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Problematic Social Media Use and the Dark Triad

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Abstract:

Social media has become an integral part of daily life, but its misuse has led to the emergence of problematic social media use (PSMU), a condition characterized by addiction-like behaviors. The present thesis explores the links between PSMU and the dark triad- narcissism, Machiavellianism, and psychopathy- through a comprehensive literature review. The aim is to synthesize existing research on how PSMU is defined and categorized, how the dark triad is understood, and how these dark traits correlate to problematic online behavior. Analyzing various empirical studies significant links emerge between the dark triad and PSMU. Despite these insights, gaps remain in fully understanding the mechanisms driving these relationships, warranting further research. This thesis contributes to a deeper understanding of how dark personality traits manifest in the digital space and highlights the need for an increase in conceptual consensus and targeted interventions to mitigate the negative effects of PSMU.

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Overview of the Literature Search on Problematic Social Media Use and the Dark Triad

Social media has transformed the way individuals communicate, consume, interact with, and produce content, creating a new mode of engaging with the world. The increase in connectivity, unfortunately, does not come without its drawbacks. Social media can be put to misuse; researchers are working to define exactly what constitutes *problematic social media use* (PSMU). Conceptual contention and inconsistencies surrounding its definition result in a lack of reliable psychometric scales to measure the condition. Engaging in PSMU can result in several negative consequences in both social and personal life, with research showing correlations between PSMU and an increase in depression, anxiety, and stress (Hussain & Griffiths, 2019). In light of these findings, there has been increasing interest in understanding the underlying personality traits that may predispose individuals to engage in such maladaptive online behaviors.

One influential psychological framework garnering attention in the context of social media use is the Dark Triad—a cluster of three socially aversive personality traits: narcissism, Machiavellianism, and psychopathy. Narcissists are characterized by a pathological desire to bolster their self-image, often through manipulative and callous behavior, which stems from the clash between a grandiose identity and underlying insecurity (Jones & Paulhus, 2014). Machiavellianism is marked by manipulative behavior and a focus on personal gain, with a cynical disregard for morality (Jones &

Paulhus, 2014). Psychopathy, viewed as the most malevolent trait of the three, is characterized by high levels of impulsivity, low levels of empathy, and a tendency for antisocial behavior (Furnham et al., 2013). These traits may predispose individuals to exploit online social platforms for validation, control, and interpersonal dominance (Tang et al., 2022). The relationship between PSMU and the dark triad represents an important area of inquiry due to its potential implications for understanding maladaptive online behaviors.

As digital communication continues to expand, understanding the psychological drivers of these behaviors will aid in clarifying current conceptual confusion, providing a more definitive classification and understanding for PSMU. Greater clarity in the psychological drivers of these behaviors can inform strategies for mitigating their negative effects, both at an individual and societal level.

This paper employs a literature review to synthesize existing research on PSMU, the Dark Triad personality traits, and the relationship between the two. Given the aim to explore these constructs both independently and in relation to one another, the literature search design was structured around two core objectives: (1) a descriptive analysis of PSMU and the Dark Triad traits and (2) an examination of empirical studies that investigate associations between PSMU and the Dark Triad. Additionally, the review will highlight gaps in the research and propose directions for future investigation.

Literature Search Strategy

Three electronic databases -Google Scholar, PubMed, and ScienceDirect- were searched from May to July 2024. Key terms used were “Problematic Social Media Use,” “Behavioral Addiction,” “Excessive Social Media Use,” “Dark Triad,” “Narcissism,” “Machiavellianism,” and “Psychopathy.” The search was limited to articles published from 2005 to 2024 for articles related to PSMU.

Eligibility Criteria

Inclusion criteria for this review required articles to (i) be published in English, (ii) focus on problematic or excessive social media use or social media addiction, (iii) focus on the Dark Triad or at least one of the three Dark Triad personality traits, (iv) employ validated scales for measuring PSMU and the Dark Triad traits. Exclusion criteria included studies focusing on social media use without differentiation of problematic or excessive usage, lack of relevant variables, and the use of non-validated measures for either PSMU or the Dark Triad traits.

For each included study, information was extracted regarding sample characteristics, assessment tools, key findings, and study limitations. The extracted data were then categorized by core themes to facilitate structured analysis: studies addressing PSMU, those examining the Dark Triad traits, and those analyzing the relationship between PSMU and the Dark Triad. Each study was evaluated based on methodological rigor, the validity of measures, and the extent to which its findings offered meaningful insights

or advancements relevant to the research question. Only studies meeting these standards were included in the final analysis.

Chapter 1: Problematic Social Media Use

1.1: What is Problematic Social Media Use?

PSMU has various conceptualizations and is yet to receive formal classification as a mental disorder, but many terms are consistent with its description. One common term is addiction. PSMU has many of the characteristics of a behavioral addiction, defined as the inability to control use, functional impairment, and continuing involvement in the behavior regardless of its negative impacts (Chamberlain et al., 2016). Despite any shared characteristics between PSMU and behavioral addiction, PSMU is not currently recognized as a behavioral addiction. Rather, it has been defined as the use of social media characterized by “addiction-like” symptoms and causing impairments in a user’s daily life in terms of school and job failure and conflicts with family and friends (Marino, et al., 2021). Other mechanisms frequently associated with PSMU are dependence and compulsive use, both of which highlight the behavioral patterns marked by excessive engagement and difficulty in controlling online activity. For the context of this thesis, these terms provide a general understanding of PSMU as a behavioral disorder with patterns reminiscent of addiction, leaving the user struggling to control their social media use to the extent that it negatively impacts their personal, professional, and/or social life.

1.2: Screening/Diagnostic Tools for Problematic Social Media Use

To date, the most used instruments in the research of PSMU are the *Bergen Social Media Addiction Scale* (BSMAS; Andreassen et al., 2017) and the *Bergen Facebook Addiction Scale* (BFAS; Andreassen et al., 2012). The BSMAS and BFAS include 18 items, each scored on a five-point likert scale. (Zarate et al., 2022) identify three primary factors for why the BSMAS is a valid scale to employ when studying PSMU. First, the BSMAS is theoretically grounded, being based on the principles of the components model of addiction (Griffiths, 2005), which outlines six core criteria for identifying addiction: salience, tolerance, mood modification, withdrawal, relapse, and conflict. Secondly, the BSMAS can reflect a range of variations in PSMU due to the scale using ordered polytomous items. Lastly, the BSMAS has been adapted, validated, and employed in international samples, where it has shown good psychometric properties.

The *Social Media Addiction Scale* (SMAS; Tutgun-Ünal & Deniz, 2015) is another prominent measurement scale based on the components model of addiction (Griffiths, 2005). The SMAS presents four factors: occupation, mood modification, relapse, and conflict, aligning with the core criteria of the biopsychosocial theoretical framework, which are examined through 41 items (Cataldo, Ilaria, et al., 2022). The SMAS was developed to assess excessive social media use among university students.

The *Social Networking Addiction Scale* (SNWAS;Turel & Serenko, 2012) is a five-item instrument designed to assess respondents' experiences with their most frequently used social media platform. Participants are asked to rate their behaviors and feelings based

on their interactions with that platform, which helps measure the extent of their problematic use (Moretta et al., 2022).

The scales previously discussed, based on the components model of addiction (Griffiths, 2005), are complemented by another group of measurement scales that base themselves on the DSM-5 criteria for substance use and addictive disorders. Prominent scales in this category include the *Internet Addiction Test* (IAT; Young, 1998), *Social Media Use Questionnaire* (SMUQ; Xanidis & Brignell, 2016), and *Social Media Disorder Scale* (SMDS; Van den Eijnden et al., 2016). The IAT is a 20-item instrument, developed in reference to the DSM-5 criterion for gambling disorder (Moretta et al., 2022). Despite the IAT being developed before social media became popular, multiple studies adapted the test to investigate PSMU by replacing the word 'Internet' with 'social media' or with the name of a specific social media platform (Cataldo, Ilaria, et al., 2022). The SMUQ was developed based on the DSM-5 criteria for gambling disorder, as well as elements from the IAT and the *Fagerstrom Test for Nicotine Dependence* (Heatherton et al., 1991). The SMUQ follows a two-component model centered around withdrawal and compulsion, with its subscales assessing factors such as control dysfunction, craving, occupational, academic, or relational impairment, risky use, tolerance, and withdrawal (Cataldo, et al., 2022). The SMDS evaluates social media use in line with the DSM-5 criteria for Internet Gaming Disorder, the first internet-related disorder recognized and included as a tentative disorder in the DSM-5. The SMDS was developed under the theoretical assumption that social media addiction and Internet Gaming Disorder are

two forms of the same underlying construct, internet addiction, and should be defined using the same set of diagnostic criteria (van den Eijnden et al., 2016).

Distinct from scales grounded in the components model of addiction (Griffiths, 2005) or DSM-5 criteria, the *Generalized Problematic Internet Use Scale 2* (GPIUS-2; Caplan, 2010), utilizes a cognitive-behavioral approach. It consists of 15 items assessing four cognitive and behavioral constructs associated with negative outcomes stemming from maladaptive internet use: preference for online social interaction, mood alteration, cognitive preoccupation, and compulsive behavior (Cataldo, et al., 2022; Moretta et al., 2022). The GPIUS-2 has been used in the assessment of PSMU by replacing the term ‘Internet’ with ‘Social media’ or by requesting that participants focus on their social media use while evaluating each item of the scale (Svicher et al., 2021). The GPIUS-2 was used as a base in the development of the *Problematic Facebook Use Scale* (PFUS; Marino et al., 2017), utilizing the same 15-item scale with the terms ‘Internet’ and ‘Online’ being replaced with Facebook. The authors evaluated the PFUS alongside the BFAS to establish convergent validity (Cataldo, et al., 2022). The BFAS, a widely used and validated measure of Facebook addiction, served as a comparative benchmark to assess the PFUS's accuracy in measuring problematic Facebook use.

The psychometric tools discussed outline the prevailing options utilized when assessing PSMU. Despite the utility of these tools, the assessment of PSMU faces several limitations. One primary issue is the condition’s lack of official classification within established diagnostic manuals such as the *Diagnostic and Statistical Manual for*

Mental Disorders, 5th Edition (DSM-5; American Psychiatric Association, 2013) or *International Classification of Diseases, 11th revision* (ICD-11; World Health Organization, 2022). As a result, there are no universally accepted diagnostic criteria for PSMU, complicating the development of standardized assessment methods and creating challenges when trying to consistently identify the condition, its prevalence, and its overall impact on society. Without formal diagnostic criteria, researchers and clinicians are reliant on self-report measures, which are susceptible to biases, including underreporting or exaggeration of symptoms (Andreassen et al., 2016). Additionally, many assessment tools, including the BSMAS and BFAS, typically rely on cross-sectional designs, assessing an individual's behavior at a single point in time. This limitation makes it difficult to establish the temporal patterns or causal relationships underpinning PSMU, such as whether excessive use is a consequence of underlying psychological issues, or whether it exacerbates pre-existing conditions. Moving forward further research is required to refine assessment tools and establish consensus on the diagnostic boundaries of PSMU as a mental disorder. Until conceptual and diagnostic criteria are agreed upon and standardized, assessing PSMU will remain varied and difficult.

1.3: Effects of Problematic Social Media Use

The pervasive use of social media platforms has prompted significant concern among healthcare professionals and the public regarding its potential harm. An expanding body of evidence increasingly links PSMU to a range of adverse psychological, social, and physiological outcomes.

1.3.1: Psychological Effects

PSMU is increasingly recognized for its adverse psychological effects, which span various aspects of mental health and well-being. Research indicates that PSMU is associated with heightened levels of anxiety, depression, loneliness, and distress (Abbouyi et al., 2024; Bányai et al., 2017; Brailovskaia et al., 2019; Huang, 2020). Moreover, Individuals with high levels of PSMU often report lower self-esteem (Andreassen et al., 2017; Błachnio et al., 2016). Insomnia and disrupted sleep patterns are also found to be associated with PSMU, likely due to prolonged screen time and anxiety related to social interactions or missing out on new messages and content (Woods & Scott, 2016). In extreme cases, PSMU may correlate with suicidal ideation, particularly in individuals already vulnerable to mental health struggles (Jasso-Medrano & López-Rosales, 2018). Together, these findings suggest that PSMU poses a significant and multifaceted risk to psychological well-being.

1.3.2: Social Effects

Research increasingly links PSMU to impaired social functioning, impacting psychosocial areas such as interpersonal relationships, social connectedness, social support, and face-to-face communication (Kircaburun et al., 2019; Meshi & Ellithorpe, 2021). The compulsive and excessive use associated with PSMU often consume substantial time and cognitive resources, depriving users of normal social experiences and ultimately straining interpersonal relationships (Abbouyi et al., 2024). Individuals uncomfortable or unhappy with their social environment were found to be more susceptible to excessive and problematic social media use, turning to social media in an attempt to fulfill their desire for social interaction, feelings of connectedness, and access

to social support (Kırcaburun et al., 2018). However, research indicates that only real-life social support, as opposed to social support received from social media, effectively contributes to overall well-being (Meshi & Ellithorpe, 2021). These findings raise significant concerns given the growing tendency for individuals to rely on social media as a substitute for offline social connections. The greater control over self-presentation available on social media networks may lead individuals to prioritize digital interactions over face-to-face communication. Prioritizing communication on social media over face-to-face interactions has been associated with various adverse effects, including negatively impacted social skills (She et al., 2022) and increased social isolation (Meshi & Ellithorpe, 2021). Individuals engaging in excessive and problematic social media use may exhibit antisocial behaviors, such as cyberbullying, in response to perceived online rejection (Kircaburun et al., 2019). Users engaging in frequent antisocial interactions are likely to experience increased social distress and impaired social support systems (Marengo et al., 2021).

1.3.3: Cognitive and Behavioral Effects

PSMU is linked to a range of cognitive impairments and behavioral issues, primarily in cognitive domains like attention, memory, and inhibitory control (Ioannidis et al., 2019; Stieger & Wunderl, 2022). These cognitive disruptions often reinforce maladaptive behavioral patterns, where users exhibit compulsive checking, excessive engagement, and persistent urges to use social media.

The effects of PSMU can be significant, impacting multiple domains of users' lives by contributing to mental health challenges, such as anxiety and depression, as well as

physical health concerns like disrupted sleep patterns. Research highlights its impact across psychological, social, and physical health domains, raising concerns about its broader implications for global health. As understanding of PSMU evolves, further research is needed to clarify these impacts and to develop interventions aimed at mitigating the potential harm associated with PSMU.

Chapter 2: The Dark Triad

2.1: Theoretical Background

The "Dark Triad" is a concept originally introduced by Pauhlus and Williams in 2002, developed in personality psychology to represent a constellation of three socially aversive traits: narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002). The Dark Triad traits are not interchangeable, with each trait possessing its distinct characterization. However, they share common elements, with each trait exhibiting a socially malevolent disposition, often marked by tendencies toward self-promotion, emotional detachment, manipulativeness, and hostility (Furnham et al., 2013; Paulhus & Williams, 2002).

When examining the Dark Triad, it is important to distinguish between clinical and subclinical manifestations. Much of the theoretical framework surrounding the Dark Triad involves an adaptation of clinical samples, under clinical or forensic supervision, to subclinical samples (Furnham et al., 2013). Traditionally, maladaptive personality traits were studied in clinical settings, involving individuals diagnosed with personality

disorders or engaged in behaviors warranting clinical attention. These settings provided structured environments for supervision and analysis. In adapting this framework to subclinical populations, researchers aimed to understand how these traits manifest in general community samples, where they are expressed in continuous distributions rather than as discrete clinical diagnoses.

This shift underscores how personality science has broadened to investigate socially disruptive tendencies that do not necessarily meet diagnostic criteria but can still significantly impact interpersonal and social functioning. The Dark Triad traits are examined within frameworks similar to those used in normative personality psychology. Predominant structural models like the *Five Factor Model* (McCrae, 1991) and the *HEXACO* model (Lee & Ashton, 2004), with their relevance to normative personality traits, offer a foundational framework for investigating the distinct features of Dark Triad traits (Furnham et al., 2013).

To date, two self-report measurement scales dominate Dark Triad research, the *Dirty Dozen* (Jonason & Webster, 2010) and the *Short Dark Triad* (SD3) scale (Jones & Paulhus, 2014). The Dirty Dozen is a concise measurement tool, containing 12 items with four questions dedicated to each of the three traits. It provides a practical method for large-scale studies but has received some criticism regarding its brevity. The SD3 scale extends to 27 items and offers greater reliability by capturing more nuanced behaviors and attitudes linked to each trait, with nine questions per dimension. For a deeper analysis, measures focusing on the Dark Triad traits independently, such as the

Narcissistic Personality Inventory (NPI), the *Mach IV scale*, and the *Self-Report Psychopathy Scale* (SRP) are used (Furnham et al., 2013; Paulhus & Williams, 2002).

2.2: Narcissism

Narcissism originated in clinical literature and practice and remains categorized as a personality disorder in the DSM-5. The subclinical adaptation of narcissism remains largely consistent with the clinical definition. The core aspects of narcissism include grandiosity, entitlement, dominance, and a sense of superiority (Furnham et al., 2013). The extensive research conducted by Morf and Rhodewalt (2001) strongly supported the clinical to subclinical adaptation of narcissism. Results show that narcissism is driven by a dynamic motivated self-regulation process aimed at affirming one's grandiose self-image, often through external validation or control over social situations. A key aspect within this process is the paradox of grandiosity and vulnerability, where self-assurance coexists with heightened sensitivity to threats against one's self-image.

Narcissism is often linked to complex interpersonal dynamics (Furnham et al., 2013), as individuals with high narcissistic traits may demonstrate manipulative or selfish behaviors. These tendencies can impair relationships, as the narcissistic pursuit of admiration and self-affirmation frequently comes at the expense of others' needs or perspectives. Recent studies indicate that narcissism exhibits a distinct relationship with social media, especially in cases of excessive or problematic use (Andreassen et al., 2017; Casale & Banchi, 2020). The ubiquitous availability of platforms for social comparison and validation can attract individuals who display narcissistic traits, as these

environments often provide immediate feedback and approval metrics, fueling self-enhancement tendencies.

2.3: Machiavellianism

Machiavellianism differs in origin from the clinical roots associated with narcissism and psychopathy. Introduced by (Christie & Geis, 1970) and named after the Italian political strategist Niccolò Machiavelli, the concept draws on his philosophical perspectives. Christie developed a measure of Machiavellianism by selecting statements from Machiavelli's works, demonstrating reliable differences in respondents' agreement with these items (Paulhus & Williams, 2002). Experimental and correlational studies show that individuals scoring high in Machiavellianism tend to exhibit cynical views, a lack of principled values, and a belief that interpersonal manipulation is essential for achieving success in life, which is reflected in their behaviors (Furnham et al., 2013).

2.4: Psychopathy

Alongside narcissism, psychopathy has a well-documented clinical history. Although psychopathy is not formally classified as a distinct disorder in the DSM-5, its traits are closely associated with *antisocial personality disorder* (ASPD). The DSM-5 includes a “with psychopathic features” specifier for ASPD, enabling clinicians to identify psychopathy-related characteristics. Psychopathy is characterized by a complex set of personality traits and behavioral tendencies, often linked with low levels of empathy and anxiety, thrill-seeking, impulsivity, and a tendency toward antisocial behavior (Paulhus & Williams, 2002). Theoretical models often emphasize psychopathy's two key

dimensions: interpersonal-affective traits, such as callousness, dominance, and grandiosity, and behavioral attributes, including impulsivity and aggression (Hare, 2006). Psychopathy is viewed as a critical construct for understanding severe behavioral dysregulation and moral reasoning deficits.

2.5: Importance to Problematic Social Media Use

Understanding associations between the Dark Triad and PSMU provides valuable insights into the underlying psychological factors contributing to maladaptive social media behaviors. This relationship reflects a complex interplay between personality, social cognition, biological predispositions, and specific online motivations, which together shape problematic online engagement (Kircaburun & Griffiths, 2018). Acknowledging the role of personality psychology in PSMU, it is critical to consider Dark Triad traits, as they help explain variations in user motivations and usage patterns, providing insights into why certain individuals may be particularly susceptible to PSMU (Kircaburun et al., 2018). Ultimately, examining associations between the Dark Triad and PSMU can guide psychological assessments and inform interventions, targeting cognitive and emotional aspects to support prevention and treatment efforts.

Chapter 3: The Relationship Between Problematic Social Media Use and the Dark Triad

3.1: Study Characteristics

A total of 14 articles met the eligibility criteria. All of the articles followed a cross-sectional study design and used validated quantitative measurement scales for both PSMU, the Dark Triad traits, and any other variables measured. 13 of the 14 articles addressed general PSMU, with one article focusing specifically on problematic Instagram use. When assessing PSMU, seven of the articles used the BSMAS, four used the SMAS, one used the BFAS adapted for Instagram, one used the SMDS, and one used an adapted version of internet gaming disorder scale (Pontes & Griffiths, 2015). When assessing the Dark Triad, 13 of the 14 articles addressed all three Dark Triad traits, with one article focusing exclusively on narcissism. This article used the *Narcissistic Personality Inventory* (NPI-16), of the other articles, eight used the SD3, and five used the Dirty Dozen scale. Table 1 breaks down the core characteristics, measures used, and general findings of each article.

Study	Sample Characteristics (Country, N, % Female, Mean Age)	Design	Measures	Findings
Andreassen, Pallesen, & Griffiths (2017)	Norway, N = 23,532, 65% Female, Mean Age = 35.8	Cross-sectional	BSMAS, NPI-16	**Bivariate Correlations** Positive correlation between PSMU and narcissism (r =0.06, p < 0.01) **Multiple Regression Analysis** Narcissism positively contributed to PSMU (β = 0.184, p < 0.001)
Barberis et al. (2023)	Italy, N = 788, 75% Female, Mean Age = 24.2	Cross-sectional	BSMAS, Dark Triad Dirty Dozen	**Bivariate Correlations** Positive correlation between the Dark Triad and PSMU (r = .32, p < .01) **Structural Equation Modeling** Statistically significant indirect association between the Dark Triad and PSMU (β =.15, p < 0.001)
Chung et al. (2019)	Malaysia, N = 128, 52% Female, Mean Age = 19.7	Cross-sectional	BSMAS, SD3	**Bivariate Correlations** PSMU has significant positive correlations with all Dark Triad traits: narcissism (r = 0.25, p < .01), Machiavellianism (r = 0.38, p < .01), psychopathy (r = 0.48, p < .01) **Multiple Regression Analysis** Psychopathy (β = 0.28, p < 0.01) was found to be a significant predictor of PSMU.
Demircioğlu & Göncü Köse (2018)	Turkey, N = 229, 68% Female, Mean Age = 21.5	Cross-sectional	BSMAS, SD3-T	**Bivariate Correlations** Machiavellianism (r = 0.24, p < 0.01) and psychopathy (r = 0.25, p < 0.01) are both significantly correlated with PSMU, no statistically significant correlation between narcissism and PSMU (r = 0.04, p < 0.01) **Structural Equation Modeling** A positive significant path between psychopathy and PSMU (β = 0.17, p < 0.01)

Demircioğlu & Göncü Köse (2022)	Turkey, N = 547, 50% Female, Mean Age = 15.8	Cross-sectional	SMAS, SD3-T	**Bivariate Correlations** PSMU has significant positive correlations with all Dark Triad traits: narcissism ($r = 0.12$, $p < 0.01$), Machiavellianism ($r = 0.16$, $p < 0.01$), psychopathy ($r = 0.32$, $p < 0.01$) **Multiple Regression Analysis** Statistically significant path from psychopathy to PSMU ($\beta = 0.30$, $p < 0.001$)
Hussain, Wegmann, & Griffiths (2021)	Participant nationality unspecified, N = 555, 48% Female, Mean Age = 33.3	Cross-sectional	BSMAS, SD3	**Bivariate Correlations** Statistically significant correlation between the Dark Triad and PSMU, narcissism ($r = 0.29$, $p < 0.01$), Machiavellianism ($r = 0.34$, $p < 0.01$), psychopathy ($r = 0.35$, $p < 0.01$) **Structural Equation Modeling** Narcissism had a direct effect on PSMU ($\beta = 0.24$, $p < 0.001$)
Kircaburun, Demetrovics, & Tosuntaş (2018)	Turkey, N = 181, 64% Female, Mean Age = 22.1	Cross-sectional	SMDS, Dark Triad Dirty Dozen	**Multivariate Analysis of Covariance** PSMU individuals scored higher on all Dark Triad traits compared with the non-disordered users, narcissism ($F = 39.33$, $\eta2 = 0.05$, $p < 0.001$), Machiavellianism ($F = 32.61$, $\eta2 = 0.04$, $p < 0.001$), psychopathy ($F = 16.07$, $\eta2 = 0.02$, $p < 0.001$) **Bivariate Correlations** PSMU has significant positive correlations with all Dark Triad traits: narcissism ($r = 0.28$, $p < 0.001$), Machiavellianism ($r = 0.19$, $p < 0.001$), psychopathy ($r = 0.10$, $p < 0.01$) **Structural Equation Modeling** Significant direct effects to PSMU of narcissism ($\beta = 0.30$, $p < 0.001$) and Machiavellianism ($\beta = 0.23$, $p < 0.05$)

Kircaburun, Jonason, & Griffiths (2018)	Turkey, N = 761, 64% Female, Mean Age = 20.7	Cross-sectional	BSMAS, Dark Triad Dirty Dozen	**Bivariate Correlations** PSMU has significant positive correlations with all Dark Triad traits: narcissism ($r = 0.22$, $p < 0.001$), Machiavellianism ($r = 0.23$, $p < 0.001$), psychopathy ($r = 0.15$, $p < 0.001$) **Multiple Regression Analysis** Dark Triad traits showed weak direct effect on PSMU: narcissism ($\beta = 0.06$, $p < 0.01$), Machiavellianism ($\beta = 0.05$, $p < 0.01$), psychopathy ($\beta = 0.02$, $p < 0.01$)
Kumpasoğlu et al. (2021)	Turkey, N = 375, 60% Female, Mean Age = 24.0	Cross-sectional	SMAS, SD3	**Bivariate Correlations** Statistically significant positive correlations with Machiavellianism ($r = 0.13$, $p < 0.05$) and psychopathy ($r = 0.13$, $p < 0.05$)
Mehmet Emin Turan et al. (2023)	Turkey, N = 497, 60% Female, Mean Age = 15.0	Cross-sectional	SMAS-A, SD3-T	**Bivariate Correlations** PSMU has significant positive correlations with all Dark Triad traits: narcissism ($r = .30$, $p < 0.01$), Machiavellianism ($r = .35$, $p < 0.01$), psychopathy ($r = .40$, $p < 0.01$)
Necula (2020)	Romania, N = 290, 79% Female, Mean Age = 22.5	Cross-sectional	BSMAS, SD3	**Bivariate Correlations** PSMU has significant positive correlations with all Dark Triad traits ($r = 0.17$, $p < 0.01$): narcissism ($r = .08$, $p < 0.01$), Machiavellianism ($r = 0.14$, $p < 0.01$), psychopathy ($r = 0.18$, $p < 0.01$)
Nikbin et al. (2022)	Iran, N = 315, 80% Female	Cross-sectional	BFAS adapted for Instagram, Dark Triad Dirty Dozen	**Structural Equation Modeling** Narcissism ($\beta = 0.23$, $p < 0.01$), Machiavellianism ($\beta = 0.18$, $p < 0.01$), and Psychopathy ($\beta = 0.15$, $p < 0.01$) have a positive effect on problematic Instagram use
Siah et al. (2021)	Malaysia, N = 219, 58% Female, Mean Age = 21.5	Cross-sectional	BSMAS, SD3	**Structural Equation Modeling** Only narcissism found to be positively associated with PSMU ($\beta = 0.17$, $p < 0.034$)

Tang, Reer, & Quandt (2022)	Germany, N = 1865, 52% Female, Mean Age = 27.7	Cross-sectional	Internet Gaming Disorder Scale adapted for social media, Dark Triad Dirty Dozen	**Parallel Mediation Analysis** The direct effect of narcissism (c` = 0.07, lower limit confidence interval (LLCI) = 0.05, upper limit confidence interval (ULCI) = 0.09), Machiavellianism (c` = 0.14, LLCI = 0.13, ULCI = 0.16), and psychopathy (c` = 0.16, LLCI = 0.14, ULCI = 0.18) to PSMU was significant

Table 1. Studies on PSMU and the Dark Triad

3.2: Main Findings

General findings suggest a positive correlation between the Dark Triad traits and PSMU, as well as a statistically significant path from the Dark Triad traits to PSMU. However, the association between the individual Dark Triad traits and PSMU has inconsistencies across studies.

3.2.1: Narcissism and PSMU

Eight studies reported a statistically significant positive correlation between narcissism and PSMU, with effect sizes ranging from a small correlation (r = 0.06; Andreassen et al., 2017) to moderate correlation (r = 0.30; Mehmet Emin Turan et al., 2023). Two studies did not find a statistically significant correlation at the bivariate level. Five studies found a statistically significant path from narcissism to general PSMU ranging from β = 0.06 (Kircaburun, Jonason, et al., 2018) to β = 0.30 (Kircaburun, Demetrovics, et al., 2018), and one study found a statistically significant path from narcissism to problematic Instagram use with β = 0.23 (Nikbin et al., 2022). Three studies found no statistically significant path from narcissism to PSMU.

3.2.2: Machiavellianism and PSMU

Nine studies reported a statistically significant positive correlation between Machiavellianism and PSMU, with effect sizes ranging from a small correlation (r = 0.13; Kumpasoğlu et al., 2021) to moderate correlation (r = 0.38; Chung et al., 2019). Two studies found a statistically significant path from Machiavellianism to general PSMU ranging from β = 0.05 (Kircaburun, Jonason, et al., 2018) to β = 0.35 (Mehmet Emin Turan et al., 2023) and one study found a statistically significant path from

Machiavellianism to problematic Instagram use with β = 0.18 (Nikbin et al., 2022). Three studies found no statistically significant path from Machiavellianism to PSMU.

3.2.3: Psychopathy and PSMU

Nine studies reported a statistically significant positive correlation between psychopathy and PSMU, with effect sizes ranging from a small correlation (r = 0.10; Kircaburun, Demetrovics, et al., 2018) to moderate correlation (r = 0.48; Chung et al., 2019). Four studies found a statistically significant path from psychopathy to general PSMU ranging from β = 0.02 (Kircaburun, Jonason, et al., 2018) to β = 0.30 (Demircioğlu & Göncü-Köse, 2022) and one study found a statistically significant path from psychopathy to problematic Instagram use with β = 0.15 (Nikbin et al., 2022). Three studies found no statistically significant path from psychopathy to PSMU.

Discussion and Conclusions

Results indicate that a positive and statistically significant association exists between the Dark Triad and PSMU. While each trait positively correlates with PSMU, there is variability in the strength of associations and pathways among individual traits. Narcissism showed the weakest correlation out of the three traits with small-to-moderate correlations with PSMU, with some studies reporting significant direct paths. Machiavellianism demonstrated moderate correlations with PSMU but yielded mixed results in its direct paths. Psychopathy exhibited the strongest and most consistent association with PSMU, both in correlation analyses and direct pathways.

The relationship between narcissism and PSMU found in the present review aligns with existing literature linking narcissistic traits to a high level of social media engagement, particularly in behaviors such as self-presentation and seeking admiration (Andreassen et al., 2017; Kircaburun, Demetrovics, et al., 2018; Nikbin et al., 2022). Narcissism's core characteristics—such as a need for admiration, status-seeking, and attention—appear to be well-served by the social media environment, where users can control their self-image and obtain instant feedback. Individuals driven by a strong need for self-enhancement and a lack of empathy may struggle more to control their social media use (Kircaburun, Demetrovics, et al., 2018). However, the inconsistency in the direct path analyses suggests that while narcissists may frequently use social media, the degree to which their use becomes problematic varies based on other individual and contextual factors. For instance, moderating and mediating variables, such as life satisfaction (Kumpasoğlu et al., 2021), may influence this relationship. Inconsistencies in findings can be explained by variations in narcissism subtypes, specifically grandiose versus vulnerable narcissism (Casale & Banchi, 2020).

Machiavellianism showed a significant association with PSMU. This finding is consistent with prior studies that suggest individuals high in Machiavellianism are inclined toward strategic, manipulative uses of social media (Abell & Brewer, 2014; Chung et al., 2019; Demircioğlu & Göncü Köse, 2018). However, the mixed results in direct path analyses indicate that while Machiavellians may engage in specific types of problematic behavior—such as manipulating social connections or spreading misinformation—their engagement may not consistently lead to addiction-like use. Moral disengagement

characteristic of Machiavellianism predicted antisocial behavior online, such as cyberbullying and cybertrolling (Kircaburun, Jonason, et al., 2018). This mediating pathway suggests that PSMU may partially arise from a cycle of manipulation and reinforcement within online environments. Social media's unique capacity for anonymous or indirect manipulation likely appeals to Machiavellians, but they may prioritize goal-oriented behavior rather than extensive, dependent use.

Psychopathy exhibited the strongest and most consistent association with PSMU across studies. Psychopathic individuals may be drawn to the immediate gratification and minimal accountability provided by social media platforms, which align with their tendency toward impulsive and sensation-seeking behaviors. Psychopathic traits, such as impulsivity, lack of self-control, lack of empathy, and antisocial behavior, can manifest in social media environments as excessive or aggressive use (Chung et al., 2019; Demircioğlu & Göncü-Köse, 2022). Psychopathy is also significantly linked to harmful social media behaviors, displaying positive associations with actions such as cyberbullying (Demircioğlu & Göncü-Köse, 2022; Kircaburun, Jonason, et al., 2018).

These findings contribute to the literature on PSMU by demonstrating that the Dark Triad traits, while each correlated with PSMU, exhibit unique patterns in how they influence problematic usage. This variability suggests that problematic social media use is not monolithic; rather, it encompasses different behavioral manifestations aligned with specific personality traits. The identification of the Dark Triad traits as predictors of PSMU holds practical implications for interventions aimed at mitigating problematic use. For instance, educational initiatives could target young social media users with psychoeducation about self-regulation and awareness of compulsive or impulsive

tendencies. Moreover, social media platforms themselves might integrate features to prompt reflection on social media use behaviors, such as providing periodic reminders of usage time.

While the present review provides valuable insights, it has limitations that should be acknowledged. First, all of the studies used to examine the relationship between the Dark Triad and PSMU followed a cross-sectional design. Without longitudinal data, it becomes challenging to track the development and stability of the study variables, determine causal relationships, and ensure the generalizability of findings. Secondly, the studies included in this review relied on self-report measures, which can be subject to bias. Participants may overestimate or underestimate their behaviors and traits, leading to inaccuracies in the data and potentially skewing the correlations observed. Third, most research has focused on European samples, overlooking other significant populations, such as in the United States. This focus restricts the findings' global applicability and creates gaps in understanding the cross-cultural impacts of the study design. Finally, PSMU is yet to receive formal classification. This leads to significant variability in measurement approaches and operational definitions of PSMU across studies, creating challenges in assessment, which may account for some inconsistencies in the results. Standardizing PSMU measures in future research would enhance reliability across studies.

Future research should employ longitudinal study designs, allowing the opportunity to track Dark Triad and PSMU over time, providing more robust conclusions about how Dark Triad traits might influence, or be influenced by, social media habits and potential problematic use. Future research should also expand beyond primarily European

samples. This could improve the global applicability of findings and help identify cultural moderators that could affect these relationships.

In the present review PSMU, the Dark Triad, and the relationship between the two have been addressed. The findings suggest that each Dark Triad trait has a significant association with PSMU, highlighting distinct pathways and potential mechanisms that link these personality dimensions to problematic behaviors on social media. This review underscores the importance of considering personality traits in the assessment and treatment of PSMU. Given the potential mental health and social consequences of PSMU, particularly among individuals with high levels of Dark Triad traits, addressing these underlying personality factors could lead to more effective prevention and intervention efforts. This work contributes to a growing body of literature aimed at understanding the psychological drivers of PSMU and prompts future research on the topic.

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