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"I don't wanna lose control": The relationship between sense of control, mental health, and problematic social media use in German adolescents

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Highlights:

- Sense of control is negatively associated with symptoms of depression
- Sense of control is positively associated with life satisfaction
- PSMU partially mediates the negative relationship between sense of control and symptoms of depression
- PSMU partially mediates the positive relationship between sense of control and life satisfaction

Abstract

Mental health problems are increasing, especially among adolescents. Sense of control is considered as a cognitive predisposing variable influencing mental health. With the rise of social media, a new online space has emerged that has the potential to provide sense of control. However, sense of control might be reduced by social media use; and this might foster problematic social media use (PSMU). The present study aimed to investigate the role of sense of control for mental health, and potential mechanisms underlying the development of PSMU. Data from N = 154 (M_{age} = 15.2, SD_{age} = 1.48) adolescents from Germany were collected via an online survey. The findings revealed that sense of control was significantly negatively associated with symptoms of depression, and it was significantly positively associated with life satisfaction. A mediation analysis revealed that PSMU partially mediated the relationship between sense of control and symptoms of depression. Furthermore, PSMU partially mediated the relationship between sense of control and life satisfaction. The present results reveal potential mechanisms that might contribute to a decrease in mental health among adolescents. Potential ways that could foster adolescents' mental health are discussed.

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1. Introduction

According to the World Health Organization, mental health is a basic human right and contributes to individual, social, and economic growth (WHO, 2022). Contemporary theories of mental health adopt a dual-dimension perspective that distinguishes between a negative and a positive dimension, while acknowledging their interrelated nature (Keyes, 2005). The negative dimension refers to psychopathology and can be operationalized by symptoms of depression, anxiety, and stress (Lovibond & Lovibond, 1995). The positive dimension refers to overall subjective well-being and is often operationalized by resilience, optimism, and life satisfaction (Keyes, 2005). Adolescents' positive mental health supports the attainment of developmental milestones (i.e., the acquisition of independence; Parent, 2023) and educational achievements, which are crucial for mastering later economic and social responsibilities (McGorry et al., 2024).

However, in the past years, mental health problems have been rising, especially in young people (i.e., McGorry et al., 2024; Keyes & Platt, 2024). For example, rising rates of self-harm, suicide-related outcomes, and symptoms of anxiety and depression have been observed across Western countries (Daly, 2022; Keyes & Platt, 2024). Depression is one of the most common mental disorders among adolescents and contributes to substantial impairment in life (Daly, 2022). Symptoms of depression manifest in lowered mood, reduced energy, and reduced self-esteem, for instance (ICD-11; World Health Organization, 2018). Moreover, a high level of depression is typically accompanied by low life satisfaction (e.g., Koivumaa-Honkanen et al., 2004). This finding aligns with cognitive models of depression, which propose that individuals with a high level of depression are characterized by pervasive dissatisfaction with the self, environment, and future (Lewinsohn et al., 1991).

A cognitive factor influencing both depression and life satisfaction is a sense of control (Lachmann et al., 2009; Seligman, 1972). Sense of control refers to the subjective belief that life events are controllable through one's own behavior (Mirowsky, 1995). A high sense of control is associated with more health-related behavior (e.g., physical activity, Precht et al., 2023) and overall subjective well-being (Brailovskaia & Margraf, 2020, 2024; Keeton et al., 2008), while a low sense of control is associated with a high level of symptoms of depression (Steptoe et al., 2007), anxiety (Keeton et al., 2008), and overall mental distress (Chou & Chi, 2001). Furthermore, a low sense of control is associated with the desire to regain control (Southwick & Southwick, 2018).

With the rise of social media, a new online space has emerged that can foster a sense of control. The use of social media platforms (e.g., Instagram) is generally characterized by the possibility to connect with other members (Kuss & Griffiths, 2017). Beyond facilitating social interaction, social media allows young people to shape their digital presence. This high degree of control over online self-presentation (e.g., picture editing) can foster a sense of control (Parent, 2023; Throuvala et al., 2019; Van de Casteele, 2024; West et al., 2023, 2024). However, social media entails several risks to frustrate one's sense of control (Throuvala et al., 2019). Notably, online self-presentation is often motivated by the desire to be liked by one's peers (Throuvala et al., 2019). Yet online self-presentation is subject to prevailing social norms, leading to feelings of peer pressure to present oneself in a certain way (West et al., 2024). Thus, social media engagement can contribute to a loss of control (West et al., 2024; Scott et al., 2019). Brailovskaia and Margraf (2021) and Vally et al. (2023) reported that a low sense of control is associated with intensive social media use. In the short term, this strategy might be successful and could contribute to the impression of (re)gaining control. But in the longer-term, the control over one's own behavior can decrease (Brailovskaia, 2024; Brand et al., 2019). This decrease is a primary characteristic of problematic social media use (PMSU) (i.e., Montag et al., 2024). PSMU encompasses six typical addiction symptoms: salience (i.e., constant engagement with social media use), tolerance (i.e., increasing social media use time), mood changes (i.e., intensive social media use leads to an improvement in mood), withdrawal symptoms (i.e., anxiety in case of restricted social media use), craving (i.e., craving for social media use), and conflicts (i.e., interpersonal conflicts due to social media use) (Andreassen et al., 2017). PSMU is often conceptualized as a loss of control (Kuss & Griffiths, 2017). Moreover, PSMU is described as a risk factor for mental disorders in adolescents (Keyes & Platt, 2024; McGorry et al., 2024). Longitudinal studies show that PSMU is positively associated with psychopathology, including symptoms of depression, anxiety, and stress (Shannon et al., 2024), loneliness (Marttila et al., 2021), and suicidal ideations (Brailovskaia et al., 2020a). Its correlations with constructs of positive mental health, such as resilience (Shannon et al., 2024) and life satisfaction (Orben et al., 2022), are negative.

Against this background, it is important to identify predictors of PSMU to protect vulnerable individuals, to diminish risk for the development of PSMU, and to foster mental health. However, the role of sense of control and mental health has not been investigated in adolescents yet. Therefore, the first aim of the present study was to examine the relationship between sense of control, depression, and life satisfaction in adolescence.

Second, the mediating role of PSMU was investigated. The present study investigated the relationship in adolescents, a group that is particularly vulnerable to mental health problems and PSMU. Recent research indicated that low sense of control might be a risk factor for the development of PSMU. For example, Brailovskaia and Margraf (2021) reported that low sense of control is positively associated with PSMU, especially in individuals with anxiety symptoms. This result is consistent with the finding of Vally et al. (2023), who also report that low sense of control is linked to PSMU. Similarly, Brailovskaia and Margraf (2024) and He et al. (2024) revealed that sense of control was a protective factor for PSMU.

Building on this, the following hypotheses are formulated. Sense of control was expected to be negatively linked to symptoms of depression (Hypothesis 1a) and positively linked to life satisfaction (Hypothesis 1b). Furthermore, it was supposed that sense of control is negatively associated with PSMU (Hypothesis 2). Moreover, PSMU was presumed to be positively associated with symptoms of depression (Hypothesis 3a) and negatively associated with life satisfaction (Hypothesis 3b). Subsequently, it was hypothesized that the relationship between sense of control and symptoms of depression is mediated by PSMU (Hypothesis 4a). Specifically, adolescents with a low sense of control might tend to PSMU as a maladaptive coping strategy to (re)gain control. While this strategy might initially convey sense of control, it might reinforce addictive tendencies and their negative consequences, thereby exacerbating symptoms of depression. In contrast, a high sense of control could reduce the risk of PSMU and thus contribute to lower symptoms of depression. Lastly, it was assumed that the link between sense of control and life satisfaction is mediated by PSMU (Hypothesis 4b). Specifically, adolescents with a low sense of control could be prone to enhanced PSMU that could reduce their life satisfaction. In contrast, adolescents with a high sense of control might be less prone to PSMU, thereby preserving cognitive resources and fostering life satisfaction. Figure 1 visualizes the hypothesized mediation models of both outcomes.

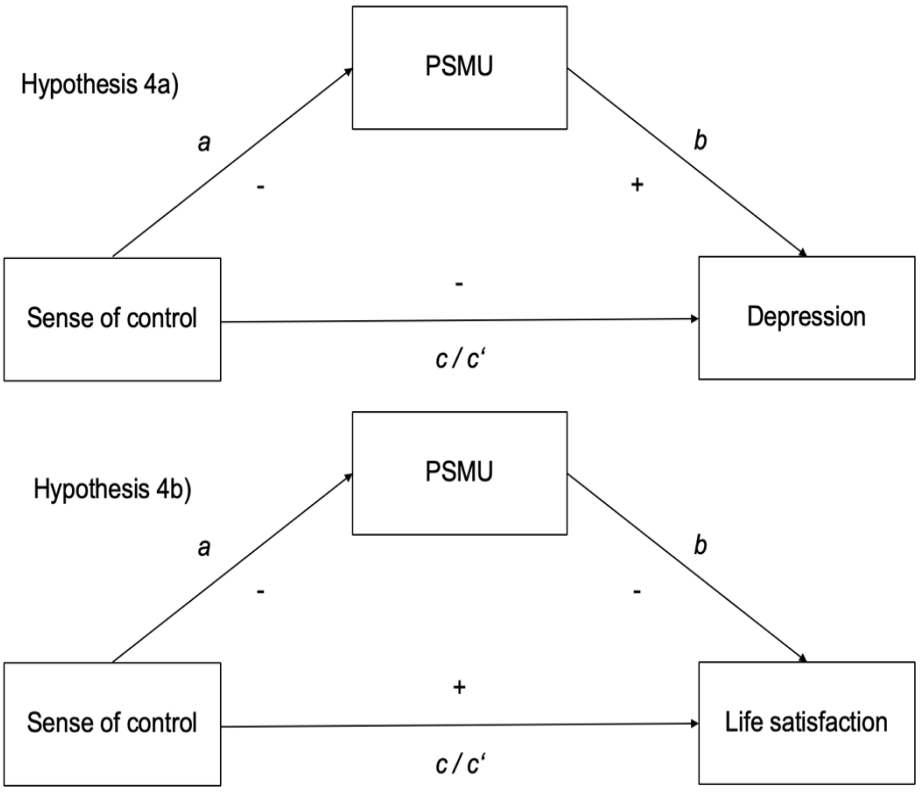

Figure 1. Hypothesized mediation model with sense of control (predictor), PSMU (mediator), and (Hypothesis 4a) depression (outcome), as well as (Hypothesis 4b) life satisfaction (outcome). Notes. Path a: link between sense of control and PSMU; path b: link between PSMU and the respective outcome (depression or life satisfaction); path c (total effect) basic relationship between sense of control and the respective outcome (depression or life satisfaction); path c' (direct effect): relation between sense of control and the respective outcome (depression or life satisfaction) after the inclusion of PSMU in the model; - indicating negative effect; + indicating positive effect

2. Method

2.1. Participants, Procedure, and Ethical Considerations

In the cross-sectional study, data of 154 school-aged adolescents (62.3% female; age (years): M_{age} (SD_{age}) = 15.2 (1.48), range: 11-19) were collected by an online survey. Participants were recruited from different high schools in the Ruhr region of Germany. First, school headmasters and teachers were informed about the project, and their consent was obtained. Next, during lesson time, the pupils were fully informed about the investigation. To obtain consent from their parents, interested pupils received a letter for their parents. At the next appointment, parental consent has been obtained. Afterwards, the participants received the link to the survey and responded to it in the presence of the principal investigator. Pupils completed the questionnaire via the school's own iPads or their private smartphones. There was no missing data. Inclusion criteria were to be of school age and to be a social media user. Two participants were excluded from the analysis since they were not social media users. Data collection took place from December 2023 to March 2025. Participation in the study was voluntary and not financially compensated. The study protocol received approval from the responsible local ethics committee.

2.2. Measures

Sense of control. Following Niemeyer et al. (2019), the Sense of Control Scale (SoC-Scale) can be used to measure sense of control. The scale encompasses two items ("Do you experience important areas of your life (i.e., work, free-time, family, etc.) to be uncontrollable, meaning that you cannot or barely can influence them?" and "Do you experience these important areas of your life as unpredictable or instructable?"). Answers were given on a 5-point Likert-type scale (0 = not at all; 4 = very strong). For interpretation, the scale was recoded so that higher sum scores indicate a higher sense of control. Current scale reliability was α = .62.

Problematic Social Media Use. The Bergen Social Media Addiction Scale (BSMAS) was used to assess the extent of PSMU (original version: Andreassen et al., 2017; German version: Brailovskaia et al., 2020b). The scale consists of six items that correspond to the six typical addiction symptoms (e.g., "How often during the last year have you felt an urge to use social media more and more?"). Ratings were given on a 5-point Likert-type scale (1 = never; 5 = very often). High sum scores indicate higher levels of PSMU. Current scale reliability was α = .77.

Symptoms of Depression. For the assessment of psychopathology, the subscale depression of the Depression Anxiety Stress Scales 21 (DASS-21; original version: Lovibond & Lovibond, 1995; German version: Nilges & Essau, 2015) was measured. The subscale contains seven items (i.e., "I felt that life was meaningless") which were rated on a 4-point Likert-type scale (0 = did not apply to me at all; 3 = applies to me very much or most of the time). Higher sum scores indicate higher symptoms of depression. Current scale reliability was α = .86.

Life satisfaction. To capture positive mental health, the Satisfaction with Life Scale (SWLS; original version: Diener et al., 1985; German version: Glaesmer et al., 2011) was used. Life satisfaction is measured by five items (e.g., "I am satisfied with my life"). The items were rated on a 7-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). High sum scores indicate high life satisfaction. Current scale reliability was α = .80.

2.3. Statistical Analysis

For statistical analyses, the Statistical Package for Social Science (SPSS 29; IBM Corp., 2023) and the macro Process version 3.5 (www.processmacro.org/index.html; Hayes, 2017) were used. First, descriptive statistics of the investigated variables were calculated. A bivariate zero-order correlation was computed to examine the relationships among sense of control, PSMU, depressive symptoms, and life satisfaction. Then, two mediation models were conducted. Both included a sense of control as a predictor and PSMU as a mediator. Symptoms of depression (model 1) and life satisfaction (model 2) served as dependent variables. Age and gender were incorporated as control variables. In both mediation models, the direct effect between the predictor and the outcome was considered as *c*. The effect from predictor to mediator was named *a* and the effect from mediator to the outcome was *b*. The indirect effect *ab* represented the combination of the effects *a* and *b*. The direct effect from predictor to outcome, while accounting for the mediator, was denoted as *c'*. The mediation effect was estimated with a bootstrapping procedure (10.000 samples), providing percentile bootstrap confidence intervals (95% CI). Power analysis using the G*Power program version 3.1 (Faul et al., 2007) revealed that the sample size was sufficient for valid results (power = .80, α = .05, effect size f^2 = .10).

3. Results

Descriptive statistics for the investigated variables and their correlations are presented in Table 1. Significant correlations for all investigated variables were found (p < .01) (see Table 1). Sense of control was negatively correlated with PSMU and depression and positively correlated with life satisfaction. PSMU was positively correlated with depression and negatively related to life satisfaction. A negative correlation between depression and life satisfaction was found.

Table 1. Descriptive statistics and correlations of sense of control, problematic social media use (PSMU), depression, and life satisfaction.

Variable	M (SD)	Min-Max	Skewness	Kurtosis	(2)	(3)	(4)
(1) Sense of control	4.59 (1.56)	0-8	.100	.689	-.221**	-.258**	.339**
(2) PSMU	16.19 (5.11)	6-30	.109	-.401		.438**	-.386**
(3) Depression	7.08 (5.19)	0-21	.438	-.712			-.685**
(4) Life satisfaction	22.58 (6.13)	5-35	.022	-.666			

Note. N = 154; M = mean; SD = standard deviation; Min = minimum; Max = maximum; **p < .01.

Figure 2 provides the results of the bootstrapped mediation analyses with sense of control as predictor, PSMU as mediator, and (a) depression as well as (b) life satisfaction as outcomes. In both mediation models, the negative association between sense of control and PSMU was significant (path *a*: p < .05).

In the first model, the negative association between sense of control and symptoms of depression was significant (total effect *c*: p < .001). Accordingly, 8.5% of the variance in symptoms of depression was explained by sense of control. The positive association between PSMU and symptoms of depression was also significant (path *b*: p < .05). After accounting for the mediator, the negative relationship between sense of control and symptoms of depression remained significant (direct effect *c'*: p < .05). A one-unit increase in sense of control was associated with a decrease of 0.58 in symptoms of depression. However, the direct effect was lower than the total effect, indicating a partial mediation. The full model explained 22.5% of the variance in symptoms of depression. Therefore, the percentage of variance explained in the outcome increased by 14%. The indirect effect (*ab*) of sense of control on symptoms of depression through PSMU was also significant (b = -.287, SE = .145, 95% CI [-.612, -.042]) and accounted for 33% of the total effect.

In the second model, the positive association between sense of control and life satisfaction was significant (total effect *c*: p < .001). Accordingly, 17% of the variance in life satisfaction was explained by sense of control. The negative association between PSMU and life satisfaction was also significant (path *b*: p < .05). After inclusion of the mediator, the positive association between sense of control and life satisfaction remained significant (direct effect *c'*: p < .001). A one-unit increase in sense of control was associated with an increase of 1.08 in life satisfaction. However, the direct effect was also lower than the total effect, indicating a partial mediation of PSMU on the relationship between sense of control and life satisfaction. The second model explained 25.3% of the variance in life satisfaction. The indirect effect (*ab*) of sense of control on life satisfaction through PSMU was also significant (b = .262, SE = .149, 95% CI [.034, .609]) and accounted for 19.5% of the total effect. After including the mediator in the model, the percentage of variance explained in the outcome increased by 8.3%.

Table 2. Estimated coefficients of the mediation models with sense of control as predictor, PSMU as mediator, and depression as well as life satisfaction as outcomes (controlling for age and gender).

Outcome	Total effect				Direct effect				Indirect effect			
	c	SE	95% CI	R^2	c'	SE	95% CI	R^2	ab	SE	95% CI	ΔR^2
Depression	-.862	.250	[-1.356, -.367]	.085	-.575	.275	[-1.118, -.032]	.225	-.287	.145	[-.612, -.042]	.140
Life satisfaction	1.338	.270	[.805, 1.871]	.170	1.077	.307	[.470, 1.683]	.253	.262	.149	[.034, .609]	.083

Note. N = 154; SE = standard error; CI = confidence interval; all CIs generated with bootstrapping: N = 10,000; R^2 = R-squared effect size measure; ΔR^2 = incremental R-squared; c = total effect; c' = direct effect; ab = indirect effect.

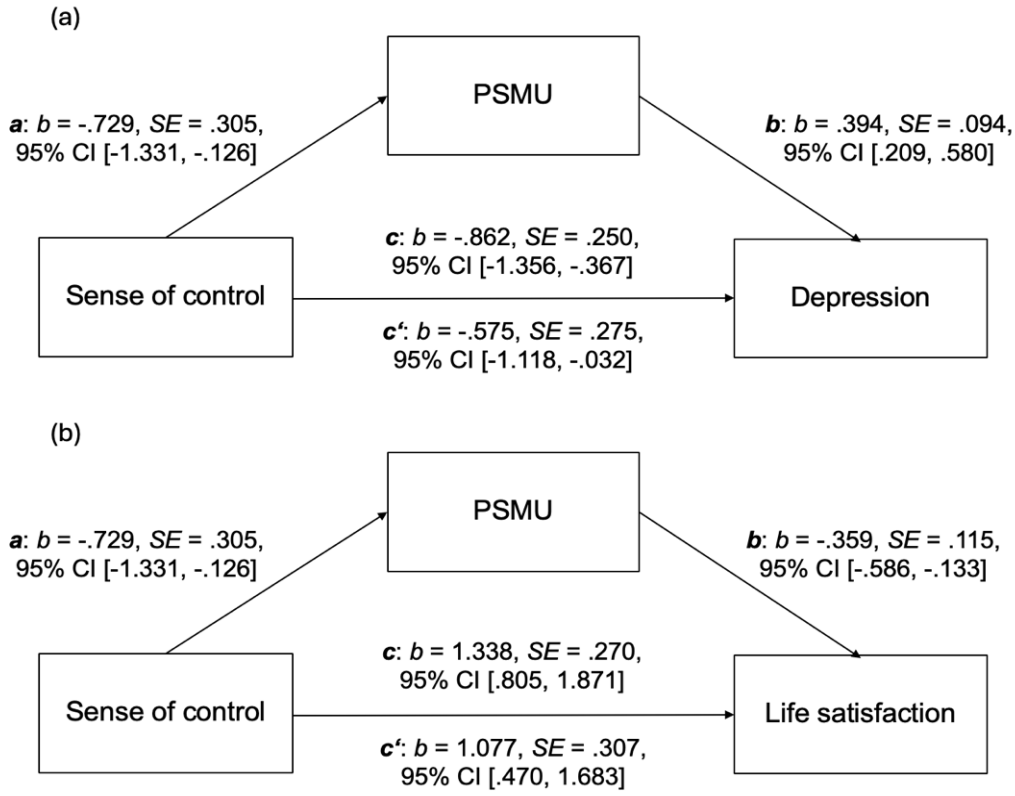

Figure 2. Mediation model including sense of control (predictor), PSMU (mediator), and (a) depression (outcome) and (b) life satisfaction (outcome). Notes. N = 154; c = total effect; c' = direct effect; b = standardized regression coefficient; SE = standard error; CI = confidence interval.

4. Discussion

Mental health problems are rising, particularly in adolescence (i.e., McGorry et al., 2024). Adolescence is a crucial period in which psychosocial demands and cognitive changes occur (West et al., 2023), making adolescents especially vulnerable to the acquisition of mental disorders (Sacco et al., 2024). Notably, sense of control is a crucial cognitive factor influencing mental health (Lachmann et al., 2009; Seligman, 1972). Furthermore, the use of social media and the prevalence of PSMU are increasing (Wiedemann et al., 2025). Some researchers argue that PSMU is an etiological risk factor for mental health and at least partly explains the increase in mental health problems (McGorry et al., 2024; Keyes & Platt, 2024). Notably, social media represents a digital world in which a sense of control can be experienced (e.g., Throuvala et al., 2019; Van de Casteele, 2024; West et al., 2024). Some researchers emphasize that people who lack control in the offline world tend to engage in intensive social media use to (re)gain a sense of control (Brailovskaia & Margraf, 2021; He et al., 2024). However, this assumption has not been investigated in adolescents yet. Therefore, the present study examined the relationship between sense of control and mental health in adolescents, while considering the role of PSMU.

As expected, sense of control was negatively associated with symptoms of depression (confirmation of Hypothesis 1a) and positively associated with life satisfaction (confirmation of Hypothesis 1b). Furthermore, sense of control was negatively associated with PSMU (confirmation of Hypothesis 2). Moreover, PSMU was positively associated with symptoms of depression (confirmation of Hypothesis 3a) and negatively associated with life satisfaction (confirmation of Hypothesis 3b). Subsequently, the relationship between sense of control and symptoms of depression, as well as life satisfaction, was partially mediated by PSMU (confirmation of Hypotheses 4a and 4b). Thus, the presented results complement prior findings by focusing on adolescents, a group particularly vulnerable to mental health problems and PSMU.

4.1. Implications for theory and practice

Given the cross-sectional design of the study, causal interpretations remain speculative; nevertheless, the results suggest that sense of control is a potential predictor of depression and life satisfaction. This is in line with the assumption that sense of control is a cognitive predisposing factor of mental health (Lachmann et al.,

2009; Seligman, 1972). The extent to which people perceive their environment as influenceable is of great importance. However, Mirowsky and Ross (1990) noted a distinction between sense of control over environmental conditions (e.g., exercising) and the probability of environmental outcomes (e.g., success or failure). While people may not always be able to control the environmental outcomes directly, the belief that their actions can shape their environment may foster the disposition to act. In turn, this increased tendency to act may enhance the likelihood of achieving good outcomes and may serve as a protective factor for mental health. In contrast, low sense of control contributes to the experience of helplessness and thereby to passivity that can foster symptoms of depression (Seligman, 1972).

Moreover, the findings suggest that PSMU might foster the relationship between sense of control and mental health. Following Southwick and Southwick (2018), sense of control is accompanied by efforts to regain sense of control. Such efforts might involve dysfunctional coping strategies that can negatively impact mental health (i.e., Valkenburg et al., 2022). Dysfunctional strategies can be problematic smartphone use (Brailovskaia et al., 2021), problematic Internet gaming (Kircaburun et al., 2020), as well as PSMU (Brailovskaia & Margraf, 2021; He et al., 2024; Vally et al., 2023). Moreover, PSMU could contribute to negative consequences in adolescents' offline lives (Brailovskaia, 2024). When social media use cannot be continued, adolescents with high levels of PSMU experience withdrawal symptoms (e.g., anxiety) (Ciudad-Fernandez et al., 2024), which in turn lead to mental discomfort (Brailovskaia, 2024). Furthermore, adolescents with high levels of PSMU are constantly preoccupied with social media use either behaviorally (e.g., browsing) or cognitively (e.g., thinking about social media use). Therefore, adolescents with high levels of PSMU often neglect obligations (e.g., homework), which, in turn, leads to interpersonal conflicts (e.g., problems within the school environment; Brailovskaia, 2024) or intrapersonal conflicts (e.g., perceived subjective loss of control; Ciudad-Fernandez et al., 2024). In turn, these characteristics of PSMU could contribute to an increase in symptoms of depression as well as a decrease in life satisfaction. In contrast, a high sense of control might reduce the likelihood of PSMU, thus fostering mental health.

This finding could be especially important for adolescence, since young people do not yet have a mature sense of control (Flammer, 1995). During this period, adolescents assume greater responsibility and control while remaining subject to external regulations, such as compulsory schooling and parental authority (West et al., 2023). These competing demands might lead to an increased sensitivity for sense of control. As adolescents seek ways to navigate these challenges and assert their control, they might turn to domains that allow for more self-directed behavior. In this regard, social media represents a salient context that offers various opportunities to generate a sense of control (West et al., 2023). Especially regarding developmental tasks such as independence acquisition, identity formation, and peer affiliation, social media appear attractive to adolescents due to their specific functions (e.g., self-presentation; Parent, 2023). Therefore, adolescents can actively engage in their developmental tasks in the digital world and foster a sense of control (Parent, 2023). Despite this, the attempt to generate sense of control through social media use can be hazardous. In the short-term, the use of social media might contribute to the impression of (re)gaining sense of control (Brailovskaia & Margraf, 2021) and thus reinforce intensive social media engagement (Brand et al., 2019). However, in the long term, problematic social media use is encouraged by diminished control over behavior (Brand et al., 2019). This problematic engagement not only impacts mental health negatively (i.e., Shannon et al., 2022; Valkenburg et al., 2022) but also frustrates the initial goal of (re)gaining a sense of control, since the use becomes more and more compulsive (West et al., 2023).

4.2. Limitations and directions for future research

Despite the results' relevance, some limitations must be considered. First, the cross-sectional design does not allow for drawing causal conclusions from the results. Replication of the present results with longitudinal experimental data is worthwhile. Second, the reliability of sense of control was questionable. This might be because the young participants simply did not understand the wording of the questions. Perhaps a positive formulation would be more understandable for adolescents (e.g., "Do you experience important areas of your life (i.e., school, free-time, family, etc.) to be controllable, meaning that you can influence them?" and "Do you experience these important areas of your life as predictable or controllable?"). Additionally, the low internal consistency of the SoC-Scale diminishes statistical power, thereby increasing the rate of type II errors. Therefore, future studies should test the mediation model using a more age-appropriate scale to assess sense of control. Third, recruitment of participants is confined to different schools in the Ruhr region of Germany. Consequently, the findings' generalizability to other adolescents in Germany and other countries is limited. Fourth, the sample was not fully gender-balanced, with more female than male participants. Recent studies

report that girls are more prone to PSMU and mental health problems in contrast to boys (i.e., Montag et al., 2024). This could lead to an overestimation of effect sizes. To at least partly tackle this limitation, gender was controlled for in the analyses. Fifth, data were obtained via self-reports. Lastly, only small effect sizes were detected. This could indicate the relevance of other potential mediators (e.g., Fear of Missing Out, FoMO) and moderators (e.g., personality traits), which should be considered in future studies.

5. Conclusion & Practical Implications

Against the backdrop of the "youth mental health crisis", measures to promote the mental health of young people are urgently needed (McGorry et al., 2024). However, as social media's popularity grows, the prevalence of PSMU is also increasing (Wiedemann et al., 2025). PSMU has been recognized as an etiological risk factor in the "youth mental health crisis" (McGorry et al., 2024; Keyes & Platt, 2024). Therefore, measures promoting mental health and diminishing the risk for PSMU are urgently required. McGorry et al. (2024) suggest applying positive psychology approaches. The present data support the assumption that sense of control might contribute to PSMU. Accordingly, fostering adolescents' sense of control might represent a promising approach for interventions, as it has been linked to positive mental health outcomes and thereby addresses the aforementioned aspects (Brailovskaia & Margraf, 2024). For example, adolescents could be educated in pathogenic social media mechanisms (e.g., FoMO, Fioravanti et al., 2021) that foster problematic use. Subsequently, functional strategies to overcome problematic engagement and (re)gain control over social media use in general should be disseminated. Asantugrul and Barut (2024) showed that a cognitive-behavioral-based psychoeducation program significantly decreased PSMU as well as the related sub-dimension lack of control in adolescents. Another approach to foster sense of control might be an increase in physical activity. The beneficial effects of physical activity on mental health are well documented (e.g., Biddle & Asare, 2011). Moreover, Precht et al. (2023) revealed that engagement in physical activity can foster sense of control by the enhancement of one's performance, the accomplishment of self-imposed goals, or investing time in meaningful activities. Therefore, an increase in physical activity can lead to an increase in a sense of control, thereby reducing the use of maladaptive coping strategies, such as intensive social media use (Brailovskaia & Margraf, 2021). However, most young people do not fulfill the current guidelines of at least 60 minutes of physical activity per day (Guthold et al., 2020).

These results indicate that sense of control might be a mediator in the relationship between PSMU-intervention approaches and mental health. By providing information about PSMU, its maintaining factors, and alternative behavior, psychoeducation may enhance individuals' sense of control. Likewise, Brailovskaia & Margraf (2021) demonstrated that sense of control can lead to a reduction of dysfunctional coping strategies such as intensive social media use. In conclusion, the present findings demonstrate that a low sense of control could contribute to symptoms of depression and diminish life satisfaction among adolescents. Also, the results showed that PSMU could significantly foster this relationship. Furthermore, the findings reveal that a low sense of control could be a predictor of PSMU. This result aligns with findings from previous studies, which displayed that a low sense of control is associated with problematic media usage, such as PSMU, as well as problematic smartphone use (Brailovskaia & Margraf, 2021; Brailovskaia et al., 2021; Vally et al., 2023), while a high sense of control served as a protective factor (Brailovskaia & Margraf, 2024; He et al., 2024). Adolescents with a low sense of control are more likely to engage in PSMU, which may negatively impact their mental health.

Statement of Researchers

Researchers' contribution rate statement:	**CMD:** Conceptualization, methodology, investigation, formal analysis, visualization, writing – original draft, writing – review & editing, data curation. **JB**: Writing – review & editing, supervision
Conflict statement:	The authors declare that they have no conflict of interest.
Data Availability Statement:	The data supporting this study's findings are available from the corresponding author upon reasonable request.
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Ethical Considerations:	This research was approved by the Ethics Committee of the Faculty of Psychology at Ruhr University Bochum (approval no. 705, April 29, 2021).

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