



Toward the classification of social media use disorder: Clinical characterization and proposed diagnostic criteria[☆]

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ABSTRACT

Empirical studies and theoretical models highlight that problematic use of social media can lead to significant functional impairments in several domains, such as social, relational, occupational, and psychological functioning, as well as physical health. However, social media use disorder is not currently recognized as an official disorder in major diagnostic systems, limiting comparability among studies, precise prevalence estimation, and ad-hoc preventive and treatment program development. The present work aims to classify social media use disorder as a pathological condition sharing main mechanisms and maladaptive patterns with addictive behaviors. We discuss diagnostic criteria for social media use disorder by integrating peculiar features of this maladaptive behavior with criteria for substance use disorders and behavioral addictions from major diagnostic systems (i.e., DSM-5 and ICD-11). Moreover, we address some controversies related to the classification of social media use disorder as a behavioral addiction and highlight literature findings indicating social media use disorder shares main alterations in mechanisms and processes characterizing addiction (i.e., maladaptive activation of reward systems and impairment of inhibitory control mechanisms). Despite the lack of studies including clinical populations and the need for future research to validate the proposed criteria and refine knowledge of the mechanisms underlying this condition, our work provides a structured framework for classifying and identifying social media use disorder.

1. Introduction

The problematic, excessive use of social media applications (PSMU) or Social Media Use Disorder (SMUD) has been intensively discussed as a potential disorder within the addiction framework. The discussion is based on empirical studies and theoretical considerations, as well as on a growing number of individuals experiencing loss of control and significant impairments due to the use of social media (see Moretta et al., 2022). Prevalences estimate a variance between 5 % and 25 % (Cheng et al., 2021), however, this variance may also reflect cultural differences, for example between individualist and collectivist regions, on the

one hand, but also differences in classification criteria and diagnostic instruments (Brand et al., 2024). The definition by Andreassen (2015) is often used, which addresses the strong motivational drive to use social media and “devote so much time and effort” (p. 175) that individuals experience negative consequences in everyday life. Focusing on these consequences, PSMU is related to psychological distress and insomnia (Chen et al., 2020; Lin et al., 2021; Marino et al., 2022), social and emotional impairments (D’Arienzo, Boursier, & Griffiths, 2019; Elhai, Yang, & Montag, 2021; Wegmann & Brand, 2019), as well as psychopathological symptoms such as ADHD, anxiety, and depression (e.g., Wang, Yang, & Elhai, 2022; Du et al., 2024; Boer et al., 2020). It

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highlights the need for a better understanding of mechanisms and processes of social media-related maladaptive behavior, particularly considering the debate as to whether it is a distinct disorder. The starting point for this consideration is still that significant problems related to the problematic use has not been included as an official disorder in classification systems such as the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5; [American Psychiatric Association, 2013](#)) and the International Classification of Diseases (11th revision; ICD-11; [World Health Organization, 2022](#)). However, this became a priority given the number of scientific papers documenting clinically significant social media use-related impairments (e.g., [Pagano, Bacaro, & Crocetti, 2023](#); [Huang, 2022](#); [Cunningham, Hudson, & Harkness, 2021](#); [Liu, Kirschner, & Karpinski, 2017](#); [Oberst et al., 2017](#)).

The present work aims to further advance the classification of SMUD as a pathological condition sharing main mechanisms and maladaptive patterns with addictive behaviors. In this context, we will use the label “SMUD” and not “PSMU”, as we aim to define a diagnostic condition characterized by clinically significant symptoms that are distinguishable from behavioral patterns related to intense (non-pathological) social media use. However, when referring to studies that specifically investigated this potentially pathological behavior through self-report questionnaires, which may include several false positives, we will continue to use the “softer” label “PSMU”. Moreover, we also use the term “social media” instead of “social network”. Even though both terms are often used interchangeably, we would like to deliberately refer to the more global term to make it clear that we are explicitly talking about the wide range of social media platforms with possible addictive potential.

The potential diagnostic criteria for SMUD are based on the definition of substance use-, gambling, and gaming disorders in the DSM-5 (APA, 2013) and the ICD-11 ([World Health Organization, 2022](#)), as well as the scientific evidence related to some peculiar features of this condition. Furthermore, we consider recent issues raised in the scientific literature to specifically define SMUD and thus, distinguish between intensive (but non-pathological) and pathological social media use ([Castro-Calvo et al., 2021](#); [Cataldo et al., 2022](#)). As suggested by [Moretta et al. \(2022\)](#), we formulate diagnostic criteria through a combination of bottom-up and top-down processes. Specifically, it includes the integration of available empirical data (bottom-up approach) and diagnostic criteria for substance use disorders and behavioral addictions (top-down approach). Thereby, we deliberate the argument often proposed that SMUD cannot be classified as addictive behavior because it does not meet all the diagnostic criteria and exhibits unique and distinctive features (e.g., [Carbonell & Panova, 2017](#)). We would like to emphasize that this is true for most disorders classified under broader categories in diagnostic manuals. As reported, for example, in the DSM-5 (p. 483) regarding substance use disorders: *“For certain classes, some symptoms are less salient, and in a few instances not all symptoms apply (e.g., withdrawal symptoms are not specified for phencyclidine use disorder [...]).”* Similarly, in SMUD, some symptoms traditionally associated with substance use disorders, such as tolerance and withdrawal, are less prominent. As for distinctive features, the DSM-5, for instance, introduced original diagnostic criteria for gambling disorder that characterize its symptomatology but do not apply to all other addictions (e.g., *“after losing money gambling, often returns another day to get even”*) ([American Psychiatric Association, 2013](#)). This distinctive approach can therefore also be applied to SMUD. For what concern the argumentation that SMUD can be a consequence or a symptom of other more primary disorders (e.g., psychological distress), it has been shown that symptoms of PSMU are stable cross-sectionally over time, and are associated with, yet distinct, from, depression, anxiety and stress ([Tullett-Prado et al., 2023](#)). Nevertheless, it is important to clarify that when it comes to diagnosing SMUD as disorder in its own right, it should be the main clinical issue, similar to other addictive behaviors. Future studies aimed at testing the construct validity and specificity of the present proposed diagnostic criteria should further investigate this point.

We also believe that for classifying SMUD as addictive behavior,

additional aspects must be present, including main alterations in mechanisms and processes characterizing addiction rather than other pathological conditions representing the bottom-up approach. In this view, the DSM-5 (p. 481) reported that *“All drugs that are taken in excess have in common direct activation of the brain reward system, which is involved in the reinforcement of behaviors and the production of memories. They produce such an intense activation of the reward system that normal activities may be neglected. [...] The pharmacological mechanisms by which each class of drugs produces reward are different, but the drugs typically activate the system and produce feelings of pleasure, often referred to as a ‘‘high.’’ Furthermore, individuals with lower levels of self-control, which may reflect impairments of brain inhibitory mechanisms, may be particularly predisposed to develop substance use disorders [...]”*.

Summarized, we 1) propose diagnostic criteria for SMUD, and 2) summarize evidence on similarities (and possible differences) in the alterations of the main mechanisms and processes based on two further main questions: Does social media use activate reward systems in a way comparable to the activation caused by drugs of abuse? And are individuals with lower levels of self-control, which may reflect impairments of brain inhibitory mechanisms, particularly predisposed to develop SMUD?

2. Highlighting proposed diagnostic criteria for social media use disorders

First, we would like to emphasize that the definition of diagnostic criteria for SMUD is not intended to limit scientific research within the Research Domain Criteria initiative (RDoC; [Cuthbert, 2015](#)). We acknowledge the clinical importance of considering psychopathological conditions in terms of dysregulation in granular mechanisms underlying the continuum from adaptive to maladaptive behavior and believe that future studies adopting this approach are needed to clarify some evidence relating PSMU to other pathological conditions (e.g., ADHD, depression; [Werling et al., 2022](#); [Cunningham et al., 2021](#)). However, in this specific case, we believe that identifying diagnostic criteria favors standardization across studies, even from a dimensional perspective, comparison of findings and, in turn, increasing understanding and accuracy of results. Moreover, we recognize the importance of identifying an accurate minimum number of symptoms for diagnosing SMUD. This would improve prevalence estimates and mistaking risky conditions for pathological ones ([Castro-Calvo et al., 2021](#)). At the same time, identifying at-risk populations would facilitate the implementation of potential preventive interventions.

When classifying SMUD, it is worthwhile to consider global criteria for addictive behaviors indicating a top-down process which has been proposed for the “role models” of behavioral addictions: gambling disorder and gaming disorder. In the DSM-5, nine criteria are mentioned (e.g., preoccupation, withdrawal, tolerance, inability to reduce, loss of interests, continuation, deception, escapism, loss of relationships and other opportunities) ([American Psychiatric Association, 2013](#)). In the ICD-11, the disorders are defined by loss of control, increasing priority, continuation/escalation, and additionally experiencing significant impairments and marked distress ([World Health Organization, 2022](#)). However, when we keep following our argumentation of the specificity of SMUD and current empirical evidence, representing the interplay of bottom-up and top-down, we have the impression that specific diagnostic criteria must be emphasized and appear to play a decisive role, which could lead to possible deviations from previous approaches (see [Table 1](#)).

To our knowledge, only two studies directly investigated specific SM use-related symptoms and their centrality to PSMU ([Li et al., 2024](#); [Svicher, Fioravanti, & Casale 2021](#)). Despite considering an initially different pool of potential symptoms, the network analysis of both studies showed difficulties in controlling social media use describing loss of control as one of the central symptoms (see [Table 1](#), Criterion 1). [Svicher et al. \(2021\)](#) argued that the high centrality of symptoms related

Table 1
The proposed diagnostic criteria for SMUD.

Persistent and recurrent social media use leading to clinically significant impairment or distress, as indicated by exhibiting criteria of the following in a 12-month period:	Adapted from:
1. Impaired control over social media use (e.g. onset, frequency, intensity, duration, termination, context);	ICD-11
2. Important social, occupational, or recreational offline activities are given up or reduced because of social media use;	DSM-5
3. Failing to fulfill major role obligations at work, school, or home because of social media use;	DSM-5 & ICD-11
4. Persistent or recurrent physical, social, interpersonal, and/or psychological problems that are likely to have been caused or exacerbated by social media;	DSM-5 & ICD-11
5. Craving or a strong desire or urge to use social media;	DSM-5
6. Preferring online social interaction, communication and system features over the real life at the point of experiencing social overload, communication overload, and system feature overload;	Specific
7. State-FoMO: fears, worries, and anxieties concerning being out of something that occurs on social media.	Specific

“Specific” stands for the criterion that emerged from the literature in the field, specifically characterizing SMUD that are not shared as a diagnostic criterion with other addictive behaviors included in the diagnostic manuals.

to deficient self-regulation of social media use suggests similarities with substance use disorders in alterations to the reflective-inhibitory prefrontal brain system implicated in the abilities to adaptively interrupt behavioral responses (He, Turel, & Bechara, 2017). Moreover, there are several other previous pieces of evidence highlighting the importance of poor control of social media use in PSMU (e.g., Brevers & Turel, 2019; Du, van Koningsbruggen, & Kerkhof, 2018; Meier, Reinecke, & Meltzer, 2016; Hofmann et al., 2012).

With respect to Criteria 2, 3, and 4 (see Table 1), there is mounting evidence showing a link between PSMU and negative health consequences (e.g., Cullen et al., 2024; Paakkari et al., 2021), with recent meta-analyses and reviews papers reporting positive relationships of PSMU with depression, loneliness, anxiety, sleep problems, and a negative link with well-being (e.g., Ahmed et al., 2024; Chen et al., 2024; Leow et al., 2023; O’Day & Heimberg, 2021; Cunningham et al., 2021) as well as school achievement (Salari et al., 2025). Studies have also shown the negative effect of PSMU on work performance (e.g., Moqbel, & Kock, 2018). Overall, we believe that including criteria related to the potential functional impairment and marked distress is of fundamental importance to avoid confusing non-pathological behaviors with maladaptive behaviors underlying a psychopathological condition.

Craving as a strong desire and irresistible urge to show a specific behavior or drug intake is described as a criterion that improves the validity of DSM-5-based diagnoses of substance use disorder (see Shmulewitz et al., 2023). The I-PACE model referred to craving as one of the key cognitive-affective responses that by interacting with predisposing variables leads to continued social media use despite negative consequences (Brand et al., 2019; Brand, Young, Laier, Wölfling, & Potenza, 2016). Several studies highlight its significance as a key factor in PSMU (e.g., Wegmann et al., 2021; Moretta & Buodo, 2021a; Leng et al., 2019). In this context, craving is intended as an intense desire or urge to access/use social media that may occur at any time but is more likely when exposed to social media-related cues (i.e., cue-reactivity; e.g., Moretta & Buodo, 2021a). To avoid assessing a symptom of common (non-pathological) motivations triggered by feeling bored (see Kolas & von Mühlengen, 2024), the quality of craving should be evaluated by asking if there has ever been a time when strong urges to use social media were experienced to the point of being unable to think of anything else. At the same time, it is important to bear in mind that craving is perhaps not a classic symptom, but rather a mechanism of addiction development or clinical feature (Brand et al., 2020). Nevertheless, the identification of this strong urge can provide an opportunity to obtain indications of a loss of control and to differentiate between intensive and pathological behavior.

The study by Svicher et al., (2021) was the only one that included preferring online social interaction over face-to-face communication in the initial pool of potential symptoms of PSMU. The authors found a high centrality of the preference for online social interaction (see Table 1, Criterion 6) that was strongly related to the perception of them as more comfortable. Thus, this symptom, since its initial formulations (Caplan, 2003), has garnered significant attention as it highlights a peculiar feature of SMUD, which is the mediation between psychological distress and negative outcomes of social media use. It may represent a predisposing characteristic or a central symptom that manifests itself in particular due to a certain vulnerability in the course of the pathologization of the behavior. Nonetheless, studies have consistently supported its central role in PSMU (e.g., Fioravanti et al., 2020; Moretta & Buodo, 2018; Chung, 2013) and this might still be relevant as shown in current studies with adolescent and student samples (e.g., van Duin, Heinz, & Willems, 2021; Mikuška et al., 2020). And even if the binary distinction between online and offline communication as part of POSI does not mirror everyday life communication behavior, we would like to emphasize that we still have the impression that both types of social exchanges require different (social) challenges, which is related to an increased risk of PSMU. Moreover, we acknowledge that preferring online social interaction might have a different value in SMUD depending on the type of social media and social-networking platform. Because the main aspect of this criterion is preferring online activities/features than real-offline ones, social interaction can be considered an example of this, together with communication and system features. These social media-related activities would trigger social media flow and immersion into the online world vs. the offline one, leading to SMUD (e.g., Brailovskaia & Teichert, 2020; for a metaanalysis see Tyrväinen et al., 2025).

Similarly, only the study by Li et al., (2024) included state-Fear of Missing Out (FoMO) in the initial pool of potential symptoms of PSMU. The authors found state-FoMO (see Table 1, Criterion 7) as one of the core co-occurring symptoms in PSMU, together with difficulties in controlling social media use and the intensity and engagement of use. Since its first characterization as “[...] a pervasive apprehension that others might be having rewarding experiences from which one is absent [...]” (Przybylski et al., 2013, p. 1842), FoMO has been considered an important factor contributing to PSMU (e.g., Fioravanti et al., 2021; Casale, Rugai, & Fioravanti, 2018; Wegmann et al., 2017) and suggested as a relevant dimension in the evaluation of SMUD symptoms (Fioravanti et al., 2021). More recently, FoMO has been described as a two-dimensional structure (i.e., trait-FoMO and state-FoMO), with the state-FoMO defined as a distinct cognitive concern about missing out on activities that occur online that leads to PSMU (Wegmann et al., 2017).

Of note, both POSI and FoMO have been described as linked to other addictive behaviors or SUDs, e.g., compulsive buying (Kumar & Kumar, 2024); gaming disorder (e.g., Männikkö et al., 2015; Yang et al., 2021); alcohol-related problems (Ayala Guzman et al., 2025; Riordan et al., 2023). However, both these factors have been shown to have a prominent role as symptoms of SMUD (e.g., Balcerowska & Brailovskaia, 2024). The term “specific criterion” in this context is intended to highlight that it is not a criterion used in current diagnostic manuals for other addictive behaviors or SUDs, but for SMUD, it can be used as a criterion or additional clinical feature given its significant role in this specific type of behavior.

The last two criteria (but also choices among which of the existing criteria was appropriate in this context) reflect the bottom-up process we integrate into the top-down one. The first also outlines the lack of further clinical evidence. In the explanation of the more global as well as specific characteristics of SMUD, it becomes clear that central aspects appear to be the loss of control and the significant impairments in everyday life, which also speaks for proximity to the ICD-11. At the same time, we consider a minimum number of the symptoms mentioned to be necessary, including at least one symptom related to the functional impairment related to social media usage (see Table 1, Criteria 2, 3, and

4). We argue that this approach should avoid false positives.

We would also like to comment those criteria which are mentioned in the ICD-11 and DSM-5, but not explicitly included in this approach (e.g., continuation/escalation, increasing priority). It does not automatically mean that we do not see the relevance, but we have the impression that the evidence is more ambiguous. For example, in a study of individuals with SMUD classified by a structural diagnostic interview based on the DSM-5 criteria adapted for SMUD, individuals also provided information on whether the ICD-11 criteria applied. While the criteria of loss of control and marked distress were met very clear, this was much less the case for continuation/escalation and increasing priority (Wegmann et al., 2023). In addition, both criteria are closely linked to the DSM-5 criteria continuation and tolerance. While Tullett-Prado et al (2023) showed a high centrality explaining symptom severity, others, i.e., the only two studies to our knowledge investigating specific social media-related symptoms centrality, found difficulties in controlling social media use as the central symptom of PSMU (Li et al., 2024; Svicher et al., 2021), along with POSI (Svicher et al., 2021) and state FoMO (Li et al., 2024), which have been extensively associated with PSMU. In addition, the question arises as to how tolerance could be characterized: Increasing usage time or being online longer than intended can be considered as indicator for loss of control; being online more often could be the result of craving. So perhaps the development of tolerance in SMUD could be understood as that rewarding experiences while using social media occur later in the course of addiction process. It means that tolerance should be examined in particular with regard to reward, but also with regard to the distinction of loss of control and craving. Going a step further, the discussion of specific symptoms for gaming and buying-shopping disorder in Delphi studies also conclude that tolerance does not seem to be a key criterion, maybe an additional clinical feature (Castro-Calvo et al., 2021; Müller et al., 2021). Due to the unclear findings to date, we therefore do not include further criteria, but of course, future studies are needed to specify the similarities and distinctions between the DSM-5 and ICD-11 criteria for addictive behavior, to test our predictions of social media-related specific features, and eventually to adapt or refine the current proposal to findings.

3. Does social media use activate reward systems in a way comparable to the activation caused by drugs of abuse?

As already mentioned, craving reflects a process and at the same time the special nature of the reward system is also emphasized in the diagnosis (see above). With this research question, we aim to address whether the use of social media activates reward systems in a manner similar to how drugs of abuse trigger these mechanisms (for an overview see Wadsley & Ihssen, 2023). The activation of the reward system involving the ventral and dorsal striatum and other limbic structures illustrates a key component in addiction research why individuals continue to use drugs or engage in dysfunctional behavior, even though this is associated with negative consequences (e.g., Brand et al., 2016; Fauth-Bühler, Mann, & Potenza, 2017). This is also emphasized in theoretical models from substance-related research such as the Reward Deficiency Syndrome (Blum et al., 1996) and the Incentive-Sensitization Theory by Robinson and Berridge (1993; 2001), as well as theoretical models that are primarily concerned with online-specific behaviors such as the I-PACE Model (Brand et al., 2019; Brand, Young, Laier, Wölfling, & Potenza, 2016). Considering that online behavior does not have a direct physiological impact compared to drug intake, in a recent perspective, Brand (2022) argues that internet applications could deliver pleasure and possibilities of mood management which might affect the reward's brain system resulting in positive and negative reinforcement processes respectively. In addition, the relief of negative emotions complements the reinforcement process illustrating the interplay of reward and relief when using specific online applications. Within this perspective, Brand (2022) outlines that reward-oriented components and reinforcement processes are the foundation for the

manifestation of dysfunctional behavior. Empirical studies that take up this basic theoretical assumption address both the behavioral component and the neuropsychological component. For example, physiological and behavioral data illustrate the involvement of the direct activation of the brain reward system by social media (Moretta et al., 2023; Morris et al., 2023), which is involved in the reinforcement of behaviors and the production of memories (e.g., Moretta et al., 2023; Moretta & Buodo, 2021a; Lindström et al., 2021; Ihssen & Wadsley, 2021). Moreover, it has been shown that social media-related cues are linked to social rewards such as receiving "Likes" or gaining a positive social reputation (Meshi et al., 2013; Sherman et al., 2017; Sherman et al., 2018). Considering the subjective rewarding experiences, Wegmann et al. (2025) showed that individuals with PSMU experienced the highest gratification and compensation due to the use of specific applications compared to individuals with risky and non-problematic social media use. Moreover, additional studies indicate that reward sensitivity predicted greater symptom severity, which has been linked to gratification as well as other constructs related to wanting and liking (Wadsley & Ihssen, 2022; Ihssen & Wadsley, 2021). Wrapping up, there is emerging evidence that social media use is directly related to the activation of the reward system, similar to what has been found for substances of abuse. That said, we would like to draw attention to the media-specific, reward-associated characteristics of social media itself. The design of social media aims to retain users for as long as possible. It can be assumed that certain features of social media (e.g. limited availability of information –i.e., stories-, personalized content, endless scrolling, push notifications, Like buttons) have been carefully designed to maximize their ability to activate the human reward system or trigger specific states such as FoMO (see for example Flayelle et al., 2023). For future research, it will be particularly important to examine how the activation of the reward system is experienced, the long-term psychobiological and psychological changes that can be observed in the reward system, which may lead to maladaptive social media-related behaviors, and the role social media features play in the interplay of underlying mechanisms and rewarding experiences.

4. Are individuals with lower levels of self-control, which may reflect impairments of brain inhibitory mechanisms, particularly predisposed to develop SMUD?

Besides rewarding mechanisms, deficits in executive functions and more importantly impairments in inhibitory control as key processes of addiction development are highlighted in dual-process theories as well as further (neuroscientific) theories of addiction (for an overview see Brand et al., 2021). Similarly, the I-PACE model also emphasizes the role of executive functioning in SMUD as well as generalized and specific cue-induced defective inhibitory control (Brand et al., 2019). The empirical findings addressing deficits in self-control and inhibitory mechanisms in substance use disorder seem to be robust (e.g., Lee, Hoppenbrouwers, & Franken, 2019; Zilverstand et al., 2018). Systematic reviews and meta-analyses also illustrate the link between executive functions and inhibitory control and higher symptom severity in internet-related disorders (e.g., Argyriou, Davison, & Lee, 2017; Ioannidis et al., 2019). Moreover, Müller et al. (in press) outline that individuals with pathological internet use showed deficits in executive functions and inhibitory control compared to individuals with risky and non-problematic use. Focusing on the use of social media separately, there are initial indications that the differences in individuals with PSMU compared to non-problematic use are ambiguous (Müller et al., in press). Studies using self-report measures have highlighted a significant association between impaired executive functions and the severity of SMUD symptoms (Müller et al., 2021; Soares et al., 2023). However, other studies including behavioral measures (e.g., reaction times to Go trials; accuracy; advantageous decisions) found contrasting results. Specifically, some studies showed no differences between excessive users and controls during a Go/NoGo task (Gao et al. 2019) and an Iowa

Gambling Task (Wegmann et al. 2021) including social-media-related and neutral cues. Conversely, Moretta & Buodo (2021b) showed that problematic users are less accurate on both Go and NoGo trials than non-problematic users during an emotional Go/NoGo task (including social media-related-, emotional i.e., pleasant and unpleasant, and neutral cues). Interestingly, at the physiological level results on inhibition capacities in PSMU seem to converge, with findings highlighting defective inhibitory control in the problematic use of the internet and social media (Gao et al., 2019; Moretta & Buodo, 2021b; Moretta et al., 2019; Morris et al., 2023).

Summarized, the empirical evidence related to behavioral data seems to be heterogeneous. This could be the result of the lack of standardized diagnostics and different adopted tasks. On the other hand, it could also be that deficits in executive functions and inhibitory control in SMUD may only become apparent when the effort required to suppress inappropriate responses surpasses a specific threshold. This occurs, for instance, when prepotent responses need to be inhibited according to complex rules or within emotionally charged contexts (Moretta et al., 2021b; 2019). For example, the dominant prompting nature of social media through push notifications and emotional and personalized novel content could play an important role in affecting the self-control in social media users with problematic behavior. Moreover, the fact that all studies found at the physiological level reduced inhibitory capacities in PSMU may suggest that cortical activity may be a more sensitive measure than behavioral responses to identify abnormal inhibitory control processes in SMUD. Indeed, these measures may reflect the interaction between inhibition and unaware motivational and attentional processes that are not discernible at the behavioral level. These results highlight the importance of employing psychophysiological measures in conjunction with behavioral ones for a better understanding of abnormal patterns of inhibitory processes in SMUD. Going a step further and considering the interplay of predisposing variables, and affective and cognitive mechanisms suggested in theoretical considerations, it might be worthwhile to investigate what happens when inhibitory control is repeatedly impaired and what additional processes are involved. This includes the hypothesis that specific predispositions such as basic inhibitory difficulties or higher impulsivity are risk factors. Combined with repeated exposures, they could promote the development of a “real” deficit that leads to a complete loss of control over adaptive behavior (see also Brand et al., 2019). However, cross-sectional studies may not be sufficient at this point and instead, longitudinal studies should be implemented to more clearly address the development and manifestation of behavior, taking into account the influence and possible changes in affective and cognitive characteristics. This seems to be in line with substance-related disorders illustrating the need to investigate long-term development and effects regarding the relationship between substance use and executive functions and their potential impact as a vulnerability factor on addictive behaviors (Kräplin et al., 2022).

5. Future perspective and conclusions

Is PSMU often flippanantly labeled as addictive behavior rather than an overrated “bad” behavior compared to “real” addictions such as gambling disorder or substance abuse? When being honest, this question always hovers over this discussion. Here, we aim to present a preliminary attempt to specify diagnostic criteria for SMUD providing a framework for its clinical classification and inspiring future research. The combination of a bottom-up, empirical-driven process with a top-down process based on global diagnostic criteria could provide insights for better understanding and identifying the pathology of this behavior in its specificity. However, it becomes obvious that in addition to the consideration of classic symptoms, the understanding of underlying mechanisms also appears to be relevant for the identification of a pathology. Furthermore, we suspect that consideration of the environment in which the behavior takes place, i.e. the social media-specific

characteristics (e.g., Rozgonjuk et al., 2020; Rozgonjuk et al., 2021), should also play an important role in the manifestation of the behavior and the question of intensive versus addictive use. We encourage further studies and clinical work to test and eventually review the present criteria, highlighting potential limitations, or confirming their accuracy. A significant limitation of our work is the fact that the current literature, which constitutes the basis of our proposal, lacks studies including clinical populations. Most reviewed research included general population samples, which limits the generalizability of findings to individuals with clinically significant symptoms of SMUD. Future studies involving clinical groups are important to validate the proposed criteria and refine knowledge of the mechanisms underlying SMUD. These efforts will improve our understanding of this condition and support the development of ad-hoc prevention and treatment programs.

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Tania Moretta: Writing – original draft, Conceptualization. **Elisa Wegmann:** Writing – original draft, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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