



Empathy and Social Media Addiction: How Personality Traits Modify the Effect on High School Students' Personalities

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Abstract

Social media addiction is an emerging concern, especially among high school students, as it influences various aspects of their lives, including mental health, academic performance, and social relationships. This study explores the impact of social media addiction on students' personalities and investigates the moderating role of empathy and personality traits, such as extraversion, openness, conscientiousness, agreeableness, and neuroticism. Using a sample of 500 high school students, the study analyzes the relationship between empathy, social media addiction, and changes in personality traits. Results suggest that empathy acts as a buffer, reducing the negative effects of social media addiction. Furthermore, different personality traits were found to modify this relationship, with neuroticism exacerbating the negative consequences while traits like agreeableness and conscientiousness appear to mitigate the impact. These findings highlight the importance of tailored interventions to help high school students manage social media use effectively.

Keywords: Empathy; Social media Addiction; Personality traits; High school students; Extraversion; Neuroticism; Agreeableness; Conscientiousness; Adolescents

Introduction

Social media has become an integral part of everyday life, particularly for adolescents, who use platforms like Instagram, TikTok, and Snapchat to connect, communicate, and express themselves. However, excessive social media use can lead to addiction, characterized by compulsive behavior, mood modification, and neglect of personal, academic, or social responsibilities. Social media addiction can alter personality traits and affect emotional well-being, self-esteem, and academic performance, posing significant concerns for parents, educators, and policymakers. Empathy, the ability to understand and share the feelings of others, plays a critical role in social interactions and emotional regulation [1]. It may moderate the negative effects of social media addiction by influencing how individuals relate to online content and their peers. Likewise, personality traits, including extraversion, openness to experience, conscientiousness, agreeableness, and neuroticism, may also modify how adolescents react to social media addiction. This study aims to examine the effects of social media addiction on high school students' personalities and explore how empathy and specific personality traits moderate this relationship [2]. Understanding these dynamics can provide insights into preventive and intervention strategies for reducing the detrimental impact of excessive social media use on adolescents. Adolescents' personalities can be shaped by various external influences, and social media is no exception. Studies have shown that personality traits such as neuroticism, extraversion, and conscientiousness are linked to both the frequency and nature of social media use [3]. Excessive use of social media has been found to influence adolescents' emotional stability, social behaviors, and self-perception, potentially leading to altered personality traits over time. However, these changes do not occur in isolation, as factors like empathy and individual personality traits play a crucial role in moderating the effects of social media on adolescent behavior. Empathy, the capacity to understand and share the emotions of others, is a key component of healthy emotional development and interpersonal relationships [4]. Empathy allows individuals to interpret social cues and engage in prosocial behavior, which can serve as a protective factor against the harmful effects of social media addiction.

Adolescents with higher levels of empathy may be better equipped to navigate the complexities of social media interactions, avoiding negative consequences such as cyberbullying, social comparison, and emotional distress. Additionally, personality traits based on the Big Five model – extraversion, openness to experience, agreeableness, conscientiousness, and neuroticism – may influence how adolescents use and respond to social media [5]. For example, extraverted adolescents may use social media to fulfil their social needs, while individuals high in neuroticism may engage in excessive use as a coping mechanism for stress and anxiety. Conversely, those high in conscientiousness and agreeableness may exhibit greater self-regulation and less likelihood of addiction. Given the complex interplay between empathy, personality traits, and social media addiction, this study aims to investigate how these factors interact to influence high school students' personalities. Specifically, the study will explore the extent to which empathy and personality traits moderate the impact of social media addiction on personality development in adolescents. Understanding these dynamics can provide insights into effective interventions for preventing and mitigating the negative effects of social media addiction in young people [6].

Literature review

Social media addiction: Social media addiction, defined as an uncontrollable urge to use social media despite negative consequences, has been extensively researched. It has been associated with mental health issues, such as depression, anxiety, and loneliness. Adolescents are particularly vulnerable, as their self-regulation and decision-

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making skills are still developing. Studies have shown that social media addiction can affect an individual's cognitive and emotional functioning, impacting their overall personality.

Empathy and adolescents: Empathy, a key emotional intelligence component, is crucial for healthy social relationships. It involves cognitive empathy (understanding others' feelings) and emotional empathy (feeling what others feel). Research suggests that individuals with higher empathy levels are less likely to engage in addictive behaviors. Adolescents with higher empathy may also experience less isolation and alienation, reducing the emotional drivers of social media addiction.

Personality traits and social media use: The Big Five personality traits—extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience—provide a framework for understanding individual differences in behavior. Studies suggest that extraverts are more likely to engage in social media due to their social nature, while individuals high in neuroticism are prone to addictive behaviors, including social media addiction, as a coping mechanism for stress. Conscientious individuals, on the other hand, are more likely to regulate their social media use effectively [7].

Methodology

Research design: A cross-sectional study design was adopted to examine the impact of social media addiction on personality traits among high school students, with a focus on the moderating effects of empathy and personality traits.

Sample: The study involved a random sample of 500 high school students aged between 14 and 18 years. Participants were recruited from three urban high schools in a large metropolitan area. Parental consent and student assent were obtained before data collection.

Instruments

Social media addiction scale (SMAS): A 15-item scale used to assess the degree of social media addiction, focusing on factors such as compulsion, mood modification, and neglect of responsibilities.

Big five inventory (BFI): A 44-item inventory assessing the five personality traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience.

Basic empathy scale (BES): A 20-item scale measuring cognitive and emotional empathy.

Data collection and analysis:

Data were collected through online surveys administered via a secure platform. Descriptive statistics were calculated to summarize the demographic characteristics and key variables. Pearson correlation coefficients were used to examine the relationships between social media addiction, personality traits, and empathy levels. Hierarchical regression analysis was conducted to assess the moderating effects of empathy and personality traits on the relationship between social media addiction and personality changes [8].

Results

Descriptive statistics: The sample consisted of 54% females and 46% males, with an average age of 16.5 years. The average social media use was 5.2 hours per day, with 28% of students exhibiting signs of social media addiction based on the SMAS scores.

Social media addiction and personality traits: Results indicated

a significant negative correlation between social media addiction and conscientiousness ($r = -0.45, p < 0.01$) and agreeableness ($r = -0.32, p < 0.01$). A positive correlation was found between social media addiction and neuroticism ($r = 0.47, p < 0.01$), suggesting that students with higher neuroticism scores were more prone to addictive behavior.

Moderating role of empathy: Empathy was found to moderate the relationship between social media addiction and personality changes. Students with higher levels of cognitive and emotional empathy showed reduced negative effects of social media addiction on conscientiousness and agreeableness ($p < 0.05$). High empathy levels also attenuated the impact of social media addiction on neuroticism.

Personality traits as moderators: Personality traits also played a moderating role. High levels of extraversion were associated with increased social media use, but not necessarily addiction. Neuroticism exacerbated the negative consequences of social media addiction, while agreeableness and conscientiousness were protective factors, mitigating the adverse effects on emotional regulation and interpersonal relationships [9].

Discussion

The findings support the notion that social media addiction is associated with changes in personality traits, particularly increased neuroticism and decreased conscientiousness and agreeableness. However, empathy emerged as a significant buffer, reducing the harmful effects of social media addiction on personality development. Personality traits further modified these effects, with neuroticism increasing vulnerability to addiction, while conscientiousness and agreeableness provided resilience. These results highlight the importance of fostering empathy and self-regulation skills among adolescents to reduce the impact of social media addiction. Schools and parents should consider implementing educational programs that promote emotional intelligence, empathy, and healthy social media habits. Adolescents with higher levels of cognitive and emotional empathy were found to experience fewer detrimental effects on conscientiousness and agreeableness, despite high levels of social media addiction. This suggests that empathy may serve as a protective factor, enabling individuals to better manage their online interactions and avoid some of the harmful consequences of excessive social media use [10]. Empathy may suffer the effects of social media addiction by fostering greater self-awareness and emotional regulation, which are essential for maintaining healthy relationships and avoiding addictive behaviors. Empathetic adolescents may be more likely to engage in meaningful, supportive interactions on social media, rather than engaging in negative behaviors such as cyberbullying, social comparison, or compulsive use driven by emotional distress. This finding highlights the importance of empathy training and emotional intelligence education as potential interventions to reduce social media addiction and its harmful effects on personality development. The study also found that personality traits play a significant role in modifying the effects of social media addiction on adolescents' personalities. In particular, neuroticism was associated with an increased vulnerability to the negative consequences of social media addiction, while agreeableness and conscientiousness were found to be protective factors. Adolescents high in neuroticism were more likely to engage in social media as a coping mechanism for stress, anxiety, and emotional instability, leading to addictive behaviors that exacerbated these negative emotional states. This finding is consistent with previous research suggesting that individuals high in neuroticism are more prone to behavioral addictions as a form of emotional regulation. The tendency to use social media as a way to manage negative emotions

may create a vicious cycle, where addiction further intensifies neurotic traits, leading to poorer emotional outcomes [11].

On the other hand, adolescents with higher levels of agreeableness and conscientiousness demonstrated greater resilience to the negative effects of social media addiction. These individuals are likely to exhibit better self-control, social skills, and a focus on maintaining positive relationships, which may reduce their susceptibility to addictive behaviors. Agreeableness, characterized by prosocial behaviors such as cooperation and kindness, likely contributes to healthier social media interactions, reducing the likelihood of addiction. Conscientious individuals, with their focus on discipline and responsibility, are better able to manage their social media use and prevent it from interfering with their daily lives. The findings of this study have several implications for developing interventions aimed at reducing social media addiction and its negative effects on adolescent personality development [12]. Given the moderating roles of empathy and personality traits, interventions should be tailored to individual differences. For instance, programs that enhance emotional intelligence and empathy could help adolescents navigate social media in healthier ways, reducing the likelihood of addiction. Likewise, interventions that promote self-regulation and time management skills could be particularly beneficial for individuals with low conscientiousness.

Moreover, adolescents high in neuroticism may benefit from targeted interventions that address underlying emotional distress, offering alternative coping strategies to social media use. Cognitive-behavioral therapy (CBT) and mindfulness practices could be effective in helping these individuals manage stress and anxiety without resorting to excessive social media use [13].

Conclusion

This study provides valuable insights into the complex relationship between social media addiction, empathy, and personality traits among high school students. Empathy acts as a protective factor, mitigating the negative effects of social media addiction on personality traits. In contrast, neuroticism increases the risk of negative outcomes. Tailored interventions targeting specific personality traits and promoting empathy could help reduce social media addiction and its detrimental effects on adolescent development. However, empathy and certain personality traits, such as agreeableness and conscientiousness, play a protective role, mitigating the adverse effects of social media addiction. These findings highlight the importance of developing tailored

interventions that promote emotional intelligence, empathy, and self-regulation to help adolescents manage their social media use and safeguard their personality development.

Acknowledgment

None

Conflict of Interest

None

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