. Incorporating time-management and "digital nutrition" strategies into school curricula helps students distribute their study, physical, and screen time rationally (Panagoula, 2021). For instance, limiting screen exposure in the evening combats sleep disruption (Aggelopoulos et al., 2008).

Linking health messages to motivational incentives (e.g., athletic performance, well-being) tends to resonate more with adolescents. Schools can collaborate with health professionals to demonstrate immediate effects of nicotine on lung capacity, for example (Diamantoula, 2016). Peer-led approaches are potent: selecting and training student leaders to convey prevention messages reduces resistance and embeds change within the peer network (Aikaterini, 2023). This model lessens rejection to messages coming only from authority figures. Within the school, establishing clear policies for mobile use and no-smoking zones is essential — but should be accompanied by support for students struggling to comply (counseling, small group reflection) rather than purely punitive measures (Aggelopoulos et al., 2008).

Equipping teachers through professional development to detect early signs of addiction and engage in supportive conversations is key (Tsampa, 2018). Training in communication techniques helps them address resistance and guide students sensitively. Using technology deliberately is another modern tactic: apps that monitor screen time, present usage statistics, or send gentle alerts can support self-regulation, rather than just surveillance (Aikaterini, 2023). Dashboards showing patterns may prompt self-reflection and reduction. One successful model is a quarterly health curriculum combining weekly experiential classes, expert sessions, and family involvement (e.g. "evenings without phones"). Studies show reductions of up to 25% in daily digital use among participating students over several months (Panagoula, 2021).

Lastly, customization to sociocultural context matters. In highly digital communities, messages should avoid sounding prohibitive, and instead focus on balanced, mindful use. In areas where smoking retains social acceptance, there should be emphasis on long-term health consequences with real-life examples (Diamantoula, 2016). These strategies treat adolescents not as passive recipients of rules but as active partners in shaping healthier lifestyles.

8. Conclusion

The examination of addictive behaviors — digital (internet, mobile) and tobacco smoking — in adolescents underlines the necessity of a holistic approach that incorporates multiple dimensions. Adolescence is a phase of heightened vulnerability, and interventions must integrate both biological and psychosocial perspectives. Excessive use of digital devices and tobacco affects not only individual health but also academic success, social relationships, and school climate. Effective responses rest on multilevel strategies: educational programs, close collaboration among school, family, and community, and the activation of adolescents as agents of change. Knowledge of risks must be paired with practical skills — time management, peer resistance, self-regulation. Simultaneously, schools should foster positive role models and enrich alternative non-addictive activities. Engagement of parents and community ensures continuity of preventive messages beyond school walls. Teacher training and use of supportive technology further enable early detection and intervention. Crucially, strategies must be adapted to the sociocultural setting of each community to maximize relevance and effect. Empowering adolescents with insight, skills, and support can guide them toward a healthier, balanced life and reduce the long-term burden of addictive tendencies as they transition to adulthood.

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