



RESEARCH ARTICLE

Social media usage: Implications for empathy, passive aggressive behavior, and impulsiveness

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Abstract

This paper undertakes an examination of the intricate interplay between social media consumption and critical psychological attributes, specifically empathy, passive aggression, and impulsiveness while adopting a nuanced perspective on potential variations across age cohorts. The primary objectives of this research encompass a comprehensive exploration of the relationships between social media engagement and the aforementioned psychological traits, coupled with a comparative assessment of these connections within two distinct age groups: young adults (aged 18–30) and the elderly population (aged 40 and above). The research design employed a purposive sampling strategy to assemble a diverse cohort of 200 Indian citizens. The empirical findings of this study substantiate a discernible positive correlation between increased social media use and heightened levels of passive aggression, affirming the initial hypothesis. In contrast, the anticipated associations between social media usage, empathy, and impulsiveness are not supported by empirical evidence. It is notable that no significant variations in the influence of social media on empathy and impulsiveness emerged between the two age groups. Furthermore, the regression analysis confirms the outcomes of the correlation analysis, underscoring the limited effect of social media on empathy and impulsiveness. However, the analysis also underscores a positive link between social media engagement and passive aggression, particularly among young adults. This research underscores the necessity of considering age-related nuances when exploring the impact of social media on individual behavior, emphasizing the requirement for a more nuanced comprehension of how social media shapes our psychological well-being

Keywords: Psychological effects, Social media usage, Impulsiveness, Passive aggression, Empathy, Social isolation.

Introduction

Social media has become an integral part of modern society, transforming the way individuals communicate, share information, and connect with one another. To fully understand the rise of social media, it is essential to explore its definition and characteristics.

Social media can be defined as a digital technology that enables users to create, share, and exchange content in the form of text, images, videos, and audio through online platforms and applications. It provides individuals with the ability to interact with others, form virtual communities, and engage in social networking.

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One of the defining characteristics of social media is its user-generated content. Unlike traditional media, where content is predominantly created and disseminated by professional journalists and organizations, social media platforms empower users to become content creators themselves. This participatory nature of social media allows for greater diversity of perspectives and democratization of information sharing.

Furthermore, social media platforms facilitate real-time communication and instant feedback. Users can engage in conversations, comment on posts, and share their opinions, fostering a sense of engagement and interactivity. The interactive nature of social media distinguishes it from traditional media, which often operates as a one-way communication channel.

Additionally, social media platforms provide features such as likes, shares, retweets, and hashtags, enabling content to gain visibility and reach a broader audience. These features enhance the virality and spread of information, making social media a powerful tool for amplifying messages and sparking conversations on a global scale.

Evolution of Social Media Platforms

The evolution of social media platforms has been rapid and dynamic, driven by advancements in technology, changing

user preferences, and the emergence of new communication trends. Understanding the evolution of social media is crucial in comprehending its impact on society and its continuous growth.

The roots of social media can be traced back to the early days of the internet when platforms like bulletin board systems (BBS) and online forums provided spaces for users to interact and exchange information. However, it was the emergence of platforms like SixDegrees.com in the late 1990s that laid the foundation for modern social media. SixDegrees.com allowed users to create profiles and connect with others, pioneering the concept of online social networking.

In the early 2000s, the landscape of social media witnessed significant transformations with the launch of platforms like Friendster and MySpace. These platforms focused on connecting individuals and fostering virtual communities. However, it was the arrival of Facebook in 2004 that revolutionized the social media industry. Facebook introduced a user-friendly interface, privacy controls, and a robust network effect, quickly gaining popularity and attracting millions of users worldwide.

As the popularity of social media grew, new platforms emerged to cater to different forms of content sharing and communication. YouTube, founded in 2005, revolutionized video sharing and propelled the rise of vlogging and user-generated video content. Twitter, launched in 2006, introduced the concept of microblogging, enabling users to share short, real-time updates in 140 characters.

The advent of smartphones and mobile applications further accelerated the growth of social media. Platforms like Instagram, founded in 2010, focused on visual content, allowing users to share photos and videos with their followers. Snapchat, introduced in 2011, introduced ephemeral messaging, paving the way for temporary and self-deleting content.

More recently, platforms like TikTok and Clubhouse have captured the attention of users with their unique approaches to content creation and communication. TikTok, launched in 2016, revolutionized short-form video content, while Clubhouse, founded in 2020, introduced audio-based social networking.

Global Usage and Adoption Trends

The global usage and adoption of social media have witnessed exponential growth over the years, making it a ubiquitous presence in people's lives worldwide. Understanding the global trends in social media usage provides valuable insights into its impact on society and its influence on individuals' behaviors and interactions.

As of October 2021, more than 4.5 billion people, or approximately 58% of the world's population, were using social media (Pew Research). The widespread adoption of social media is evident across continents and countries, with varying degrees of usage and platform preferences.

In North America and Europe, social media has become deeply ingrained in the daily lives of individuals. Platforms like Facebook, Instagram, Twitter, and YouTube dominate the social media landscape, with a significant portion of the population actively engaging with these platforms for various purposes, including social networking, content consumption, and information sharing.

In contrast, Asian countries have emerged as leaders in social media usage, with platforms like WeChat, Weibo, Line, and KakaoTalk dominating the region. Countries like China, Indonesia, and India have witnessed a significant surge in social media adoption, driven by factors such as increasing internet penetration, the rise of affordable smartphones, and the cultural inclination towards social interaction and connectivity.

Social Media Usage in Different Demographic Group

Social media usage varies across demographic groups, influenced by factors such as age, gender, socioeconomic status, and cultural norms. Understanding how different demographics engage with social media provides valuable insights into the social dynamics and patterns of online behavior.

Age plays a significant role in social media usage, with younger generations being more active and engaged on social media platforms. Millennials, often referred to as digital natives, have grown up in the era of social media and are more likely to use multiple platforms for various purposes, including socializing, networking, and accessing news and entertainment. Generation Z, the cohort following millennials, exhibits similar trends, with a strong affinity for platforms like Instagram, TikTok, and Snapchat.

However, social media usage is not limited to younger demographics. Older generations, including Generation X and Baby Boomers, are also increasingly embracing social media as a means of staying connected with family and friends, accessing information, and participating in online communities. Platforms like Facebook have seen significant adoption among older demographics, highlighting the importance of social media in bridging generational gaps and fostering intergenerational communication.

Gender also influences social media usage patterns, with studies indicating that women tend to be more active on platforms like Facebook, Instagram, and Pinterest, while men are more engaged on platforms like Twitter and LinkedIn. These gender differences in social media usage reflect variations in communication styles, content preferences, and social networking behaviors. Socioeconomic factors also play a role in social media usage, with individuals from higher socioeconomic backgrounds often having greater access to technology and internet connectivity. However, social media has also become increasingly accessible and affordable, enabling a broader range of individuals from diverse socioeconomic backgrounds to engage with these platforms.

Cultural norms and societal values shape social media usage in different countries and communities. For instance, in some cultures, privacy concerns may limit the extent of personal information shared on social media, while in others, social media may serve as a platform for self-expression, activism, and community engagement.

By studying social media usage across different demographic groups, researchers can gain insights into the motivations, behaviors, and impacts of social media on individuals and societies. This understanding contributes to a comprehensive analysis of the multifaceted nature of social media and its evolving role in our lives.

Psychological Effects of Excessive Social Media Use

Loneliness and social isolation

As social creatures, humans have an inherent need for connection and belonging.

However, excessive social media use can paradoxically lead to feelings of loneliness and social isolation. While social media platforms are designed to bring people together, they can often result in shallow and superficial interactions that fail to fulfill the deeper emotional needs of individuals.

Loneliness is a complex psychological state characterized by a perceived lack of social connection and meaningful relationships. Excessive social media use has been linked to increased feelings of loneliness, as individuals may spend more time engaging with their devices rather than building and nurturing real-world relationships. The curated and filtered nature of social media can also contribute to a sense of social comparison, where individuals may feel inadequate or left out when comparing themselves to others' seemingly perfect lives and relationships showcased on these platforms.

Alongside loneliness, excessive social media use has also been associated with mental health issues such as melancholy and anxiety. Constant exposure to carefully crafted images and narratives on social media can create unrealistic expectations and pressures, leading to feelings of inadequacy, low self-esteem, and sadness. Moreover, the fear of missing out (FOMO) induced by social media can exacerbate anxiety symptoms, as individuals constantly feel the need to stay connected and updated.

The role of passive aggression in social media interactions

Social media platforms provide a virtual space for communication and self-expression, but they also harbor potential for passive-aggressive behavior in interactions.

Passive aggressive behavior refers to a pattern of expressing negative emotions indirectly, often through subtle or disguised means. It involves the intentional avoidance of direct confrontation, which can lead to misunderstandings, tension, and conflict. Understanding the psychological mechanisms underlying passive-aggressive behavior is crucial for examining its manifestations in social media interactions.

Social media platforms offer a unique context for passive aggression to manifest. Individuals can employ passive-aggressive tactics, such as vaguebooking, subtweeting, or posting cryptic messages, to indirectly express their frustrations or grievances. The relative anonymity and lack of immediate consequences on social media platforms can embolden individuals to engage in passive-aggressive behavior, as they feel less accountable for their actions. Such behaviors can lead to a toxic online environment, where conflicts escalate, relationships deteriorate, and trust is eroded.

Impulsivity and anger on social media

The digital environment of social media can also fuel impulsivity and amplify expressions of anger.

Anonymity and disinhibition play significant roles in influencing individuals' online behaviors. The perceived anonymity on social media platforms can diminish individuals' inhibitions and increase impulsive tendencies. The absence of immediate consequences or face-to-face interactions can lead to a disconnect between online actions and real-world repercussions, enabling individuals to engage in impulsive and aggressive behaviors they may not exhibit in offline settings.

Impulsive behavior and anger expression on social media have various implications. Rapid-fire responses, hasty judgments, and impulsive sharing of content can lead to miscommunication, conflicts, and damaged relationships. The amplification of anger through online platforms can result in the spread of negativity, hostility, and online harassment. Moreover, individuals who frequently engage in impulsive and angry behaviors on social media may experience adverse effects on their own well-being, including heightened stress levels and compromised mental health.

Empathy and emotional connection in the digital age

The digital age has reshaped the landscape of empathy and emotional connection, presenting both opportunities and challenges.

Empathy deficits have been observed in the context of social media use. The nature of online interactions, often lacking nonverbal cues and contextual information can hinder the development and expression of empathy. The constant exposure to a barrage of information and news on social media can desensitize individuals, leading to compassion fatigue and reduced empathic responses. Moreover, the prevalence of online disinhibition can decrease the perceived accountability for empathetic behavior, further impacting empathic engagement on social media platforms.

Social Media Usage Patterns in India

The emergence of social media in India

The emergence of social media in India has witnessed a significant transformation in how people connect,

communicate, and share information. Over the past decade, the widespread availability of affordable smartphones and internet connectivity has fueled the rapid adoption of social media platforms across the country. The increasing digital literacy and changing socio-cultural dynamics have contributed to the growing influence of social media in Indian society.

Adoption and popularity of social networking platforms

Social networking platforms have gained immense popularity in India, with millions of users actively engaging on various platforms. Facebook, with its wide user base, remains one of the most popular social networking platforms in the country. Additionally, platforms like Instagram, Twitter, WhatsApp, and YouTube have also gained significant traction among Indian users. The diverse features and functionalities offered by these platforms cater to the varied needs and preferences of Indian users, contributing to their widespread adoption.

Cultural factors influencing social media engagement in India

India's rich cultural heritage and diversity play a crucial role in shaping social media engagement patterns. Indian users tend to emphasize personal connections and relationships, which are reflected in the way they engage with social media. Family-oriented values, social hierarchies, and collective identity influence the content shared and the interactions on social media platforms. Moreover, cultural festivals, regional languages, and local customs have found expression on social media, making it a platform for cultural preservation and celebration.

Social media and the Indian youth

The Indian youth population constitutes a significant segment of social media users in the country. The younger generation has embraced social media as a means of self-expression, social networking, and information sharing. Social media has become an integral part of their daily lives, shaping their attitudes, behaviors, and aspirations. It provides them with a platform to voice their opinions, engage in social causes, and explore new opportunities. However, excessive social media use among the youth has also raised concerns about its impact on mental health, academic performance, and social skills.

Influence of social media on Indian society and relationships

Social media's influence on Indian society and relationships is multifaceted. On one hand, it has facilitated greater connectivity and bridged geographical boundaries, enabling people to stay connected with friends, family, and communities. It has also provided a platform for social activism, enabling individuals to raise awareness and mobilize support for various causes.

However, social media has also introduced new challenges, such as the spread of misinformation,

cyberbullying, and the erosion of privacy. It has altered the dynamics of relationships, with virtual interactions sometimes replacing face-to-face interactions, leading to concerns about the authenticity and depth of connections.

Literature Review

In recent years, the mental health of adolescents and young adults in the United States has been a topic of growing concern. Scholars and researchers have observed a significant decline in mental well-being among this demographic, coinciding with the rise of social media platforms. This essay delves into the intricate relationship between social media usage and mental health, exploring the negative consequences associated with excessive use. Drawing on studies and research, we aim to shed light on the multifaceted effects of social media on the young mind and the challenges it presents to their overall well-being.

The Rise of Social Media and its Impact on Mental Health

The proliferation of social media platforms in the mid-2000s brought about a fundamental shift in the way young people engage with the world around them. While these platforms offer opportunities for connectivity, self-expression, and information sharing, they also come with a darker side that can affect mental health. Researchers have noted a disturbing trend: between 2008 and 2018, there was an 83% increase in the number of individuals aged 18 to 23 reporting a major depressive episode (NSDUH 2019). Furthermore, suicide rates among individuals aged 15 to 24 have risen significantly, making it the second most common cause of death in this age group (National Center for Health Statistics 2021).

Although the precise reasons behind these alarming changes remain elusive, scholars have postulated that social media usage may play a pivotal role. Academic studies conducted by Patel *et al.* (2007) and Twenge *et al.* (2019) suggest a correlation between the prevalence of social media and the deterioration of mental health among young adults. These studies imply that the constant exposure to carefully curated online lives and the pressure to conform to unrealistic standards portrayed on social media can lead to feelings of inadequacy, loneliness, and anxiety.

The Detrimental Effects of Excessive Social Media Use

A study conducted in India by Singh, Amir, and Sabrawal highlights the excessive usage of social media among young people aged 16 to 25 (Singh *et al.*, year). The majority of participants reported spending one to five hours daily on social media platforms, with some even devoting approximately one-third of their day to online activities. This excessive use disrupts their everyday routine tasks, leading to negative consequences for their mental and physical health.

One of the most profound impacts of excessive social media use is the toll it takes on mental well-being. Users experience mental exhaustion, heightened tension, anxiety, and even panic attacks. The constant exposure to an online world filled with filtered images, idealized lifestyles, and the pressure to constantly compare oneself to others can lead to a distorted self-perception and increased anxiety levels. As F. Scott Fitzgerald poignantly wrote in "The Great Gatsby": "So we beat on, boats against the current, borne back ceaselessly into the past." This quote aptly captures the incessant cycle of comparison and self-doubt that social media can perpetuate, negatively impacting mental health.

Moreover, excessive social media use has been linked to a decrease in productivity potential. The constant browsing, scrolling, and engagement with online content divert attention from real-world responsibilities, hindering academic and professional performance. The compulsive need to be connected and the fear of missing out (FOMO) often lead to a diminished ability to focus, concentrate, and effectively manage time. This sentiment is beautifully expressed by T.S. Eliot in "The Love Song of J. Alfred Prufrock": "I have measured out my life with coffee spoons." In today's context, it could be said that many measure out their lives by the endless scroll of social media feeds, neglecting their own potential and aspirations.

Physical health is also affected by excessive social media use. The sedentary nature of spending prolonged periods hunched over screens leads to a decrease in physical activity, which in turn can contribute to various health issues such as obesity, cardiovascular problems, and musculoskeletal disorders. The negative impact on physical health further exacerbates the decline in mental well-being, creating a vicious cycle that hinders overall wellness.

The influence of social media on the mental health of adolescents and young adults cannot be overlooked. The rise of these platforms has brought about both opportunities and challenges, with the latter having a profound impact on the well-being of the young generation. As illustrated by the research and studies mentioned, excessive use of social media has detrimental effects on mental and physical health, including heightened anxiety levels, decreased productivity, and various associated issues.

To address this growing concern, it is crucial for individuals, families, educators, and policymakers to promote digital well-being and advocate for a balanced approach to social media use. This involves raising awareness about the potential risks of excessive usage, encouraging healthy boundaries, and fostering open discussions about mental health and the digital world. By doing so, we can strive to create a more supportive and resilient environment for the mental well-being of adolescents and young adults in the digital age.

As E.E. Cummings beautifully expressed, "It takes courage to grow up and become who you really are." In the face of the digital onslaught, it is essential for young individuals

to cultivate self-awareness, embrace their uniqueness, and find the courage to navigate the digital landscape while prioritizing their mental health and well-being.

Social Media and Empathy

Empathy, as a multidimensional concept, plays a crucial role in human interactions by facilitating understanding, emotional connection, and compassionate behavior towards others (Davis, 1983). It encompasses both cognitive and affective components, allowing individuals to not only comprehend another person's perspective but also experience similar emotions (Levenson & Ruef, 1992). The literature on empathy provides valuable insights into its nature, underlying mechanisms, and effects on behavior.

Davis (1983) defines empathy as one's responses to another person's perceived experiences. This definition emphasizes the importance of perceiving and understanding others' perspectives in order to have an emotional reaction. Empathy involves both intellectual and affective aspects, enabling individuals to empathize with others by recognizing their feelings and thoughts (Baron-Cohen & Wheelwright, 2004). Baron-Cohen (2011) suggests that empathy emerges when individuals shift from a single-minded focus of attention to a double-minded focus, allowing them to empathize with and attend to the experiences of others. This empathic response often leads to helping behavior (Maner *et al.*, 2002).

Batson *et al.* (1983) argue that empathy promotes altruism by highlighting the role of our capacity to experience our own suffering and reflect on the suffering of others. This empathetic care gives rise to selfless altruism, where individuals prioritize alleviating the suffering of others over their own interests. Although the first experiment conducted by Batson *et al.* faced criticism regarding sampling bias, subsequent research attempted to address these concerns and provide a more comprehensive understanding of empathetic concern (Batson *et al.*, 1983).

Fultz *et al.* (1986) found that empathy can encourage altruistic actions even in the absence of social incentives. In their study, participants were presented with assertions from a confederate and given the choice to consider either the truth or the confederate's point of view. The results showed that manipulating social assessment influenced participants' opinions about offering assistance. This suggests that experiencing empathy for someone enhances individuals' ability to assess the emotional state of others, thereby increasing the likelihood of helping them. Empathy is not limited to human beings; non-human animals also display empathetic behaviors.

Bartal *et al.* (2011) observed that when a live rat was restrained, its cagemate would assist in relieving its pain. Furthermore, the study found that the rat continued to help the confined rat even when offered a reward. These observations are consistent with the concept of emotional

contagion, which suggests that animals become more sensitive to suffering when they witness pain in others (Langford *et al.*, 2006). Although the external validity of both the Fultz *et al.* and Bartal *et al.* experiments may raise concerns, their findings provide valuable insights into the functioning of empathy and its impact on behavior.

Empathy encompasses both emotional and cognitive elements. Levenson and Ruef (1992) define empathy as understanding another person's feelings, experiencing similar emotions, and demonstrating compassionate actions towards those in need. This definition highlights the multifaceted nature of empathy, encompassing not only the ability to understand and share others' emotions but also the willingness to act in a compassionate manner.

To further understand empathy, several studies have explored its neural correlates and the factors that influence empathic responses. Functional magnetic resonance imaging (fMRI) studies have identified brain regions involved in empathy, such as the anterior cingulate cortex, the insula, and the mirror neuron system (Decety & Jackson, 2004; Keysers & Gazzola, 2014). These brain regions play a role in emotional processing, perspective-taking, and mirroring others' actions and emotions, suggesting their involvement in empathic responses.

Various factors can influence empathic responses, including individual differences, situational factors, and social context. Individual differences in empathy have been found to be influenced by genetic factors (Warrier *et al.*, 2018), early socialization experiences (Knafo *et al.*, 2008), and cognitive abilities (Mazza *et al.*, 2019). Situational factors, such as perceived similarity, perceived fairness, and social norms, can also impact empathic responses (Dovidio *et al.*, 2006; Eisenberg & Lennon, 1983). Moreover, the social context, including cultural norms and socialization practices, can shape empathic tendencies and expressions (Miller & Bersoff, 1992; Tsai *et al.*, 2006).

Empathy is a multidimensional concept that involves perceiving and responding to others' experiences. It encompasses both cognitive and affective elements, allowing individuals to understand and share others' emotions, leading to compassionate actions. Empathy promotes altruism, as individuals are driven to alleviate the suffering of others. Research has demonstrated the presence of empathy in both humans and non-human animals, providing valuable insights into its functioning and effects on behavior. Further studies investigating the neural mechanisms underlying empathy and the various factors influencing empathic responses will contribute to a more comprehensive understanding of this fundamental aspect of human nature.

Social Media and Passive Aggression

Passive aggression, a form of aggression that involves expressing negative sentiments and aggressions indirectly and

deviously, has become prevalent in online spaces, particularly on social media platforms. While the term "aggression" encompasses activities with the intention to harm or injure others, passive aggression focuses on psychological afflictions rather than physical harm (Davis, 1983).

In recent years, the rise of social media has provided individuals with a powerful platform for communication and self-expression. Social media platforms offer numerous advantages, such as connecting people across the globe, facilitating the sharing of information and ideas, and fostering a sense of community. However, alongside these positive aspects, there is growing recognition of a darker side emerging within these online spaces. Current research indicates that social media is not immune to the presence of aggression, albeit in more subtle and covert forms.

Passive aggression is a notable manifestation of aggression in online contexts. It involves the expression of negative emotions, frustrations, or aggressions in ways that are indirect and less physically harmful but intentional in causing psychological harm. Trolling is one such example of passive aggression that is frequently observed on social media platforms. Trolls engage in behavior that seeks to provoke, deceive, confuse, and insult others, often for their own amusement or to disrupt online interactions (Herring *et al.*, 2002). Despite its prevalence, empirical research on trolling and passive aggression in online spaces is still limited, with much of the existing literature exploring these behaviors in specific cyberspaces, such as online gaming worlds, feminist discussion forums, and collaborative platforms like Wikipedia (Shachaf & Hara, 2010; Herring *et al.*, 2002; Thacker & Griffiths, 2012).

Herring *et al.* (2002) conducted a seminal study on trolling in online feminist discussion forums and identified three types of messages sent by trolls. The first type consisted of messages from senders who appeared outwardly sincere, only to later reveal their true intentions of causing harm or confusion. The second type comprised messages designed to provoke predictable responses or flames, thereby creating tension and conflict within the online community. The third type involved messages that wasted the group's time by provoking futile arguments, diverting attention from meaningful discussions. These findings shed light on the complex nature of trolling and its various manifestations, highlighting the multifaceted strategies employed by trolls to disrupt and harm others.

Shachaf and Hara (2010) explored trolling behavior specifically within the context of Wikipedia. Their investigation revealed that boredom, attention seeking, and retaliation were among the major motivations for trolls. Trolls viewed Wikipedia as a venue for amusement, deriving pleasure from causing harm to both the site and its users. This finding suggests that trolls may be driven by a combination of personal gratification and a desire to undermine the integrity of online platforms.

The anonymity afforded by the internet plays a significant role in facilitating passive aggression and trolling behavior. Non-mainstream online environments, such as forums and discussion boards, are particularly vulnerable to trolling due to the absence of real-world consequences and the ability to mask one's true identity (Herring *et al.*, 2002). The online realm provides a platform for the enactment of power inequities, where individuals may engage in trolling behaviors motivated by factors such as sexism, racism, and heterosexism (Herring *et al.*, 2002). The lack of face-to-face interaction and the ability to distance oneself from the immediate consequences of one's actions may contribute to a sense of detachment and disinhibition, making passive aggression and trolling more prevalent in online spaces.

While the connection between social media use and aggressive behavior is complex, studies have explored specific patterns of internet usage that may contribute to increased hostility. Two main theories attempt to explain why individuals engage in aggressive behavior.

The biological approach posits that aggression is an innate trait, while Bandura's moral disengagement theory suggests that individuals may morally disengage and engage in immoral actions, such as bullying (Gini, Pozzoli, & Hymel, 2014). Aggression can manifest in various forms, including physical aggression, verbal aggression (e.g., spreading rumors), relational aggression (aimed at harming social relationships), reactive aggression (provoked by anger), and online aggression (e.g., cyberbullying) (Krahé, 2020; Allen & Anderson, 2017; Cyberbullying Research Center, 2019).

A recent study by Craig *et al.* (2020) examined the relationship between social media use (SMU) and cyber-aggression among 181,000 adolescents from 42 nations. The study investigated three forms of SMU: intense use, problematic use (excessive use leading to addiction), and frequent online chatting with strangers. The findings revealed that each form of SMU was more strongly associated with cyberbullying victimization than with perpetration, with girls more likely than boys to experience cyber victimization. This gender difference may be attributed to girls spending more time online, rendering them more susceptible to environments that reinforce aggression. Problematic use of social media was closely related to both cyberbullying perpetration and victimization, indicating the potential negative consequences of excessive and addictive social media use (Craig *et al.*, 2020; Martínez-Ferrer, Moreno, & Musitu, 2018).

While these findings provide valuable insights into the relationship between social media use and aggressive behaviors, it is important to note that the results are based on self-report data, which may be influenced by factors such as social desirability bias and underreporting of sensitive behaviors. Moreover, the findings may vary across different aspects of social media use and cultural contexts,

highlighting the importance of adopting a socioecological perspective when examining the complex interplay between social media, aggression, and individual and contextual factors (Craig *et al.*, 2020).

To gain a comprehensive understanding of passive aggression in online spaces, further research is necessary. Future studies should explore the underlying psychological mechanisms driving passive aggression, examine the influence of social norms and cultural factors on online aggression, and develop effective interventions to address passive aggression and its consequences. Additionally, considering the ethical implications of studying online aggression and the potential for research to inform policy and platform design can contribute to creating safer and more inclusive online environments.

Passive aggression in online spaces, exemplified by behaviors such as trolling, poses a significant challenge in maintaining positive and constructive online interactions. While research on passive aggression and trolling is still in its early stages, existing studies highlight the multifaceted nature of these behaviors and their impact on individuals and online communities. Understanding the motivations and consequences of passive aggression in online spaces is crucial for developing strategies to mitigate its negative effects and promote a more respectful and supportive online environment.

Social Media Impulsivity

Impulsivity is a significant risk factor associated with irresponsible and excessive usage of social media platforms. Individuals with impulsive tendencies exhibit traits such as a failure to plan, poor time management, and acting without considering the consequences of their actions (Patton, Stanford, & Barratt, 1995). When examining the traits of individuals who excessively use social media, it becomes apparent that they often display impulsive characteristics, such as a lack of planning, ineffective time management, and addiction to social media (Kuss & Griffiths, 2011).

Impulsivity encompasses various characteristics, including impatience, carelessness, seeking excitement, lack of deep thought, and a tendency to overlook undesirable events (Chamberlain & Sahakian, 2007; Ho, Mobini, Chiang, Bradshaw, & Szabadi, 1999; Hollander & Evers, 2001). Impulsive individuals also struggle to use current information to analyze the potential outcomes of their behavior, prioritize immediate desires over long-term rewards, and demonstrate difficulties in motor skills (Beard & Wolf, 2001; Cyders & Smith, 2008; Petrie & Gunn, 1998; Spinella, 2007). Studies have indicated that impulsivity is associated with an increased likelihood of developing various addictive behaviors, including obesity, sex addiction, alcoholism, drug abuse, internet addiction, pathological gaming, and engagement in risky behaviors (Beard & Wolf, 2001; Cyders & Smith, 2008; Petrie & Gunn, 1998; Spinella,

2007). In the context of social media, impulsivity emerges as a crucial factor contributing to excessive usage. Excessive social media use has been linked to internet addiction (Whang, Lee, & Chang, 2003), social media addiction (Kuss & Griffiths, 2011), and online gaming addiction (Zhou, 2010). In other words, excessive engagement with social media platforms can play a pivotal role in the development of technology addiction.

Impulsivity is closely associated with impulsive control deficiency disorders, characterized by symptoms such as a loss of self-control, impulsive actions, a strong desire for excitement, a disregard for the potential consequences of behavior, and carelessness (Cyders & Smith, 2008; Colak, Altinkurt, & Yilmaz, 2014; Spinella, 2007). Excessive social media use is often influenced by impulsivity, as individuals with limited self-control and planning skills are more prone to excessive engagement with social media platforms (Wu *et al.*, 2013). Moreover, the overuse of social media can contribute to feelings of loneliness by isolating users from real-life social contexts (Chou & Hsiao, 2000).

Recent studies have provided further insights into the relationship between impulsivity and excessive social media use. For example, a study by Wu *et al.* (2013) identified impulsivity as a significant predictor of problematic social media use among college students. The findings indicated that higher levels of impulsivity were associated with increased vulnerability to excessive social media usage. Similarly, Kuss and Griffiths (2011) found that individuals with higher levels of impulsivity were more likely to develop social media addiction.

In addition to these studies, further research has explored the impact of impulsivity on other aspects of social media use. For instance, impulsivity has been linked to behaviors such as excessive self-disclosure on social media platforms (Walters, Rizzo, & Li, 2018) and higher engagement in risky online behaviors (Liu, Li, & Ding, 2019). These findings highlight the multifaceted nature of impulsivity and its implications for social media use.

Understanding the role of impulsivity in excessive social media use is crucial for developing effective interventions and strategies to promote responsible and balanced usage. By targeting impulsivity-related traits and providing individuals with tools to enhance self-control, time management, and decision-making skills, interventions can help individuals regulate their social media use and reduce the negative consequences associated with excessive engagement.

Impulsivity is a significant risk factor for excessive social media use. Individuals with impulsive tendencies are more likely to engage in irresponsible and addictive behaviors on social media platforms. The characteristics associated with impulsivity, such as a lack of planning, poor time management, and a tendency to prioritize immediate

desires, contribute to the development of technology addiction. Understanding the relationship between impulsivity and social media use can inform interventions and strategies to promote responsible and balanced usage, ultimately fostering healthier online experiences.

The Present Study

Rationale

The present study aims to investigate the relationships between social media usage, empathy, passive aggression, and impulsiveness, as well as explore potential age-related differences in these associations. The rationale for conducting this study is based on several key factors:

- *Growing prevalence of social media usage:* Social media has become an integral part of the lives of individuals across various age groups. The increasing popularity and accessibility of social media platforms raise concerns about their potential impact on individuals' psychological well-being and social behaviors. Understanding the relationships between social media usage and psychological constructs such as empathy, passive aggression, and impulsiveness is crucial in order to comprehend the potential consequences of extensive social media engagement.
- *Impact on empathy:* Empathy, the ability to understand and share the feelings of others, plays a vital role in fostering positive social relationships and prosocial behaviors. Previous research suggests that excessive social media usage might diminish individuals' empathic tendencies. However, further investigation is needed to gain a comprehensive understanding of the relationship between social media usage and empathy.
- *Influence on passive aggression:* Passive aggression refers to indirect expressions of hostility, such as sarcasm, silent treatment, or subtle acts of sabotage. Limited research has explored the association between social media usage and passive aggression. Given the unique nature of online interactions, where individuals may feel less accountable for their behavior, it is important to examine whether social media usage contributes to increased passive aggressive behaviors.
- *Link to impulsiveness:* Impulsiveness refers to the tendency to act on immediate urges without considering long-term consequences. Previous studies have highlighted a potential link between excessive social media usage and heightened impulsivity. However, further investigation is needed to determine the extent of this association and whether it varies across different age groups.
- *Age-related differences:* It is important to consider potential age-related differences in the impact of social media usage on psychological constructs. Young adults and the elderly population may have distinct

experiences, motivations, and patterns of social media engagement. Understanding potential generational differences can provide valuable insights into how social media affects individuals of different age groups.

By conducting this study, we aim to contribute to the existing literature by providing empirical evidence on the relationships between social media usage, empathy, passive aggression, and impulsiveness. The findings can have implications for the development of interventions and guidelines aimed at promoting healthy social media habits and minimizing the potential negative consequences associated with excessive social media usage.

Objectives

The objectives of this study are:

- To examine the relationship between social media usage, empathy, passive aggression, and impulsiveness:
- To compare the differences in social media usage and its impact on empathy, passive aggression, and impulsiveness among young adults and the elderly population:

By addressing these objectives, this dissertation aims to contribute to the knowledge base on the relationships between social media usage, empathy, passive aggression, and impulsiveness. The findings have implications for understanding the psychological effects of social media and can potentially inform interventions and strategies to promote healthy social media usage habits among individuals of different age groups

Hypotheses

- H1) Greater social media usage will lead to reduced empathy.
 H2) Greater social media usage will lead to increased passive aggression.
 H3) Greater social media usage will lead to increased impulsivity.
 H4) Greater social media usage will lead to reduced empathy in young adults more than elderly population.
 H5) Greater social media usage will lead to increased passive aggression in young adults more than elderly population.
 H6) Greater social media usage will lead to increased impulsivity in the young adult population more than elderly population

Materials and Methods

Participants

The estimated sample size for this study is $n = 200$. The participants are Indian citizens aged between 18 to 30 and 40 and above, with a minimum education level of high school and above. The purposive sampling method will be employed to select participants who meet the specific criteria required for the study.

Measures

Empathy

Empathy will be measured using the Toronto empathy scale (TEQ) developed by Spreng, McKinnon, Mar, and Levine (2009). The TEQ consists of 16 statements, and participants will provide responses on a 5-point Likert scale ranging from "Never" to "Always." Positively worded items include statements 1, 3, 5, 6, 8, 9, 13, and 16, while negatively worded items are reverse scored (2, 4, 7, 10, 11, 12, 14, and 15). The reliability statistics of this measure indicate a Cronbach's alpha coefficient of .650, based on 16 items.

Impulsiveness

Impulsiveness will be measured using the Barratt impulsiveness scale (BIS-15), a short form developed by Spinella (2007). The BIS-15 consists of three subscales representing different facets of impulsivity: non-planning impulsivity (items 1, 5, 7, 8, and 15), motor impulsivity (items 2, 9, 10, 12, and 13), and attentional impulsivity (items 3, 4, 6, 11, and 14). Participants will rate each item on a 4-point Likert scale.

The reliability statistics for this measure indicate a Cronbach's alpha coefficient of .619, based on 15 items.

Passive aggression

Passive aggression will be measured using the passive aggression scale developed by Young-Ok Lim and Kyung-Hyun Suh from Sahmyook University, Seoul Korea. The scale consists of 21 items that assess passive aggressive behaviors and attitudes. Participants will provide their responses on a Likert scale, indicating the extent to which they agree or disagree with each statement. The reliability statistics of this measure indicate a Cronbach's alpha coefficient of .895, based on 21 items.

Social media usage

Social media usage will be measured using the Social Media Scale developed by Aylin Tutgun-Ünal (Maltepe University) and Levent Deniz (Marmara University). This scale assesses participants' patterns of social media usage, including frequency, duration, and attitudes towards social media platforms. The scale captures various aspects of social media usage behavior and will provide valuable insights into participants' engagement with social media. The reliability statistics for this measure indicate a high level of internal consistency, with a Cronbach's alpha coefficient of .965 based on 41 items.

Procedure

The study employed a quantitative research design to investigate the relationships between social media usage, empathy, impulsiveness, and passive aggression among Indian citizens. Data collection was conducted using an online survey administered through Google Forms. The estimated sample size for the study was $n = 200$. To recruit participants, a

purposive sampling method was employed, targeting Indian citizens aged between 18 to 30 and 40 years and above, with a minimum education level of high school and above.

The online survey included several measures to assess the study variables. Empathy was measured using the TEQ developed by Spreng *et al.* (2009), consisting of 16 statements rated on a 5-point Likert scale. The BIS-15 developed by Spinella (2007) was used to measure impulsiveness. The BIS-15 consisted of three subscales representing different facets of impulsivity: non-planning impulsivity, motor impulsivity, and attentional impulsivity. Participants rated each item on a 4-point Likert scale.

Passive aggression was assessed using the passive aggression scale developed by Young-Ok Lim and Kyung-Hyun Suh from Sahmyook University, Seoul, Korea. The scale comprised 21 items measuring passive aggressive behaviors and attitudes. Participants indicated their agreement or disagreement with each statement using a Likert scale.

To capture participants' social media usage patterns, the social media scale developed by Aylin Tutgun-Ünal and Levent Deniz was utilized. This scale measured various aspects of social media usage, including frequency, duration, and attitudes towards social media platforms.

Participants completed the survey, providing their responses to all measures.

Once data collection was complete, the collected data was exported from Google Forms and imported into the statistical software SPSS for analysis. Descriptive statistics were used to summarize the characteristics of the study variables. Correlation analysis was conducted to examine the relationships between social media usage, empathy, impulsiveness, and passive aggression. Furthermore, regression analysis was performed to determine the predictive power of social media usage on empathy, impulsiveness, and passive aggression.

By following this procedure, the study aimed to gain insights into the relationships between social media usage, empathy, impulsiveness, and passive aggression among Indian citizens

Result

Data Analysis Techniques

Descriptive statistics will be used to summarize the characteristics of the study variables. Correlation analysis will be conducted to explore the relationships between social media usage, empathy, impulsiveness, and passive aggression. Regression analysis will be performed to examine the predictive power of social media usage on empathy, impulsiveness, and passive aggression. The statistical software SPSS will be utilized to carry out the data analysis.

By employing the above research design, measures, and data analysis techniques, this study aims to gain a comprehensive understanding of the relationships between

social media usage, empathy, impulsiveness, and passive aggression among Indian citizens.

Descriptives

The descriptives are based on 3 points; total sample, young adults and adults.

Total sample

- *Social media usage (SM1)* Table 1: The mean score for social media usage in the total sample is 2.11 (SD = 1.062), indicating a moderate level of engagement with social media platforms.
- *Empathy*: The mean empathy score is 41.4713 (SD = 6.00914), reflecting the average level of empathy reported by the participants.
- *Impulsiveness*: The mean impulsiveness score is 32.0318 (SD = 4.34921), indicating the average level of impulsiveness among the participants.
- *Passive aggression*: The mean passive aggression score is 38.5414 (SD = 17.16641), representing the average level of passive aggressive behaviors and attitudes reported by the participants.

Young adults

- *Social media usage*: The mean social media usage score for young adults (Table 2) is 60.2222 (SD = 29.88214), suggesting a higher level of engagement with social media compared to the total sample.
- *Empathy*: Young adults have a mean empathy score of 41.7063 (SD = 5.96666), indicating a similar level of empathy compared to the total sample.
- *Impulsiveness*: The mean impulsiveness score among young adults is 31.5635 (SD = 4.22089), reflecting a similar level of impulsiveness as the total sample.

Table 1: Total sample

Variables	N	Mean	Std. deviation
Social media usage	157	57.87	30.26
Empathy	157	41.48	6.00
Impulsiveness	157	32.03	4.34
Passive aggression	157	38.54	17.16

Table 2: Young adults

Variables	N	Mean	Std. deviation
Social media usage	126	60.22	29.88
Empathy	126	41.70	5.96
Impulsiveness	126	31.56	4.22
Passive aggression	126	37.80	17.30

Table 3: Adults

Variables	N	Mean	Std. deviation
Social media usage	30	47.30	30.38
Empathy	30	40.76	6.12
Impulsiveness	30	33.96	4.48
Passive aggression	30	40.90	16.46

- *Passive aggression*: Young adults have a mean passive aggression score of 37.8095 (SD = 17.30050), indicating a comparable level of passive aggressive behaviors and attitudes to the total sample.

Adults

- *Social media usage*: The mean social media usage score for the elderly population (Table 3) is 47.3000 (SD = 30.38392), indicating a slightly lower level of engagement with social media compared to young adults.
- *Empathy*: The mean empathy score among the elderly is 40.7667 (SD = 6.12898), reflecting a similar level of empathy to the total sample.
- *Impulsiveness*: Elderly participants have a mean impulsiveness score of 33.9667 (SD = 4.48356), indicating a slightly higher level of impulsiveness compared to the total sample.
- *Passive aggression*: The mean passive aggression score for the elderly population is 40.9000 (SD = 16.46595), indicating a comparable level of passive aggressive behaviors and attitudes to the total sample.

Correlation Tables

Total sample (Table 4)

- *Social media usage and empathy*: There is no significant correlation between social media usage and empathy ($r = -.015, p = .850$).
- *Social media usage and impulsiveness*: There is no significant correlation between social media usage and impulsiveness ($r = -.133, p = .096$).
- *Social media usage and passive aggression*: There is a significant positive correlation between social media usage and passive aggression ($r = .331, p < .001$).

Young adults

- *Social media usage and empathy (Table 5)*: There is no significant correlation between social media usage and empathy among young adults ($r = -.075, p = .401$).
- *Social media usage and impulsiveness*: There is no significant correlation between social media usage and impulsiveness among young adults ($r = -.164, p = .066$).
- *Social media usage and passive aggression*: There is a significant positive correlation between social media

Table 4: Correlation for total sample , n = 157

Variables	Empathy	Impulsiveness	Passive aggression
Pearson correlation	-.01	-.13	.33**

Table 5: Correlation for young adults, n = 126

Variables	Empathy	Impulsiveness	Passive aggression
Pearson correlation	-.07	-.16	.43

Table 6: Correlation table for adults n = 30

Variables	Empathy	Impulsiveness	Passive aggression
Pearson correlation	.21	.15	.05

usage and passive aggression among young adults ($r = .436, p < .001$).

Adults

- *Social media usage and empathy (Table 6)*: There is no significant correlation between social media usage and empathy among the elderly population ($r = .21, p = .268$).
- *Social media usage and impulsiveness*: There is no significant correlation between social media usage and impulsiveness among the elderly population ($r = .15, p = .435$).
- *Social media usage and passive aggression*: There is no significant correlation between social media usage and passive aggression among the elderly population ($r = -.05, p = .779$).

Regression Tables

Regression for young adults (Table 7)- Empathy

The regression analysis for empathy among young adults reveals a non-significant relationship between social media usage and empathy ($F = 0.710, p = 0.401$). The standardized beta coefficient indicates a weak and negative association (-0.075), but it is not statistically significant.

Regression for young adults - Impulsiveness

The regression analysis for impulsiveness among young adults shows a non-significant relationship between social media usage and impulsiveness ($F = 3.428, p = 0.066$). The standardized beta coefficient suggests a weak and negative association (-0.164), but it is not statistically significant.

Regression for young adults (Table 8)- Passive aggression

The regression analysis for passive aggression among young adults demonstrates a significant positive relationship between social media usage and passive aggression ($F = 29.046, p < 0.001$). The standardized beta coefficient indicates a strong and positive association (0.436), and the relationship is statistically significant.

Regression for adults - Empathy

The regression analysis for empathy among adults reveals a non-significant relationship between social media usage and empathy ($F = 1.278, p = 0.268$). The standardized beta coefficient suggests a weak and positive association (0.209), but it is not statistically significant.

Table 7: Regression for young adults (n = 126)

Variables	F	Standardized coefficients Beta
Empathy	.71	-.07
Impulsiveness	3.42	-.16
Passive Aggression	29.04	.44

Table 8: Regression for adults (n = 30)

Variables	F	Standardized coefficients Beta
Empathy	1.27	.21
Impulsiveness	.63	.15
Passive aggression	.08	-.05

Regression for adults - Impulsiveness

The regression analysis for impulsiveness among adults shows a non-significant relationship between social media usage and impulsiveness ($F = 0.628$, $p = 0.435$). The standardized beta coefficient indicates a weak and positive association (0.148), but it is not statistically significant.

Regression for adults - Passive aggression

The regression analysis for passive aggression among adults demonstrates a non-significant relationship between social media usage and passive aggression ($F = 0.080$, $p = 0.779$). The standardized beta coefficient suggests a weak and negative association (-0.053), and the relationship is not statistically significant.

Discussion

The present study aimed to investigate the relationship between social media usage and three psychological variables: empathy, impulsiveness, and passive aggression. The findings of the correlation analysis and regression analyses for different age groups provide valuable insights into these relationships.

H1) Greater Social Media Usage will Lead to Reduced Empathy

This hypothesis suggests that increased usage of social media will result in a decrease in empathy. However, based on the findings provided, there is no significant correlation between social media usage and empathy for the total sample, young adults, or the elderly population.

Therefore, this hypothesis is not supported by the data presented.

The findings from the correlation analysis, indicating no significant correlation between social media usage and empathy, align with the results of the mini meta-analysis conducted by Juan *et al.* (2019). The mini meta-analysis synthesized previous research on the topic and found no significant relationship between social media use and empathy. This consistency in findings across different studies adds weight to the conclusion that social media usage does not lead to reduced empathy.

One possible explanation for the lack of correlation could be the complexity of the relationship between social media usage and empathy. While some studies have suggested a negative impact of social media on empathy, others have found no significant association or even positive effects. It is important to consider that social media platforms provide opportunities for various forms of communication, and the specific ways in which individuals engage with social media may influence the outcomes.

Moreover, the lack of significant correlation between social media usage and empathy could also be influenced by individual differences, such as personality traits, social support, or other contextual factors. For instance, the study by Chen and Xu (2021) explored the effect of social

support and empathy on user engagement in online mental health communities and found that social support played a mediating role in the relationship between empathy and engagement. These factors may interact with social media usage and influence the impact on empathy.

It is crucial to note that while the correlation analysis does not support a direct relationship between social media usage and empathy, it does not completely rule out the possibility of more nuanced associations. The absence of a significant correlation does not imply a causal relationship, and other variables or mechanisms may be at play. Future research could explore these potential moderating or mediating factors to gain a better understanding of the relationship between social media usage and empathy.

Overall, the findings suggest that the relationship between social media usage and empathy is complex and multifaceted. While the hypothesis H1, proposing that greater social media usage leads to reduced empathy, was not supported by the data, it is important to continue investigating this topic to uncover the underlying dynamics and potential contextual factors that may influence empathy in the context of social media use.

H2) Greater Social Media Usage will Lead to Increased Passive Aggression

According to the results, there is a significant positive correlation between social media usage and passive aggression in both the total sample and among young adults. This finding supports the hypothesis that greater social media usage is associated with increased levels of passive aggression. The correlation analysis conducted in this study revealed a significant positive correlation between social media usage and passive aggression for the total sample and among young adults. This finding provides support for hypothesis H2, which proposed that greater social media usage is associated with increased levels of passive aggression.

The positive correlation suggests that individuals who engage more frequently or extensively with social media platforms tend to exhibit higher levels of passive aggression. Passive aggression refers to a pattern of indirect expression of hostility or negative emotions, often through subtle or non-confrontational means. The nature of social media, with its relative anonymity and the ability to communicate indirectly, may provide an environment conducive to passive-aggressive behaviors.

On the other hand, the regression analysis for passive aggression yielded significant results for the total sample and among young adults. This indicates that there is a positive relationship between social media usage and passive aggression in these groups. The regression results provide additional evidence to support hypothesis H2, which suggested that greater social media usage is associated with increased levels of passive aggression.

In conclusion, the correlation and regression analysis revealed a significant positive correlation between social media usage and passive aggression for the total sample, supporting hypothesis H2.

H3) Greater Social Media Usage will Lead to Increased Impulsivity

The data provided does not indicate a significant correlation between social media usage and impulsiveness for the total sample or any of the subgroups (young adults and the elderly population). Therefore, there is no evidence to support the hypothesis that greater social media usage leads to increased impulsivity. The correlation analysis conducted in this study revealed no significant correlation between social media usage and impulsiveness for both the total sample and the examined age groups. This finding is consistent with the study by Zhang *et al.* (2016), which explored the relationship between impulsivity and internet addiction among Chinese college students and also reported no significant association.

The lack of a significant correlation between social media usage and impulsiveness suggests that greater social media usage does not necessarily lead to increased impulsivity. This finding contradicts hypothesis H3, which proposed that there is a positive relationship between social media usage and impulsivity.

It is important to consider potential explanations for these results. One possible explanation is that impulsivity and social media usage may be influenced by different underlying factors. Impulsivity is a complex construct that encompasses various dimensions, including cognitive, behavioral, and emotional aspects. It is influenced by a range of individual differences, such as personality traits and genetic factors, as well as environmental factors. On the other hand, social media usage is influenced by factors such as social connectedness, information seeking, and entertainment purposes. The lack of a significant correlation suggests that while individuals may engage in social media activities, it does not necessarily translate into increased impulsivity.

Additionally, it is worth noting that the relationship between social media usage and impulsivity may be influenced by the specific features or activities individuals engage in on social media platforms. Different aspects of social media use, such as passive consumption of content versus active engagement and interaction, may have varying effects on impulsivity.

Future research could explore these nuanced factors to gain a deeper understanding of the relationship between social media usage and impulsivity.

Furthermore, cultural and contextual factors may also play a role in shaping the relationship between social media usage and impulsivity. The study by Zhang *et al.* (2016) focused on Chinese college students, suggesting that cultural differences may impact the relationship between

impulsivity and internet addiction. It would be valuable for future research to examine how cultural and contextual factors influence the relationship between social media usage and impulsivity in different populations. Similarly, the regression analysis for impulsiveness also did not show significant relationships with social media usage for the total sample or any of the age groups. This finding does not align with hypothesis H3, which proposed that greater social media usage leads to increased impulsivity. The regression results further strengthen the conclusion that social media usage does not have a significant effect on impulsiveness.

In conclusion, the findings from the correlation analysis indicate no significant correlation between social media usage and impulsiveness, consistent with the study by Zhang *et al.* (2016). These results do not support hypothesis H3, suggesting that greater social media usage does not lead to increased impulsivity. Further research is needed to explore the underlying mechanisms and potential moderating factors that may influence the relationship between social media usage and impulsivity.

H4) Greater Social Media Usage will Lead to Reduced Empathy in Young Adults More than the Elderly Population

The findings do not support this hypothesis as there is no significant correlation between social media usage and empathy for either young adults or the elderly population. Therefore, there is no evidence to suggest that social media usage affects empathy differently between the two age groups. Consistent with the correlation analysis, the regression analysis for empathy did not yield significant relationships for the total sample or any of the age groups. This means that social media usage does not have a substantial impact on empathy. The regression results reinforce the findings from the correlation analysis, suggesting that there is no significant relationship between social media usage and empathy, regardless of age.

H5) Greater Social Media Usage will Lead to Increased Passive Aggression in Young Adults More than the Elderly Population

The data indicates a significant positive correlation between social media usage and passive aggression among young adults, but no significant correlation is observed for the elderly population. This finding suggests that greater social media usage may have a stronger association with increased passive aggression in young adults compared to the elderly population, supporting the hypothesis. There was no significant correlation between social media usage and passive aggression among the elderly population. This finding indicates a potential age-related difference in the relationship between social media usage and passive aggression. Further, it is important also to note that the regression analysis did not yield significant results for the relationship between

social media usage and passive aggression among adults. This suggests that the impact of social media on passive aggression may differ depending on age. The absence of a significant Relationship among adults highlights the potential age-related differences in the association between social media usage and passive aggression.

It is possible that factors such as generational differences in social media usage patterns, technological familiarity, or differing social contexts may contribute to this variation.

The absence of a significant correlation among the elderly population suggests that social media usage may have a different impact on passive aggression for different age groups. It is important to consider the unique characteristics and experiences of each age group when examining the relationship between social media usage and psychological outcomes.

Several explanations can be proposed to account for the observed age-related differences.

First, the elderly population may have different motivations and patterns of social media usage compared to young adults. Older adults might use social media platforms primarily for staying connected with family and friends or seeking information, rather than engaging in the types of interactions that could trigger passive-aggressive behaviors.

Second, age-related differences in coping strategies and communication styles could contribute to the variation in the relationship between social media usage and passive aggression. Young adults may be more likely to engage in passive-aggressive behaviors due to developmental factors, such as identity exploration, interpersonal conflicts, or increased sensitivity to social evaluation. In contrast, the elderly population may have developed different coping mechanisms and communication styles that reduce the likelihood of passive-aggressive responses.

These findings highlight the importance of considering age as a potential moderating factor in the relationship between social media usage and psychological outcomes.

H6) Greater Social Media Usage will Lead to Increased Impulsivity in the Young Adult Population More than the Elderly Population

The findings do not support this hypothesis since there is no significant correlation between social media usage and impulsiveness for either young adults or the elderly population. Therefore, there is no evidence to suggest that social media usage affects impulsivity differently between the two age groups.

In summary, based on the information provided, the data supports the hypothesis that greater social media usage is associated with increased levels of passive aggression, but does not support the hypotheses related to empathy and impulsivity. Additionally, there is no evidence to suggest that social media usage has different effects on empathy and impulsivity between young adults and the elderly population.

Overall, the regression results reinforce the findings from the correlation analysis by indicating that social media usage does not have a significant impact on empathy and impulsiveness.

However, they also provide additional evidence of a positive relationship between social media usage and passive aggression for the total sample and young adults. These findings highlight the complexity of the relationship between social media usage and psychological variables, with potential variations across different age groups.

Conclusion

In conclusion, this study aimed to investigate the relationship between social media usage and three psychological variables: empathy, passive aggression, and impulsiveness. It also sought to compare the impact of social media usage on these variables between young adults and the elderly population.

The findings of this study contribute to our understanding of the complex relationship between social media usage and psychological outcomes. Firstly, no significant correlation was found between social media usage and empathy, indicating that social media usage does not have a substantial impact on empathy. This finding is consistent with previous research and highlights the need for further exploration of the nuanced associations between social media use and empathy.

A significant positive correlation was observed between social media usage and passive aggression, suggesting that individuals who engage more frequently with social media platforms tend to exhibit higher levels of passive aggression. This finding underscores the potential influence of social media on passive-aggressive behaviors, which may be facilitated by the indirect and anonymous nature of online communication. However, it is important to note that this correlation was significant only among the total sample and young adults, indicating potential age-related differences in the relationship.

No significant correlation was found between social media usage and impulsiveness, indicating that social media usage does not necessarily lead to increased impulsivity. This finding aligns with the hypothesis that greater social media usage does not have a significant impact on impulsiveness. It emphasizes the intricate nature of impulsivity as a construct influenced by various individual and environmental factors, which may not be directly related to social media usage.

In terms of comparing young adults and the elderly population, an age-related difference was identified in the relationship between social media usage and passive aggression. While a significant correlation between social media usage and passive aggression was observed among young adults, no such correlation was found among the elderly population. This discrepancy suggests that age-related factors, such as generational differences in social

media usage patterns, technological familiarity, and coping mechanisms, may shape the impact of social media on passive aggression.

This study provides valuable insights into the relationship between social media usage and psychological variables. It indicates that social media usage does not significantly affect empathy or impulsiveness, but it is positively associated with passive aggression. Additionally, it highlights the potential variations in the impact of social media on psychological outcomes across different age groups. These findings underscore the importance of further research to unravel the underlying mechanisms and contextual factors that influence the relationship between social media usage and psychological outcomes in diverse populations.

Implications

The implications of this study hold significant value for future research, policy development, and practical applications in the field of social media and psychological variables. The key implications include:

Advancing theoretical understanding

This study contributes to the existing body of literature by shedding light on the complex relationship between social media usage, empathy, passive aggression, and impulsiveness. The findings expand our theoretical understanding of how these variables interact in the context of online platforms. This knowledge can guide future research in exploring the underlying mechanisms and processes involved.

Informing intervention strategies

The results have practical implications for designing intervention strategies aimed at promoting healthy social media use. By understanding the lack of direct correlation between social media usage and passive aggression, interventions can focus on targeting other influential factors, such as personality traits, social support, or contextual factors. Tailored interventions can help individuals develop skills for empathetic communication, conflict resolution, and responsible online behavior.

Guiding educational initiatives

The findings can inform educational initiatives targeting young adults, parents, educators, and policymakers. Digital literacy programs can be developed to enhance awareness and understanding of the potential impact of social media on empathy, passive aggression, and impulsiveness. By integrating these findings into educational curricula, individuals can develop critical thinking skills, digital citizenship, and responsible social media use.

Informing social media platform design

Social media platform developers can utilize the insights from this study to design user interfaces and features that promote positive psychological outcomes. Incorporating features that facilitate empathetic communication, foster

respectful interactions, and discourage passive-aggressive behaviors can create a more supportive and beneficial online environment. Understanding the age-related differences can further guide platform customization for different user segments.

Stimulating further research

This study highlights the need for further research to explore the underlying mechanisms and contextual factors that influence the relationship between social media usage and psychological variables. Future studies can delve into the role of individual differences, cultural influences, and the specific activities individuals engage in on social media platforms. Longitudinal studies can also help in understanding the dynamic nature of these relationships over time.

Limitations

While the present study provides valuable insights into the relationship between social media usage, empathy, passive aggression, and impulsiveness, it is important to acknowledge its limitations. Some limitations of this study include:

Sample characteristics

The study's findings may be limited in generalizability due to the specific characteristics of the sample used. For example, if the participants were predominantly from a certain age group, cultural background, or geographical location, the results may not be representative of the broader population.

Cross-sectional design

The study employed a cross-sectional design, which only allows for the examination of associations and correlations at a single point in time. This design limitation prevents the establishment of causal relationships between variables.

Self-report measures

The study relied on self-report measures to assess social media usage, empathy, passive aggression, and impulsiveness. Self-report measures are subject to certain biases, such as social desirability bias or memory recall bias. Participants may underreport or overreport their behaviors or experiences, leading to potential measurement errors.

Potential common method bias

Common method bias refers to the potential bias introduced by using the same method (self-report) to measure both the independent and dependent variables. It is possible that shared method variance influenced the relationships observed in the study.

Limited scope of variables

This study focused on examining the relationship between social media usage, empathy, passive aggression, and impulsiveness. While these variables provide important insights, other psychological factors or contextual variables that may influence the relationship were not considered.

Potential reverse causality

The study primarily focused on the impact of social media usage on empathy, passive aggression, and impulsiveness. However, it is possible that the relationship could also be bidirectional, with these psychological variables influencing social media usage.

Lack of qualitative data

The study relied solely on quantitative measures to assess the variables of interest. Incorporating qualitative data, such as interviews or open-ended questions, could provide richer insights into participants' experiences, motivations, and perceptions regarding social media usage and its impact on psychological variables.

Potential confounding factors

While efforts were made to control for potential confounding variables, there may still be unaccounted factors that influence the relationship between social media usage and psychological variables. Factors such as individual differences, environmental factors, or concurrent life events could have influenced the findings.

Future Research Directions*Longitudinal research*

Conduct longitudinal studies to explore the long-term effects of social media usage on empathy, passive aggression, and impulsiveness, providing insights into developmental trajectories and causal relationships.

Experimental designs

Employ experimental designs to establish causal relationships between social media usage and psychological variables, manipulating exposure to social media and controlling for confounding factors.

Qualitative approaches

Incorporate qualitative methods, such as interviews or focus groups, to gain deeper insights into individuals' experiences and perceptions regarding the impact of social media on empathy, passive aggression, and impulsiveness.

Mediating and moderating factors

Investigate potential mediating and moderating factors, such as personality traits, social support, cultural influences, and individual characteristics, to better understand the complex interplay between social media usage and psychological outcomes.

Intervention studies

Design and evaluate interventions aimed at promoting positive online behaviors and reducing negative outcomes, such as passive aggression, providing practical strategies for individuals and communities to navigate social media use in a healthy and empathetic manner.

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