



Parenting and Problematic Social Media Use: A Systematic Review

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Abstract

Purpose of Review Research on the relation between parenting and adolescents' problematic social media use (PSMU) is relatively new and reveals rather mixed findings. This is likely due to a focus on different parenting factors as well as a diversity in outcomes of social media use. This paper is aimed at reviewing existing literature on parenting and adolescents' PSMU and providing a reference for future research and intervention.

Recent Findings There is consistent evidence that positive parent–child relationships as well as a positive family climate at home are related to less PSMU. Likewise, most studies indicate that positive parenting, parenting that is characterized by affection, responsiveness, and demandingness, is associated with less PSMU, whereas parenting characterized by inconsistency and control is associated with more PSMU. Findings concerning internet-specific parenting are far less consistent. Restrictive mediation shows a dual influence. When restrictive mediation constitutes rule setting, then a negative correlation with PSMU is found. However, when it refers to reactive restrictions, a positive association is found. Active mediation is not consistently correlated to PSMU. Finally, a clear and consistent positive correlation between parental phubbing and PSMU was found.

Summary This review indicates that there is more consistent evidence that positive parent-child interactions and positive general parenting practices (e.g., affection and responsiveness) may help to prevent adolescents' PSMU than internet-specific parenting practices that are aimed at guiding or restricting adolescents' internet use. However, studies largely used a cross-sectional design and varied significantly in the conceptualization and operationalization of parenting practices. This review justifies further investigation which is needed to provide an integral prevention approach that includes parenting to support optimal adolescent development, including the prevention of PSMU.

Keywords Parenting · Problematic social media use · Rev

Introduction

Social media have become increasingly pervasive in the lives of adolescents. While moderate social media use can have beneficial effects for the socio-emotional development [1] and peer relationships [2], problematic social media use has consistently been associated with depression, anxiety,

and stress [3]. Problematic social media use (PSMU) is characterized by addictive-like behaviors such as a preoccupation with and inability to regulate social media use [4]. And while it is not recognized as an official diagnosis, similar to internet gaming disorder, PSMU is often measured with the presence of addictive symptoms. For instance, the social media disorder scale [5] uses a threshold of six symptoms to establish problematic social media use. Research in 29 countries, using this scale, showed that the prevalence in 11-to 15-year-olds is around 7.5% [6••]. However, there is also a considerable group (25–35%) that exhibits some symptoms of PSMU, without reaching the threshold of PSMU. Research has shown that these adolescents can be considered “at risk” [7–9] for PSMU, as having a few symptoms also relates to a variety of adverse outcomes, such as emotional problems and reduced sleep, compared to normative social media users [7, 10]. The

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intense use of social media by adolescents has raised concerns among parents on how to regulate the social media use of their offspring in order to prevent problematic use. More insight into parenting and family factors that may prevent adolescents from becoming a problematic social media user is required.

As one of the most important socialization agents in children's lives, parents undertake different actions to regulate the social media use of their youngsters. Herein, we can distinguish parenting practices that aim to regulate social media use or internet use specifically (i.e., internet-specific parenting) and general parenting practices (e.g., general monitoring). For internet-specific parenting (in the literature also referred to as parental mediation), parents can, for instance, restrict the amount of social media use by setting rules about when and how long their children are allowed to use social media [i.e., restrictive mediation; 11]. Also, the way parents communicate about internet use with their children, and how often they communicate [i.e., active mediation; [11••, 12], is investigated in relation to PSMU. In a recent review on the relationship between parental mediation and problematic media use (internet gaming disorder, social media disorder, and general problematic media use), Fam et al. [13] showed a protective relation of active mediation with problematic media use and no relation of restrictive mediation. However, parents may also influence PSMU in ways that are not directly linked to social media use but are found to be relevant for optimal development of youngsters in general. For example, a high quality of the parent–child relationship may lower the risk of PSMU [14]. Also, general parental monitoring is an important tool to lower the risk of risky behaviors and addiction among adolescents [15], including excessive internet use [16], so potentially also problematic social media use. Moreover, in line with the socio-learning theory [17], parents are also considered role models for their child's behavior, which is also the case for parents own digital media use. Overall, there is sufficient empirical and theoretical evidence that parents play a major role in adolescents' social media use. Yet, a clear overview of *how* parents influence adolescents' PSMU is lacking.

State-of-the-art knowledge on the role of parents in adolescents' problematic social media use is pivotal to be able to advise parents and educators in guiding their children's social media use. In order to gain such knowledge, it is important to clearly define the specific outcome, e.g., time spend on social media use versus PSMU, as well as the exact set of parenting practices, e.g., internet-specific rules, communication about internet use. The current systematic review examines and summarizes empirical evidence concerning the relationship between general and internet-specific parenting practices and adolescents' problematic social media use.

Method

A systematic literature search was performed following the guidelines of Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA Group; Moher et al., 2009). We screened four databases (PubMed, Web of Science, Scopus, and PsycInfo) in April 2023, by using the following combination of search parameters: (parent* OR family OR household) AND (style* OR involvement OR mediation OR socialization OR socialisation OR context OR rule* OR restriction* OR practice* OR influence OR behavior OR behaviour OR regulation OR supervision OR functioning OR rearing OR communication OR control OR co-use) AND (compulsive OR excessive OR problematic OR dependency OR addict*) AND (“social media” OR Facebook OR Twitter OR Tiktok OR Instagram OR Myspace OR “social network” OR “social networks” OR “Social network site*”). We additionally searched reference lists of the found articles to ensure a thorough exploration of all relevant literature. A total of 5281 records were identified. Before screening, 3354 duplicates were removed using the Endnote reference management software (Clarivate Analytics, 2023).

Inclusion and Exclusion Criteria

The current review included peer-reviewed studies that linked quantitative data on parenting constructs with problematic social media use (i.e., displaying symptoms of addictive behavior). We only considered studies written in English and published from 2009 onwards. Given that parents tend to have a diminished influence when children transition to adulthood, we primarily focused on studies that included youth up to 18 years old. However, if a study used a sample with a broader age range that also included children, we kept the study in the review. Although our focus was on problematic social media use, we also included studies that targeted smartphone addiction, as nowadays many children tend to use smartphones primarily for social media engagement [18]. We excluded studies that (a) focused on problematic internet use, cyberbullying, or video gaming; (b) did not operationalize problematic social media use based on addictive use criteria; (c) did not connect parenting constructs with problematic social media use; (d) were case studies, literature reviews, meta-analyses, chapters of books, editorials, or conference papers.

Data Extraction

Two of the authors independently screened all remaining records for eligibility using the Rayyan software [19].

Initially, records were screened on title, abstract, and keywords and the remaining records underwent a full-text screening (see Fig. 1 for an overview). The screening process yielded 43 eligible studies for inclusion in the review. We extracted and tabulated all relevant information of these studies, such as the authors, publication date, study type, study location, sample size, sample characteristics, measures of problematic social media use and parenting constructs, and the study results based on bivariate correlations. The information on all included studies is presented in Table 1.

Results

Characteristics of the Studies

We identified 43 unique studies investigating parenting and problematic social media use. All these studies are cross-sectional in nature, except for three [11••, 20••, 21••]. All

studies are exclusively based on youth reports except for one that also used parent reports [9]. In total, 15 studies were conducted in Europe, 19 studies were conducted in Asia, 7 studies were conducted in the Middle East, and 1 in Northern America. The age of the participants ranged from 9 to 22 years of age.

Conceptualization and Operationalization of Problematic Social Media Use

While many different instruments were employed to measure PSMU, two instruments were used most often. The Bergen Social Media Addiction Scale (BSMAS) [22] was used in 13 studies, while the social media disorder scale (SMD) [5] was used in nine studies. Both these scales are based on the six components of behavioral addiction (salience, mood modification, tolerance, withdrawal, conflict and relapse) [23••], where the SMD scale has also included three additional components (displacement, deception, and problems)

Fig. 1 Flowchart of systematic review

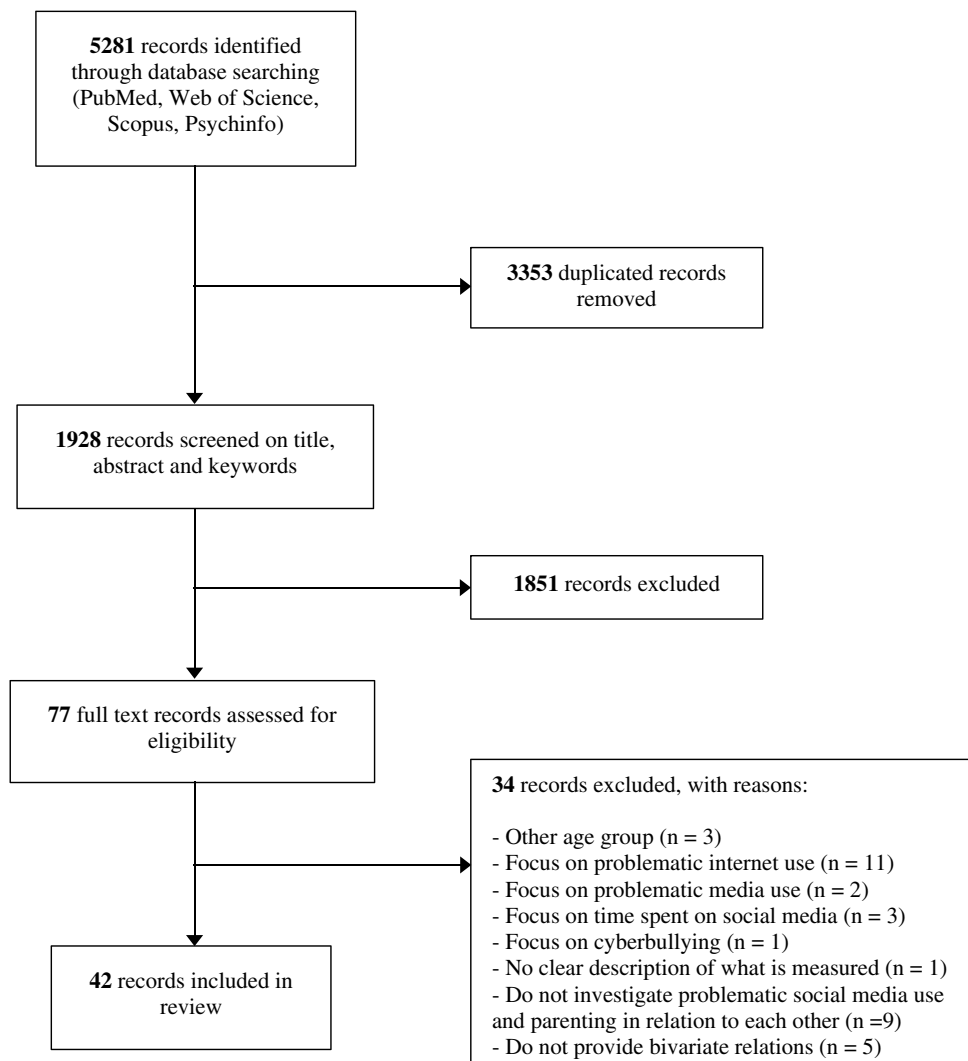


Table 1 Summary of studies

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Chabrol et al., 2017	Cross-sectional	456	12–15 ($M_{age} = 20.5$; $SD = 1.08$)	Europe	Adapted version of the Internet Addiction Test (IAT; Young et al., 1998) by changing internet to Facebook	Parental Bonding Instrument (PBI; Parker et al., 1979), Inventory of Parent and Peer Attachment (IPPA-24; Raja et al., 1992)	Problematic Facebook use scores correlated positively with perceived overprotection ($r = .18$) and negatively with perceived care ($r = -.16$) and parent attachment ($r = -.16$)
Koning et al., 2018	2-wave prospective	352	51.1% girls, 11–15 years ($M_{age} = 13.9$; $SD = .74$)	Europe	Social Media Disorder Scale (Van den Eijnden et al., 2016)	Adapted version of the Internet-Specific Rules scale (Van den Eijnden et al., 2010), self-composed items on restrictive responses of parents to adolescents' social media behavior, quality of communication on social media use with parents (Van den Eijnden et al., 2010)	Internet-specific rules were negatively correlated to problematic social media use at T1 ($r = -.25$) and T2 ($r = -.16$) Reactive restrictions were positively correlated to problematic social media use at T1 ($r = .23$) and T2 ($r = .18$)
Lee and Kim, 2018	Cross-sectional	224	50% girls, 11–13 years	Asia	Smartphone Addiction Proneness Scale for Youth (Shin et al., 2011)	Parental Bonding Instrument (PBI; Parker, 1983), Parent-Adolescent Communication Scale (PACS; Barnes & Olson, 1982), Parental Mediation of Children's Internet Use Tool (Livingstone et al., 2011)	The parental bonding subscale "Care" was significantly higher in the typical user group than in the social media addiction risk group ($t = 2.159$, $p < .001$) correlated with smartphone addiction behaviors. The "Overprotection" subscale was not related to smartphone addiction behaviors. There were no differences in parental mediation subscales between the typical user group and the social media addiction risk group
Badenes-Ribera et al., 2019	Cross-sectional	589	54.2% girls, 12–17 years ($M_{age} = 14.28$; $SD = 1.52$)	Europe	Bergen Facebook Addiction Scale (BFAS; Andreassen et al., 2012)	Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987)	For adolescents (14–17 years), positive correlations were found between the alienation of parent subscale and all the BFA subscales ($r = .12-.30$). Also, a negative correlation ($r = -.15$) was found between trust and the withdrawal subscale of the BFAS For early adolescents (12–13 years), a positive relation was found between alienation and the mood modification subscale of the BFAS ($r = .28$)

Table 1 (continued)

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Gugliandolo et al., 2019	Cross-sectional	482	58% girls, 14–17 years	Europe	Mobile Phone Addiction Index (MPAI; Leung 2008), adapted version of the Bergen Facebook Addiction Scale (BFAS; Andreassen et al. 2012) by changing Facebook to social network	Psychological Control Scale (PCS; Barber 1996), the autonomy support subscale of the Perceptions of Parenting Scale (POPS; Robbins 1994)	Parental psychological control was positively correlated to mobile phone addiction ($r = .31$), whereas parental autonomy support was unrelated to mobile phone addiction
Marino et al., 2019	Cross-sectional	Study 1: 271 Study 2: 336	Study 1: 67.9% girls, 14–20 years ($M_{age} = 17.02$, $SD = 1.02$) Study 2: 54.7% girls, 14–20 years ($M_{age} = 16.22$, $SD = 1.41$)	Europe	Problematic Facebook use (Marino et al., 2017)	Study 1: Inventory of Parent and Peer Attachment (IPPA; Guarnieri et al., 2010) Study 2: the shortened form of Experiences in Close Relationships—Revised Child’s Version (ECR-RC; Brenning et al., 2014)	Study 1: the trust and communication (only in mothers) subscales of attachment were negatively correlated with problematic social media use ($r_{trust} = -.17$, $r_{communication} = -.22$). The alienation subscale was positively related to problematic social media use in both mothers and fathers ($r_{mother} = .33$, $r_{father} = .17$) Study 2: anxiety towards father and mother was positively related to problematic social media use ($r_{mother} = .33$, $r_{father} = .25$). Avoidance was not related to problematic social media use
Albeladi and Palmer, 2020	Cross-sectional	393	68.7% girls, 13–18 years, $M_{age} = 15.6$, $SD = 1.66$	Middle East	Adapted version of the Bergen Facebook Addiction Scale (BFAS; Andreassen et al. 2012) by changing Facebook to social media	Adapted version of the EU Kids Online II Survey for Parental Mediation (Livingstone et al., 2011) by changing internet to social media, Brief Family Relationship Scale developed (Fok et al., 2014)	Social media addiction was correlated to lower levels of family expressiveness ($r = -.25$) and higher levels of family conflict ($r = .22$). There was no significant correlation between any types of parental mediation strategies and social media addiction
Bilgin et al., 2020	Cross-sectional	538	62.6% girls, 14–17 years	Middle East	Social Media Disorder Scale (Van den Eijnden et al., 2016)	The Adolescent Parent Relationship Questionnaire (PARQ; Robin et al., 1990)	Problematic social media use was positively correlated with global distress in the family ($r = .38$), problems with communication ($r_{mother} = .35$, $r_{father} = .28$), problem solving ($r_{mother} = .33$, $r_{father} = .29$), and warmth/hostility ($r_{mother} = .33$, $r_{father} = .30$) in the parent-adolescent relationship

Table 1 (continued)

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Boer et al., 2020	Cross-sectional	154,981	51% girls, 11/12/15 years ($M_{\text{age}} = 13.54$; $SD = 1.65$)	Europe, North America, Middle East	Social Media Disorder Scale (Van den Eijnden et al., 2016)	The subscale Family Support of the wo 4-item subscales of the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988)	Parental support was negatively associated with PSMU ($r = -.17$)
Chu et al., 2020	Cross-sectional	1840	49.5% girls, 12 years ($M_{\text{age}} = 12.91$; $SD = 0.31$)	Asia	Smartphone dependency (Lee et al., 2002)	The Affective Parenting Attitude subscale of the Parenting Behavior Inventory (Huh, 1999)	Affective parenting attitude negatively correlated with smartphone dependency ($r = .19$)
Iovu et al., 2020	Cross-sectional	708	36% female, 13–35 years	Europe	Bergen Facebook Addiction Scale (BFAS; Andreassen et al., 2012)	Family satisfaction was measured with the Family Satisfaction by Adjectives Scale (FSAS; Baracca et al., 2000)	Family satisfaction was significantly and negatively related with Facebook addiction ($r = -.16^{***}$)
Koroneczai et al., 2020	Cross-sectional	2035	54.2% girls, 14–22 years ($M_{\text{age}} = 16.97$; $SD = 1.61$)	Europe	Adapted version of the Bergen Facebook Addiction Scale (BFAS; Andreassen et al. 2012) by changing Facebook to social media	Hungarian version of Parental Bonding Instrument (H-PBI; Toth & Gervai, 1999)	Maternal and paternal overprotection was positively associated with problematic social media use ($r_{\text{mother}} = .22$, $r_{\text{father}} = .25$)
Savci et al., 2020	Cross-sectional	549	53.9% girls, 14–18 years ($M_{\text{age}} = 15.6$; $SD = 1.27$)	Middle East	Social Media Disorder Scale (Van den Eijnden et al., 2016)	The Family Life Satisfaction Scale (FLSS; Baraca et al., 2000)	PSMU was negatively correlated with family life satisfaction ($r = -.45$)
Wartberg et al., 2020	Cross-sectional	1001	48.25% girls, 12–17 years ($M_{\text{age}} = 14.58$; $SD = 1.68$)	Europe	German version of Social Media Disorder Scale (SMDS; Van den Eijnden et al., 2016)	German version of the Family APGAR (Smilkin, 1978)	Family functioning was negatively correlated to PSMU (OR = .90 converted to $r = -.03$)
Ballarotto et al., 2021	Cross-sectional	372	57.8% girls, 14–18 ($M_{\text{age}} = 15.8$; $SD = 1.4$)	Europe	Adapted version of the Bergen Facebook Addiction Scale (BFAS; Andreassen et al. 2017) by changing Facebook to Instagram	The Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1989)	Both attachment to the mother and attachment to father were negatively correlated to Instagram addiction ($r_{\text{mother}} = -.31$, $r_{\text{father}} = -.20$)
He et al., 2021	Cross-sectional	1270	45% girls ($M_{\text{age}} = 14.50$; $SD = 1.59$)	Asia	Adapted version of the Facebook Addiction Scale (FAS; Koc & Gulyagci, 2013) by changing Facebook to social network	Children's Perceptions of Interparental Conflict Scale (CPIC; Grych, Seid, & Fincham, 1992)	Parental conflict positively correlated with social networking sites addition ($r = -.23$)

Table 1 (continued)

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Hong et al., 2021	Cross-sectional	487	52% girls, 13–15 ($M_{age} = 13.68$)	Asia	Korean Smartphone Addiction Proneness Scale for Youth and Adults (Shin et al., 2011)	Parenting Behavior Inventory (Huh, 1999)	Positive parenting attitude (supervision, affection, rationale explanation) showed a significant negative correlation with smartphone addiction ($r = -.11$). Negative parenting attitude (inconsistency, excessive expectations, excessive interference) was positively correlated to smartphone addiction ^a
Lee and Kim, 2021	Cross-sectional	184	55.4% girls, 11–12 ($M_{age} = 11.34$; $SD = 0.88$)	Asia	Smartphone Addiction Proneness Scale (SAPS; Kim et al., 2014)	Parental Mediation of Children's Internet Use Tool (Livingstone et al., 2010), Stockdale's Technofreedom tool (Stockdale et al., 2018), the Parent-Adolescent Communication Scale (PACS; Barnes & Olson, 1985), Parenting Behavior Inventory (Huh, 1999) whereby for all only maternal factors were considered	The parenting style subscale "Inconsistency" was positively correlated to smartphone addiction ($r = .19$). The subscale "Affection" was negatively correlated to smartphone addiction ($r = -.17$) Problems in the mother-child communication were positively correlated to smartphone addiction ($r = .23$) The active and restrictive mediation scales were not significantly correlated to smartphone addiction
Pakkaari et al., 2021	Cross-sectional	3408	49.9% girls, 11/13/15	Europe	Social Media Disorder Scale (Van den Eijnden et al., 2016)	The Parental Monitoring Scale (Brown et al., 1993)	PSMU was most common among adolescents with low parental monitoring ($\chi^2(4) = 93.30$, $p = < .001$)
Sun et al., 2021	Cross-sectional	823	49.9% girls, 9–15 ($M_{age} = 12.41$; $SD = 1.23$)	Asia	Adapted version of the Facebook Addiction Scale (FAS; Koc & Gulyagci, 2013) by changing Facebook to social networking sites	Parental Mediation Through Guidance Scale (Sasson & Meschi, 2014), the Parents' ICT Attitude Scale (Aesaert et al., 2015)	Active parental mediation was negatively associated with SNS addiction ($r = -.20$)
Tas, 2021	Cross-sectional	456	53.9% girls, 14–18 years ($M_{age} = 15.54$)	Europe	Social Media Addiction Scale (Özgenel, Canpolat, et al. (2019)	Satisfaction with Family Life Scale (Çalışkan et al. (2017)	Social media addiction related negatively with satisfaction with family life ($r = -.28$)

Table 1 (continued)

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Yu and Shek, 2021	Cross-sectional	1896	48% girls, 10–16 years ($M_{age} = 13.19$; $SD = 0.52$)	Asia	Adapted version of the Bergen Facebook Addiction Scale (BFAS; Andreassen et al. 2012) by changing Facebook to social media	Chinese Parenting Behavioral Scale (Shek, 1999)	Social networking addiction was negatively correlated to paternal responsiveness ($r = -.17$) and demandingness ($r = -.13$) as well as maternal responsiveness ($r = -.11$) and demandingness ($r = -.18$)
Chidambaram et al., 2022	Cross-sectional	185	29.7% girls, 15–18 ($M_{age} = 16.85$; $SD = 1.12$)	Asia	The Dimensions of Social Media Addiction Scale (Almenayes, 2015)	The Multidimensional Neglectful Behavior Scale Adult Recall Short Form (Straus, 2006)	Social network addiction was not related to parental neglect
Costantini et al., 2022	Cross-sectional	148 parent–child dyads	77% girls, 14–18 ($M_{age} = 15.96$; $SD = 1.36$)	Europe	Bergen Social Media Addiction Scale (BSMAS, Andreassen et al., 2017)	The Alabama Parenting Questionnaire (APQ; Shelton et al., 1996)	Positive parenting was negatively correlated to problematic social media use ($r = -.21$), whereas negative parenting was positively correlated with problematic social media use ($r = .41$)
Dong et al., 2022	Cross-sectional	2286	48% girls, 11–16 ($M_{age} = 13.46$; $SD = 0.93$)	Asia	Adapted version of the Facebook Intrusion Questionnaire (FIQ, Elphinstone & Noller, 2011) by changing Facebook to social networking sites	Parental Phubbing Scale (Wang et al., 2020)	Parental phubbing is significantly correlated with adolescents' SNS addiction ($r = .25$)
Geurts et al., 2022	Cross-sectional	403	53.3% girls, 9–19 ($M_{age} = 13.51$; $SD = 2.15$)	Europe	Social Media Disorder Scale (Van den Eijnden et al., 2016)	Internet-specific rule setting (Van den Eijnden et al., 2010 in Koning et al., 2018), reactive restrictions (Koning et al., 2018), Parenting Style Inventory II (Darling and Toyokawa, 1997), self-composed items on parents' screen time, self-composed items on parental phubbing, Family Assessment Device (Epstein et al., 1983)	Internet-specific rule setting was negatively correlated to problematic social media use ($r = -.18$). Reactive restrictions were positively correlated to problematic social media use ($r = .19$). Positive parenting was negatively correlated to problematic social media use ($r = .25$). Family functioning was negatively correlated to problematic social media use ($r = -.14$). Parental phubbing was positively correlated to problematic social media use ($r = .15$).

Table 1 (continued)

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Mu et al., 2022	Cross-sectional	242	66% girls, > 18	Asia	Combination of adapted items from the Facebook Addiction Scale (Koc and Gulyagci 2013) and Behavioral Technology Addiction Scale (Charlton, 2002) by changing Facebook and technology to short-form video addiction	Parental phubbing (Qian et al., 2018)	Short-form video addiction was negatively related to parent-child relationship quality ($r = -.30$) and not significantly related to parental phubbing
Yue et al., 2022	Cross-sectional	719	48.76% girls, 15–17	Asia	The Smartphone Addiction Scale (SAS; Kwon et al., 2013)	Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987)	Parent-child relationship negatively correlated with smartphone addiction ($r = .47$)
Wang, 2022	Cross-sectional	960	50.6% girls ($M_{age} = 14.86$; $SD = 1.64$)	Asia	Adapted version of the Bergen Facebook Addiction Scale (BFAS; Andreassen et al. 2012) by changing Facebook to social media	Revised family communication pattern instrument (McNaughton & Niedzwiecki, 2021)	Parent-child closeness was negatively correlated with problematic social media use ($r = -.31$)
Wang et al., 2022	Cross-sectional	4172	47.53% girls ($M_{age} = 16.41$; $SD = 0.77$)	Asia	Adapted version of the Facebook Intrusion Questionnaire (Elphinstone & Noller, 2011) by changing Facebook to social networking sites	Generic Scale of Being Phubbed (GSBP; Chotpitayasonondh & Douglas, 2018)	Father phubbing was positively associated with social networking site addiction ($r = .26$)
Chao et al., 2023	Cross-sectional	1346	52% girls, 12–18 years ($M_{age} = 14.97$, $SD = 1.13$)	Asia	Short version of Smartphone Addiction Scale (SAS-SV) (Kwon et al., 2013). The word "smartphone use" was replaced with "short video application use"	The 21-item short form of Egna Minnen Beträffande Uppfostran: One's Memories of Upbringing (s-EMBU) was used (Arrindell et al., 1999; Jiang et al., 2010)	Short video addiction was negatively related to parent-adolescent relationship ($r = -.08$) and positively associated with parental rejection ($r = .18$) and overprotection ($r = .22$). It was unrelated to parental warmth

Table 1 (continued)

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Fasifi and Rostami, 2023	Cross-sectional	346	59% girls ($M_{age} = 16$, $SD = 1.98$)	Middle East	Social Network Addiction Questionnaire (SNAQ) (Khajejmadi et al., 2017)	Revised family communication patterns instrument (Fitzpatrick & Ritchie, 1994)	Conversation-oriented family communication was negatively related to all subscales of mobile-based social network addiction ($r = -.14$ – $r = -.35$). Conformity-oriented family communication was positively related to all subscales of mobile-based social network addiction ($r = .16$ – $r = .22$)
Feng et al., 2023	Cross-sectional	1506	49% girls ($M_{age} = 13.74$ years, $SD = 0.98$)	Asia	Problematic Social Media Usage Questionnaire for Chinese Adolescents (Jiang, 2018)	The family support subscale of the Resilience Scale for Chinese Adolescents (Hu & Gan, 2008)	Perceived support from family was negatively associated with problematic social media use ($r = -.22$)
Hawk et al., 2023	Cross-sectional	181	58% girls ($M_{age} = 13.27$, $SD = 0.70$)	Asia	A 9-item measure (Du et al., 2018; LaRose & Eastin, 2004) was adapted to measure adolescents' problematic social media use	Youth-focused screen rules based on a measure of Gower and Moreno (2019)	The prevalence of youth-focused screen rules was not related to problematic social media use
Khodarahmi et al., 2023	Cross-sectional	421	Only girls 13–18 years old	Middle East	The Bergen Social Media Addiction Scale (BSMAS, Andreassen et al., 2017). Two groups made based on cut-off point of 24	Multivariate assessment of conflict in distressed and nondistressed mother-adolescent dyads (Prinz et al., 1979). In this study, the 20-item short form of the scale was used, with two separate versions for the father and the mother	Conflict with mother was more common among adolescents with social media addiction ($\chi^2(1) = 51.29$, $p = <.001$) Conflict with father was more common among adolescents with social media addiction ($\chi^2(1) = 80.52$, $p = <.001$) Parental psychological control was more common among adolescents with social media addiction ($\chi^2(1) = 91.30$, $p = <.001$)
Leijse et al., 2023	Longitudinal	1384	52% girls, 11–19 years ($M_{age} = 14.1$, $SD = 1.03$)	Europe	Social Media Disorder Scale (Van den Eijnden et al., 2016)	Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988)	Perceived support from family was significantly negatively associated with problematic social media use at T1 ($r = -.19$) and T2 ($r = -.13$)
Lin et al., 2023	Cross-sectional	844	58% girls ($M_{age} = 16.89$ years, $SD = 1.89$)	Europe	The Bergen Social Media Addiction Scale (BSMAS, Andreassen et al., 2016)	The Parent-Adolescent Relationship Scale (PARS, Burke et al., 2021)	A better parent-adolescent relationship was related to less social media addiction ($r = -.16$)

Table 1 (continued)

Authors	Study design	Sample size	Sample characteristics	Data collected in	PSMU measures	Parenting measures	Results based on bivariate relations
Lin et al., 2023	Cross-sectional	1056	52.2% girls, 12–17 ($M_{age} = 14.16$; $SD = 1.21$)	Asia	The Adolescent Problematic Mobile Social Media Usage Assessment Questionnaire (Jiang, 2018)	Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988)	Perceived support from family was negatively associated with problematic social media use ($r = -.18$)
Rudnova et al., 2023	Cross-sectional	4011	48% girls, 13–15 ($M_{age} = 14.07$, $SD = 0.76$)	Asia	Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2016)	Parental mediation (Kuzmanovic et al., 2018)	Social media addiction correlated positively to active mediation ($r = .11$) and negatively to parental media control ($r = -.16$).
Salehi et al., 2023	Cross-sectional	372	47% girls in the total sample, not provided for the adolescent group (17–19 years)	Middle East	Bergen Social Media Addiction Scale (Andreassen et al., 2016)	Attachment Style Questionnaire (ASQ; Feeney et al., 1994; adapted to Persian by Khodabakhsh, 2012)	Social media addiction was negatively associated with a secure attachment style ($r = -.44$) and positively associated with dismissive-avoidance ($r = .13$ – $r = .38$) attachment and anxious-preoccupation attachment styles ($r = 24$ – $r = 47$)
Wang et al., 2023	Longitudinal	858	47% girls ($M = 11.69$ years, $SD = 1.11$)	Asia	Short-From Video Addiction (Choin & Lim, 2016) was based on the Social Network Service Addiction Scale	Harsh parenting (Wang, 2017) for fathers and mothers separately	Harsh fathering and harsh mothering were significantly and positively related to short-form video addiction cross-sectionally ($r = .22$ – $r = .33$) and longitudinally ($r = .12$ – $r = .32$)
Wartberg et al., 2023	Cross-sectional	480	45.2% girls, 15–19 ($M_{age} = 16.84$; $SD = 0.97$)	Europe	Social Media Disorder Scale (Van den Eijnden et al., 2016)	Child-Parent Relationship Test (ChIP-C; Titzel et al., 2014)	PSMU was significantly related to lower autonomy of the child ($r = -.29$), more conflicts with the mother ($r = .28$), more frequent punishment of the child ($r = .28$), more rejection and indifference ($r = .22$), more emotional burden ($r = .12$) of the mother, more pronounced maternal overprotection ($r = .21$), and more help for parents ($r = .16$)

^aCorrelation cannot be provided since the correlation table does not include labels and the correlation is not mentioned in the text. as was the case for positive parenting. The text just mentions that the correlation was significant

which are based on the DSM-5 criteria for internet gaming disorder. Other instruments that were employed, such as the Smartphone Addiction Scale SAS, [24], measured a selection of the components of behavioral addiction.

Main Findings

Based on the parenting measures included in the studies, we made a global distinction between studies focusing on general parenting practices and family relations and studies focusing on parenting related specifically to internet and social media use (i.e., internet-specific parenting measures).

General Parenting and Family Relations

Parent–Child Relationship and PSMU A total of 15 studies investigated the association between the parent–child relationship and PSMU. These studies were all cross-sectional in nature and based on youth reports. The studies employed different conceptualizations of parent–child relationship such as parental attachment [25–29], parental bonding [30, 31], parent–child relationship quality [27, 32–37], and parent–child communication [31, 38, 39]. All 15 studies showed a negative association between the quality of the parent–child relationships and problematic social media use. Correlations were small to moderate (see Table 1). These studies indicate that adolescents who experience a better relationship with their parents report less symptoms of problematic social media use.

Family Climate and PSMU We identified 10 studies who investigated the association between family climate and PSMU [6••, 20••, 40–45]. These studies focused on satisfaction with family life [43–46], family support [6••, 20••, 42, 47], family relationships [40], family communication [48], and interparental conflict [41]. All these studies were cross-sectional, except for Leijse et al. [20••], and were based on youth reports. These studies all showed a negative association between family climate and PSMU, meaning that adolescents who experience a more supportive family environment, with a more conversation-oriented communication style, and who are more satisfied with their family life, report less symptoms of PSMU. The correlations were all small except in the study of Savci et al. [43]; $r = -0.45$ (Table 1).

General Parenting and PSMU Nine studies specifically focused on general parenting and PSMU. Generally, these studies show that parenting characterized by affection [38, 49, 50], responsiveness [51], and demandingness [51], as well as positive parenting in general [9, 52] was related to less symptoms of PSMU. However, Gugliandolo et al. [53] did not find a significant correlation between parental

autonomy support and PSMU and Chao et al. [54] did not find a significant correlation with parental warmth.

Parenting characterized by inconsistency [38], rejection [54], overprotection [54], harsh parenting [21••], and psychological control [36, 53] is correlated with more symptoms of PSMU. Parental neglect was, however, unrelated to PSMU [55].

Domain-Specific Parenting Behaviors

Internet-Specific Parenting In total, eight studies investigated the relation between internet-specific parenting and PSMU. While almost all studies were cross-sectional in nature, one study [11••] used a longitudinal design. Several aspects of internet-specific parenting were investigated, which could roughly be divided into parenting actions directed at limiting media use (restrictive mediation) and parenting actions directed at supporting/guiding media use (active mediation). Studies looking at restrictive mediation demonstrated mixed findings. In general, these studies did not find a relation between restrictive mediation regarding the internet content and PSMU [31, 38]. However, when restrictive mediation specifically constituted setting rules about when, where, and for how long social media can be used (i.e., rule setting), two studies demonstrated a negative association with PSMU, suggesting that more restrictive parenting was associated with less PSMU [9, 11••], whereas the study by Hawk et al. [56] did not find this relation. When restrictive mediation was constituted of intervening with adolescents' ongoing social media use (i.e., reactive restrictions, e.g., ordering children to stop their social media use), a positive association with more PSMU was found [9, 11••]. These associations were also established longitudinally [11••]. Thus, the role of restrictive mediation is different for rules about access to online devices (when, where, and how long) mostly set in advance and rules about the content, with more promising relations for rules about access.

Studies looking at how parents support or guide media use (i.e., active mediation) also showed mixed findings. Sun et al. [57] found that active mediation was associated with less PSMU, whereas Rudnova et al. [58] found a positive association with PSMU. Albeladi and Palmer [40] as well as Lee and Kim [31, 38], on the other hand, found no relation between active mediation and PSMU. However, a study by Lee and Kim [38] showed that there was a negative association between active mediation and PSMU when age, gender, and SES were included as control variables. Overall, the evidence for an association between active parental mediation and PSMU is inconclusive.

Parental Phubbing Four studies investigated parental media use in relation to adolescent PSMU [9, 38, 39, 59]. These

studies investigated specifically whether parental social media use during parent–child interaction (i.e., parental phubbing or parental technoference) was associated with PSMU. Dong et al. [59] and Geurts et al. [9] found a positive association between adolescents' reports of parental phubbing and PSMU. In line with this, Wang et al. [39] found a positive association between adolescent reports of father phubbing (they did not investigate mother phubbing). Lee and Kim [38] however did not find a significant bivariate correlation between maternal phubbing and adolescents' PSMU. Overall, there seems to be evidence that parental media use during parent–child interaction is related to higher levels of PSMU.

Discussion

The current review, including 43 unique studies, has provided several insights regarding the role of parents in adolescent PSMU. There is consistent evidence that positive parent–child relationships as well as a positive family climate at home are related to less PSMU. Similarly, most studies indicate that positive parenting, parenting that is characterized by affection, responsiveness, and demandingness, is associated with less PSMU, whereas parenting characterized by inconsistency and control is associated with more PSMU. Regarding internet-specific parenting, the overall picture is less consistent. There is some evidence that restrictive mediation is related to less PSMU, but this only seems to hold for parental rule setting (i.e., parents setting rules about when, where, and how long adolescents are allowed to use social media). Reactive restrictions (i.e., active intervening when adolescents are engaged in social media use), on the other hand, seems to be linked to more PSMU. Active mediation (i.e., parenting directed towards supporting and guiding social media use) is not consistently related to PSMU. Finally, studies indicated that parental phubbing (i.e., parental social media use during parent–child interactions) is related to more PSMU.

This systematic review indicates that there is more evidence that positive parent–child interactions and positive general parenting practices (e.g., affection and responsiveness) may help to prevent adolescents' PSMU than internet-specific parenting practices that aim at guiding or restricting adolescents' internet use. This is in line with cross-sectional research that investigated the relative predictive value of both general and internet-specific parenting practices [9]. Both these studies indicate that a supportive general parenting context is more important in preventing PSMU than limiting adolescents' internet use.

Regarding internet-specific parenting practices, there is some evidence that restricting adolescents' online access to online devices by means of internet-specific rules may

help to prevent PSMU. In this regard, however, it should be noted that the way in which these rules are set seems of crucial importance. Reactive restrictions, intervening while adolescents are on their phones or otherwise engaged in social media use, seem to work counterproductive, probably because it stimulates reactance as adolescents are interrupted doing something that they experience as important and threatens their freedom [11••, 60]. Also, once adolescents have developed any symptoms of PSMU, setting rules related to accessibility are less likely to be effective [2, 20••]. In addition, it seems plausible that rules must be age-appropriate and should be set prior to the development of PSMU symptoms.

The way parents support or guide media use, i.e., active mediation, was not consistently related to adolescents' PSMU. This may be attributed to the diverse ways in which this concept is operationalized, ranging from using media together to communicating about safe media use. Thus, to better understand the role of internet-specific support and guidance, it is necessary to specify parenting strategies more precisely, outlining how parents can support and guide safe online behaviors.

Overall, considering the studies conducted on internet-specific and general parenting, it seems a challenge for parents to effectively set strict rules as peers become more important during adolescence [61], and social media facilitate contact with peers throughout the day. Therefore, when it comes to social media use, it is of crucial importance to set age-appropriate rules in a context of positive parenting characterized by mutual attachment, respect, and proactive and empathetic parenting.

Finally, the results show that parental phubbing is positively related to adolescents' level of PSMU. This is not surprising given the increasing evidence indicating that parental engagement in smartphone use while interacting with their children interferes with a healthy development, for instance, the development of emotional intelligence [62]. The present findings, therefore, suggest that it is crucial for parents to be mindful of and restrict their own smartphone usage while engaging with their children. Surprisingly, there were no studies investigating parents' own social media use in relation to their offspring's PSMU. This warrants further research on the role of parents modeling behavior in adolescents' PSMU.

Limitations

Before discussing the implications of this review, we highlight some limitations of the included studies. First, out of the 43 unique studies included in this review, all but three studies used a cross-sectional design. Of the three longitudinal studies, only one tested bidirectionality between parenting and PSMU. This single study indicated that

internet-specific rule setting predicted lower levels of PSMU and that PSMU did not predict later internet-specific parenting [11••]. However, this same study showed clear effects of adolescents' problematic gaming on subsequent parenting behaviors. More specifically, problematic gaming predicted an increase in reactive restrictions and frequency of communication about internet use. To rule out that part of the findings of this review has resulted from PSMU affecting general and internet-specific parenting practices, it is crucial that future longitudinal research further addresses the bidirectionality of these relationships. Second, the found associations between PSMU and parenting behaviors were small to moderate. Therefore, the potential influence that parents can exert on the prevention of PSMU seems to be modest, yet largest before any PSMU symptoms are displayed [63]. Third, although we found some studies that investigated the role of parental phubbing, no studies tested associations between parents' intensity of social media or smartphone use and adolescents' PSMU. Future research should further illuminate this specific relationship as we know that parental modeling is taken place across youth development. Fourth, perhaps some of the current findings should be attributed to the inclusion of measures of PSMU that involve an item assessing conflicts with parents due to ones' social media use. This, for instance, may (partly) explain why reactive restrictions were positively related to PSMU, as reactive restrictions can be expected to lead to more conflicts with parents compared to well-communicated, positive parenting approaches where children feel understood and valued by their parents.

Suggestions for Future Research

Despite the insights obtained in the current review, we need a better understanding of how parents can influence, and more importantly prevent, the development of problematic social media use. Based on this review, we describe several suggestions for future research related to the design, the targeted sample, and relevant moderators.

First, studies with a longitudinal design are needed to investigate the direction of effects as well as changes in parenting practices over time. This provides imperative knowledge about the preventive role of parents in adolescents' PSMU. Within these longitudinal studies, a more specific conceptualization and operationalization of parenting practices is needed [64•]. For instance, more objective instruments, such as observation, to measure positive parenting and parent–child interactions. These instruments might more closely resemble daily interactions between parents and children than subjective self-reports. This is important in investigating which specific parenting behaviors increase the risk of problematic social media use and which behaviors help to prevent it.

Second, more insight is needed into how parents of vulnerable youth (e.g., youth with neurodivergence, mental disorders, chronic illness) can prevent PSMU. Current studies are mostly targeting the general population. Vulnerable youth might have a higher risk of developing problematic social media use [65, 66], and at the same time, parents of vulnerable youth might face more parental challenges [67]. It is imperative that future research also investigates the role of parenting in PSMU within samples of vulnerable youth, to inform prevention and intervention for these youth.

Finally, inconsistent findings regarding parental mediation practices might be the result of specific moderators that should be investigated in future research. Previous research has suggested that the way in which rules are set matters. When rules are set in an autonomy-supportive way, they are more effective than when they are set in a controlling way [68]. Furthermore, the extent to which rules are enforced might also determine the effectiveness of the rules. Future research should not only measure the presence and frequency of parental mediations strategies but also investigate how these strategies are implemented and executed.

General Conclusion and Implications

Positive parent–child relationships and a positive general parenting style, in combination with setting clear age-appropriate rules about social media (and smartphone) use, while avoiding at-the-moment impulsive interferences, seem to be the most promising parenting strategy to avoid adolescent children from developing PSMU. Moreover, parents are more likely to prevent the development of PSMU before the adolescents display any PSMU symptoms. However, longitudinal research is strongly required to confirm the suggested directionality of these findings.

Considering all studies included in the review, findings do imply that internet-specific rule setting should take place before children start to use social media and that these rules should be adapted in accordance with the standards and norms of peer groups during the course of adolescence. More importantly, parents should invest in maintaining a positive relationship and family climate when setting these rules. Moreover, it is preferable to set these standards in consultation with the parents of friends and peers. This approach can help reduce peer pressure due to differences in access to online devices.

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Conflict of Interest The authors declare no competing interests.

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