



Smartphone Addiction Among Undergraduate Students: Roles of Coping Skills, Psychological Resilience, and Personality Traits - A Narrative Review

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ABSTRACT

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Smartphone addiction has become an increasing behavioural issue in undergraduate students with serious consequences for mental health, academic performance, sleep quality and social relationships. Excessive and uncontrolled smartphone use has been linked to psychological distress such as anxiety, depression, stress and impaired self-regulation. This narrative review summarizes the current literature related to the correlations of smartphone addiction, coping skills, psychological resilience, and personality characteristics among undergraduate students. Evidence has been consistent that maladaptive coping strategies such as avoidance and emotional disengagement is positively related to problematic smartphone use whereas adaptive coping mechanisms have a protective role. Psychological resilience plays a vital role as a buffer against the negative mental health impacts of smartphone addiction and being less likely to become addicted to them. Personality traits, specifically, high neuroticism and low conscientiousness have been shown to be significant predictors of smartphone addiction, and they affect both the patterns of use and susceptibility to psychological distress. Collectively, the reviewed studies point to smartphone addiction as a multifactorial phenomenon that is influenced by an individual's psychological characteristics. Understanding the interplay of coping styles, resilience, and personality traits is critical to developing successful prevention and treatment strategies that target the promotion of healthier digital behaviors in undergraduate students.

1. INTRODUCTION

The rapid growth of smartphone technology has revolutionized how people communicate, learn and interact with each other, especially for college students. While smartphones are clearly advantageous to their users in terms of both academic and social benefits, the amount and unrestricted usage of these devices has led to an increasing behavioral issue, which is commonly known as smartphone addiction or problematic smartphone use. This condition is characterized by compulsive usage patterns, impaired self-control, withdrawal symptoms

and continued use despite negative consequences, which are similar to behavioral addictions (Kwon et al., 2013; Elhai et al., 2017).

Undergraduate students are a particularly vulnerable population because of academic pressure, life stress involved in transitioning to adulthood, newfound autonomy, and heavy reliance, for both education and non-academic purposes, on smartphones. Previous research has shown high rates of smartphone addiction among adolescents and young adults, with research from India showing a prevalence rate ranging from 39% to 44% (Davey &

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Davey, 2014; Sharma et al., 2020). Excessive smartphone use in this group has been linked to negative outcomes, including sleeping problems, anxiety, depression, stress, lower academic performance, and even impaired interpersonal relationships (Soni et al, 2017; Sarhan, 2024).

Emerging evidence suggests that smartphone addiction is more than a consequence of exposure to technology, but is highly influenced by individual psychological characteristics. Coping skills are a measure that shows how students are able to handle academic and emotional stressors, with maladaptive coping mechanisms such as avoidance and emotional disengagement making students at risk of problematic smartphone use (Lu et al., 2021; Lei et al., 2018). Psychological resilience, which is defined as the ability to adapt positively to stress and adversity, has been found to be one of the protective elements against the negative mental health consequences of smartphone addiction (Wu et al., 2020; Hao et al., 2023). Additionally, personality traits (especially high levels of neuroticism and low levels of conscientiousness) have been reliably linked with greater vulnerability to smartphone addiction (Marengo et al., 2020; Arpacı & Kocadag Unver, 2020). Although a great deal of research has focused on studying these factors separately, an understanding of how coping skills, resilience and personality traits interact in the context of smartphone addiction in undergraduate students is still very much a necessity. This narrative review seeks to aggregate the available evidence on these interrelated psychological determinants of smartphone addiction to offer a comprehensive perspective on smartphone addiction in undergraduate populations.

2. SMARTPHONE ADDICTION IN UNDERGRADUATES

Smartphone addiction has become increasingly recognized as another form of behavioral addiction involving excessive, compulsive smartphone use with accompanying loss of control, withdrawal symptoms and functional impairment in daily life (Kwon et al., 2013; Elhai et al., 2017). Among undergraduate students, smartphones have a variety of functions, such as academic learning, social networking, entertainment, and emotional regulation, which opens the door to overuse and dependency. The ubiquitous availability and multifunctionality of smartphones has blurred lines to distinguish between necessary and problematic use, and addiction is harder to identify and manage (Davey & Davey, 2014).

Several studies have recorded a high rate of smartphone addiction among undergraduate and

medical students in various countries. Indian studies have reported significant levels of problematic smartphone use, with prevalence estimates ranging between 39% to 44% which brings out the magnitude of the problem in young adult populations (Davey & Davey, 2014; Sharma et al., 2020). Similar results have been reported at the international level especially in medical and nursing students, who face high academic demands and stress levels (Liu et al., 2022; Sarhan, 2024). Excessive smartphone use in these groups has been associated with poor academic performance, lack of concentration, procrastination and lower learning efficiency (Periginji et al., 2025).

The psychological effects of smartphones addiction are well documented. The problematic use of smartphones has been linked to higher levels of anxiety, depression, stress and emotional dysregulation (Soni et al., 2017; Alhassan et al., 2018; Abuhamdah & Naser, 2023). Students with advanced levels of addiction often report using smart phones as a way to escape negative emotions such as loneliness, hopelessness and academic stress, reinforcing maladaptive usage patterns (Gao et al., 2016; Elhai et al., 2017). Furthermore, excessive use of smartphones has been found to have a negative impact on the quality of sleep, leading to insomnia, delayed sleep onset and daytime fatigue, which in turn further contributes to psychological distress and academic difficulties (Dworak et al., 2007; Higuchi et al., 2005; Xie et al., 2023).

Beyond the individual mental health outcomes, the addiction to smartphones extends to social functioning and interpersonal relationships. Increased dependency on virtual communication may lead to reduced face-to-face interaction and social isolation and result in poor social skills (Kuss & Griffiths, 2011). During times of increased stress, like the Covid-19 pandemic, smartphone addiction has been found to grow and heighten the psychological vulnerability of students (Shang et al., 2024). These results suggest that smartphone addiction in undergraduate students is a multidimensional problem with psychological, academic, and social implications.

Given the complexity of smartphone addiction and its wide-ranging effects, knowledge about the psychological determinants, especially coping skills, resilience, and personality characteristics, is of the utmost importance (Vardhan et al., 2022). These factors are not only important in determining susceptibility to addiction but also help to determine how students respond to stress and regulate their use of smartphones; thus, are the basis for targeted preventive and therapeutic interventions.

3. DEALING WITH COPING SKILLS AND SMARTPHONE ADDICTION

Coping skills play a central role in whether and how undergraduate students will cope with the challenges of academic demands, emotional stress, and daily challenges, and they have a significant impact on vulnerability to smartphone addiction (Periginji et al., 2025). Coping strategies can be broadly classified into adaptive (positive) and maladaptive (negative) coping strategies. Adaptive coping involves problem-solving, seeking social support, and emotional regulation while maladaptive coping involves avoidance, denial, emotional disengagement, and reliance on distraction-based behaviors such as excessive use of smartphones (Lei et al. 2018).

A growing number of evidence suggests a strong link between maladaptive coping styles and problematic smartphone use among students. Meta-analytic results have shown a moderate positive correlation between smartphone addiction and negative coping strategies, whereas adaptive coping has a protective effect on addictive behaviors (Lu et al., 2021; Lei et al., 2018). Students who use avoidance or emotion-focused coping are more likely to use smartphones as a way to escape from academic pressure, interpersonal challenges and negative emotional states, reinforcing their compulsive usage patterns (Li et al., 2024).

On the other hand, adaptive coping strategies are linked to lower levels of smartphone addiction. Problem-focused coping, e.g., active problem-solving, social support, etc., helps students effectively cope with stress without involving excessive smartphone use (Ma et al., 2022). Evidence from studies conducted among Chinese undergraduate populations suggests that students who use positive coping strategies report less psychological distress as well as lower reliance on smartphones (Wi et al, 2020; Zhao et al., 2021). These findings suggest that coping style is not only significant for the risk of addiction, but also mediates the link between stress and resilience and mental health outcomes.

Coping skills have also been found to be mediators between psychological resilience and smartphone addiction. Research indicates that people with better resilience may be more inclined to engage in adaptive coping strategies that will mitigate susceptibility to smartphone addiction and subsequent mental health issues (Ma et al., 2022; Li et al., 2021). In contrast, students with weak coping skills are more likely to suffer from excess stress, anxiety and depression and so use smartphones as an unhealthy coping mechanism. The literature

highlights the importance of coping skills as a key psychological factor that determines addiction to smartphones in undergraduate students. Interventions aiming to reduce problematic smartphone use should therefore focus on the building of adaptive coping strategies in order to improve stress management and emotional regulation (Pulletikurthi et al., 2025).

4. PSYCHOLOGICAL RESILIENCE AND SMARTPHONE ADDICTION

Psychological resilience defined as ability to positively adapt to stress and adversity has been found to be a key protective factor for smartphone addiction behavior in undergraduate students. Resilient individuals are more likely to have the ability to control their emotions psychologically, and have a stable psychological capacity, to manage their stress levels without resorting to maladaptive means such as excessive smartphone use (Wu et al., 2020). In contrast, students with lower levels of resilience are more susceptible to problematic use of a smartphone, especially when they are under the stress of academia, emotional stress, and social difficulties.

There has been empirical evidence to prove that there is an inverse relationship between resilience and smartphone addiction. Studies among undergraduate and medical students suggest that lower levels of resilience are linked to higher levels of smartphone addiction, sleeping problems, anxiety and symptoms of depression (Hao et al., 2023; Li, 2024). Smartphone addiction has also been found to mediate the link between resilience and negative psychological outcomes, implying that low resilience is indirectly involved in psychological distress through greater dependence on smartphones (Hu et al., 2024; Xie et al., 2023).

Resilience also has a mediating and moderating effect on the relationship between psychological factors and smartphone addiction. Research has established that resilience mediates the link between interpersonal, emotional variables, such as self-differentiation and triangulation, and smartphone addiction, indicating its role in the regulation of behavior control (Kursuncu, 2024). Additionally, resilience also moderates the influence of smartphone addiction on sleep quality and well-being, with more resilient students being affected to a lesser extent by their high smartphone use in terms of negative consequences (Xie et al., 2023).

Gender differences have also been found in the association between resilience and smartphone addiction. Studies suggest that the relation between low resilience, smartphone addiction, and sleep

disturbance may be greater among male students than females, indicating the role of demographic factors in outcome variables related to resilience (Hu et al., 2024). Furthermore, resilience has been identified as buffering factor in periods of increased stress such as the Covid-19 pandemic, so that the negative mental health impact of excessive smartphone use among college students is reduced (Shang et al., 2024).

Psychological resilience is identified in the literature as a key factor in countering the effects of smartphone addiction and its psychological ramifications. Enhancing resilience by specific interventions may therefore play an important role in fostering a healthier smart phone use and supporting a better mental well-being of students at the undergraduate level.

Table 1. Key Psychological Correlates of Smartphone Addiction Among Undergraduate Students

Psychological factor	Direction of association with smartphone addiction	Key findings	References
Maladaptive coping styles	Positive	Increased reliance on smartphones for emotional escape and stress relief	Lu et al., 2021; Lei et al., 2018
Adaptive coping styles	Negative	Protective effect against problematic smartphone use	Ma et al., 2022; Wu et al., 2020
Low psychological resilience	Positive	Greater vulnerability to addiction and mental health problems	Hao et al., 2023; Li, 2024
High psychological resilience	Negative	Buffers stress, sleep disturbance, and addiction severity	Xie et al., 2023; Hu et al., 2024
Neuroticism	Positive	Emotional instability increases compulsive smartphone use	Marengo et al., 2020; Arpaci & Kocadag Unver, 2020
Conscientiousness	Negative	Better impulse control and self-regulation	Akbari et al., 2021; Marengo et al., 2020

5. PERSONALITY TRAITS AND SMARTPHONE ADDICTION

It is important to note that personality traits contribute to the development of individual susceptibility to smartphone addiction through their behavioral effects, emotional control, and reaction to stress. There is a great deal of research using the Five-Factor Model of personality, which includes neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness, to study the issue of behavioral addictions, including problematic smartphone use (Andreassen et al., 2013).

Out of these qualities, it has always been neuroticism which is the best positive determinant of smartphone addiction. Neurotic people are emotional instables, stressed reactivity, and negatively affected, which makes them utilize smartphones as a source of emotional regulation and avoidance (Marengo et al., 2020). The meta-analytic findings prove the strong correlation between neuroticism and smartphone use disorder, which implies that emotionally vulnerable people are highly prone to compulsive smartphone habits (Marengo et al., 2020; Liu et al., 2023). Conversely, conscientiousness seems to be a safeguarding characteristic. Highly conscientious students are more self-disciplined with increased

impulse control and goal orientation, which diminish the chances of overuse of smartphones (Akbari et al., 2021). The decreasing conscientiousness has been linked to weak self-regulation and overreliance on smartphones especially in academically challenging environments (Arpaci and Kocadag Unver, 2020).

The contribution of extraversion to smartphone addiction is more complex. Although extraverted individuals may use smartphones a lot in social communication and networking, this does not necessarily make them addicted to the usage. Introverts, on the other hand, might use their smartphone more effectively in terms of processes, including gaming and browsing, which have been found to be more closely related to the risk of addiction (Rahim et al., 2020). The positive relationships between agreeableness and openness to experience and smartphone addiction have been avoided by a negative or weak correlation, indicating that cooperative and flexible individuals might be less susceptible to maladaptive patterns of smartphone use (Marengo et al., 2020).

The way in which personality traits and smartphone addiction are associated is additionally moderated by gender differences. Studies have also found out that neuroticism is a stronger predictor of

smartphone addiction in female students, but conscientiousness is a stronger protective factor in the same student group (Arpaci and Kocadag Unver, 2020). These findings have also been reinforced by recent developments in the area of digital phenotyping, which show that smartphone behavior patterns can be a reliable predictor of personality traits, especially extraversion and neuroticism, which confirmed the correlation between personality and

smartphone behavior (Elhai et al., 2023). The evidence indicates that personality factors play a significant role in predisposing students to smartphone addiction, who are undergraduate students. These individual differences should be learnt so that special, personality-specific interventions could be created to minimize problematic smartphone use and encourage more healthy digital habits.

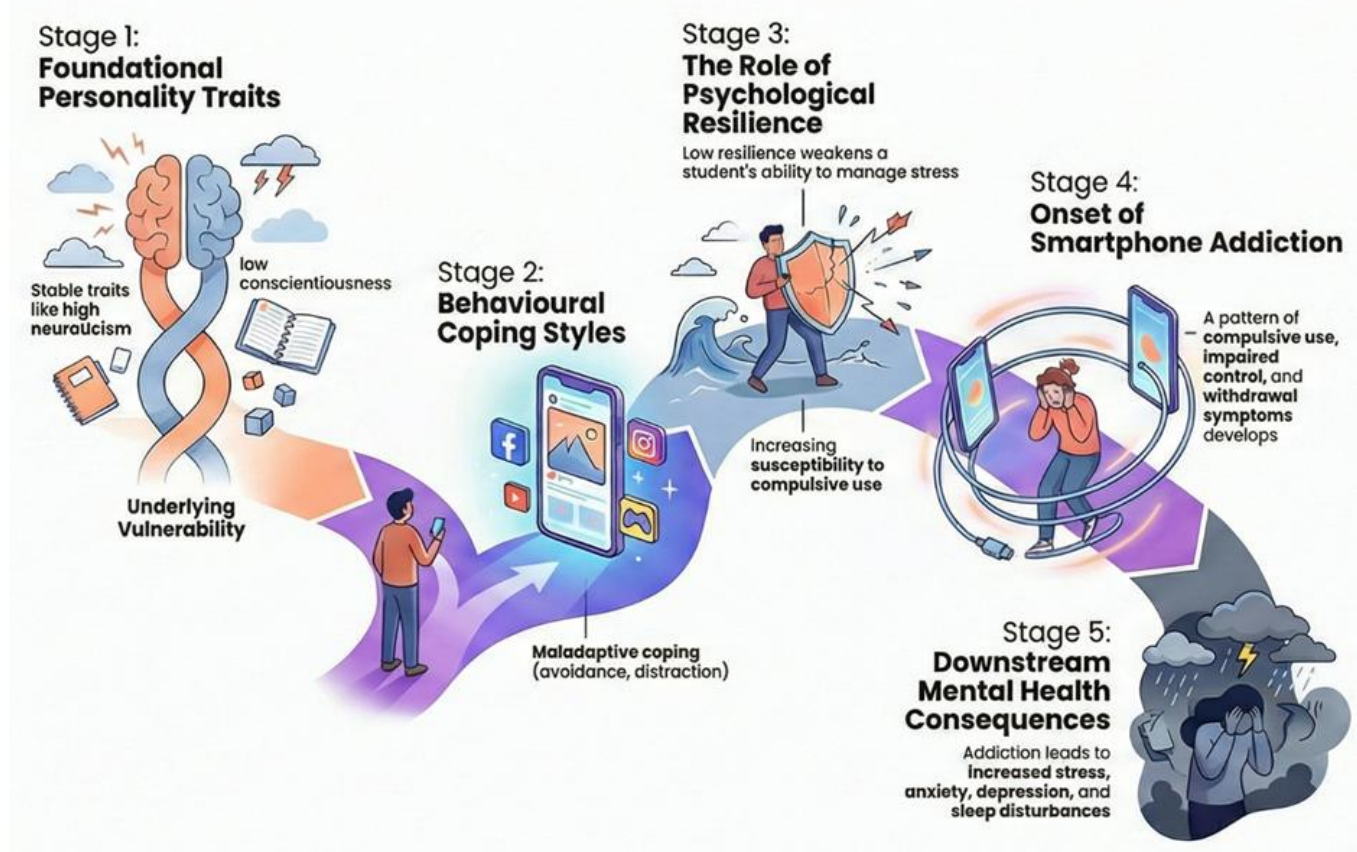


Figure 1. Conceptual Model of Smartphone Addiction Among Undergraduate Students

Table 2. Commonly Used Assessment Tools in Smartphone Addiction Research

Domain assessed	Instrument	Key features	References
Smartphone addiction	Smartphone Addiction Scale (SAS)	Measures withdrawal, tolerance, daily life disturbance	Kwon et al., 2013
Smartphone addiction	Mobile Phone Use Screening Test (MUST)	Validated in Indian population	Sharma et al., 2020
Coping styles	Brief COPE / Coping Style Questionnaire	Differentiates adaptive and maladaptive coping	Lu et al., 2021
Psychological resilience	Connor–Davidson Resilience Scale (CD-RISC)	Assesses stress adaptability	Wu et al., 2020
Personality traits	Big Five Inventory (BFI / NEO-FFI)	Measures neuroticism, conscientiousness, etc.	Andreassen et al., 2013



Figure 2. Protective and Risk Factors for Smartphone Addiction Among Undergraduate Students

6. CONCLUSION

Smartphone addiction among undergraduate students has become a major behavioral and mental health issue with serious implications on the psychological, academic, sleep, and social well-being. The facts considered in the article define the addiction to smartphones as a multifactorial process that is defined by personal psychological features and not through the exposure to technology alone. The coping skills, psychological resilience, and personality traits are critical in establishing the vulnerability of students to the problematic smartphone use and capability to handle the stressors associated with it. Maladaptive coping, specifically avoidance and emotional disengagement, are always found to make one more vulnerable to smartphone addiction, and the adaptive coping styles serve as a protective factor. Psychological resilience is an important buffer and it can alleviate the negative mental health consequences associated with heavy use of smartphones and decrease dependency on smartphones as a coping strategy. Personality factors also contribute to the risk of addiction, and high neuroticism and low conscientiousness have been repeatedly linked to increased vulnerability towards compulsive use of smartphones. A combination of knowledge of these psychological factors will be useful in treating smartphone addiction among undergraduate students. The use of adaptive coping skills, resilience,

and personality-sensitive interventions can help to make digital lives healthier and improve mental health. The strategies based on the psychological knowledge are especially applicable in the academic environment, where it is possible to effectively reduce the development of smartphone addiction among students by detecting it at an early stage and providing appropriate support. providing appropriate support.

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