

The relationship between social media use, social connectedness, and mental health among adolescents: A scoping review

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Abstract

Background

Social connections serve as a protective factor for adolescent mental health. An increase in the use of online technology among adolescents has influenced their social connectedness and mental health in various ways. However, it remains unclear how the dynamic between adolescents' use of social media, their sense of connectedness, identity development, and mental health works. This study will provide a comprehensive understanding of current literature and identify key themes and gaps on this dynamic by answering the following question: How does social media use influence the mental health impact of social connectedness among adolescents, both positively and negatively?

Methods

This study employs a scoping review to synthesize current literature on how social media use influences the mental health impact of social connectedness among Western adolescents (ages 11-19). The review used Scopus, PubMed, and PsycInfo databases and applied the PICOST system to ensure eligibility criteria. 32 articles were analyzed; the selection process involved screening titles and abstracts, full-text analysis and quality assessment.

Results

Three main themes are identified in relation to social media use and mental health: social identity and expression, social connectedness and relations, Covid-19. Social media can both positively and negatively affect adolescent social connectedness and mental health, depending on the nature and extent of its use. Social media plays a crucial role in identity development, especially for marginalized groups, but also introduces risks such as stress and cyberbullying. The pandemic underscored the importance of social media in maintaining social connections during isolation.

Conclusion

Results highlight the complex relationship between social media use, social connectedness, and mental health among adolescents, revealing both positive and negative effects influenced by various factors. Key gaps include inconsistent definitions of social media use, the need for more objective and longitudinal studies, and the importance of considering context and individual differences. Future research should adopt interdisciplinary approaches and focus on understanding these dynamics to inform effective interventions and policies.

Key words: *social connectedness, social identity, social media, mental health, adolescence, social relations*

Problem statement

Globally, one in seven adolescents experiences a mental disorder (WHO, 2021). This trend is also found in the Netherlands where mental health issues among Dutch secondary school pupils have notably risen over the past 20 years. Moreover, they were as high as ever in 2022 with about 30% of adolescents reporting emotional problems, 42% experiencing attention deficits, and 63% reporting psychosomatic symptoms weekly (Stevens et al., 2023). The latest edition of the Mental Health Inventory-5 in 2021 reveals negative changes compared to 2019, with more mental health issues reported among female adolescents in particular (CBS, 2022). A higher number of adolescents reported that they were feeling unhappy, being down in the dumps and were suffering from anxiety. Furthermore, they mentioned that they felt downhearted and blue a good bit of the time, most or all of the time. The consequences of failing to address mental health conditions extend to adulthood, impairing both their physical and mental health and limiting their opportunities to lead fulfilling lives (WHO, 2021). Hence, investigating new avenues for interventions to promote adolescents' mental health is warranted.

In addressing mental health conditions among adolescents, social relations are becoming increasingly important (Hoffman et al., 2023; Long et al., 2021), as their social environment surrounding today's youth is significantly different from what it was in the late 20th century (Ahlborg et al., 2023). Adolescents, to a great extent, have not been considered active agents in forming their own social capital. Social relations across the domains of family, school, peers, and neighborhood have been linked to various health benefits and are considered imperative for adolescent mental well-being (Jose, 2012). Not surprisingly, social interactions and feeling connected is vital for young children and adolescents whose brain and behaviors are still developing. In other words, social connectedness does not only fulfill a basic human need but also acts as a cornerstone for mental and emotional well-being.

Social interactions are intertwined with all the layers of an adolescents' social environment, or socio-ecological system, varying from an individual level to their living environment such as schools, and to larger cultural and societal contexts (Bronfenbrenner, 1979). With the rise of technology in this digital era, a new dynamic has emerged, interplaying with all the levels of the socio-ecological system. Social media has become an integral part of society, especially for youth. Consequently, their social relationships have expanded over the digital realm as well (Wu et al., 2016), therefore changing the nature of their social relations. The immediate environmental experiences impact individuals' actions and interactions, ultimately affecting their mental health (Long et al., 2021). Social interactions, and its impact on mental health and well-being, thus can be seen as a product of the complex interplay between individuals and the surrounding environment (Long et al., 2020). Social relations, both online and offline, appear to be a promising approach to reducing mental health issues among adolescents.

However, there remains a significant scientific gap in the comprehension of how these social interactions within the digital sphere occur. As the advent of social media use is relatively new and such a rapid social and behavioural change, research on this topic is new as well. While numerous studies indicate that young people frequently use digital platforms for social interactions, it remains unclear

how adolescents' use of social media affects their sense of connectedness, identity development, and mental health (Wu et al., 2016; Smith et al., 2021). Research on how to leverage the potential power of social interactions as a protective factor for mental health is lacking, especially on the relationship between social media use and social connectedness. Hence, there is need for a scoping, state-of-the-art review of the existing literature to explore how positive social interactions online can be used to enhance mental health outcomes in adolescents.

Apart from scientific relevance, harnessing the potential of social connectedness to improve mental health outcomes in children also holds societal relevance. Current interventions in this area are mainly aimed at the child itself, their family and their teachers. As a result of this, it is overlooked that social relations and connectedness between children and young people (in the school context) can have a positive protective role in the mental health of youth. Moreover, teachers often still fail to respond correctly to their students' phone and social media use (Van den Beemt et al., 2020). These online social interactions can potentially be leveraged into preventive interventions. The focus on improving mental health conditions through social connectedness can help better the mental health of adolescents and consequently prevent the need for expensive individual clinical care (Castrucci & Auerbach, 2019). In summary, this scoping review shall provide an overview of the existing literature on what is known on the complex relation between social connectedness, social media use and mental health, providing directions for future research and recommendations for interventions.

Empirical & theoretical framework

Over the past decade, the relationship between social media use, social connectedness, and mental health in adolescents has been an area of intense research focus. There is a substantive amount of research that highlights the harmful effects of social media on mental health, with greater levels of social media use being associated with depression and lower self-esteem (Bailey et al., 2022; Barthorpe et al., 2020; Flynn et al., 2022). In everyday life, social media usually gets associated with negative effects on mental wellbeing. Excessive use of social media can indeed have detrimental effects for mental health, especially for vulnerable groups, such as adolescents of whom their brain is still under development and for individuals that have pre-existing mental health issues (Flynn et al., 2022). Thus, these effects need to be considered when analyzing the dynamics of social media use on social connectedness and mental health.

However, recent research also provides substantial evidence that social media use can positively influence mental health (Al-Jbouri, 2024). Key elements of social relationships, such as friendship quality, social connectedness, and social identity, are found to be positively affected by social media use (Allen et al., 2014; Haddock et al., 2022).

The following section discusses the existing literature on social connectedness, social media use and the dynamics between these two terms through a dual theoretical lens. The perspective of the Ecological Systems Theory and the Social Identity Approach are applied. Through this dual-theoretical

lens, the role of social media in shaping mental health among youth through mechanisms of social identity and connectedness becomes clearer.

Social connectedness

Research over the past two decades has increasingly underscored the impact of social relations on adolescent mental health (Hoffman et al., 2023; Long et al., 2021). An important aspect of social relations is social connectedness, as it is a determinant for the quality of one's relationship. Social relations and social connectedness are used interchangeably in literature. Social connectedness, which includes feelings of belongingness, attachment, and satisfaction with relationships across multiple social domains such as family, school, friends, and community, serves as a significant determinant of well-being both during adolescence and into adulthood (Jose et al., 2012). As social connectedness is the core driver behind good social relations, this review uses social connectedness as its construct.

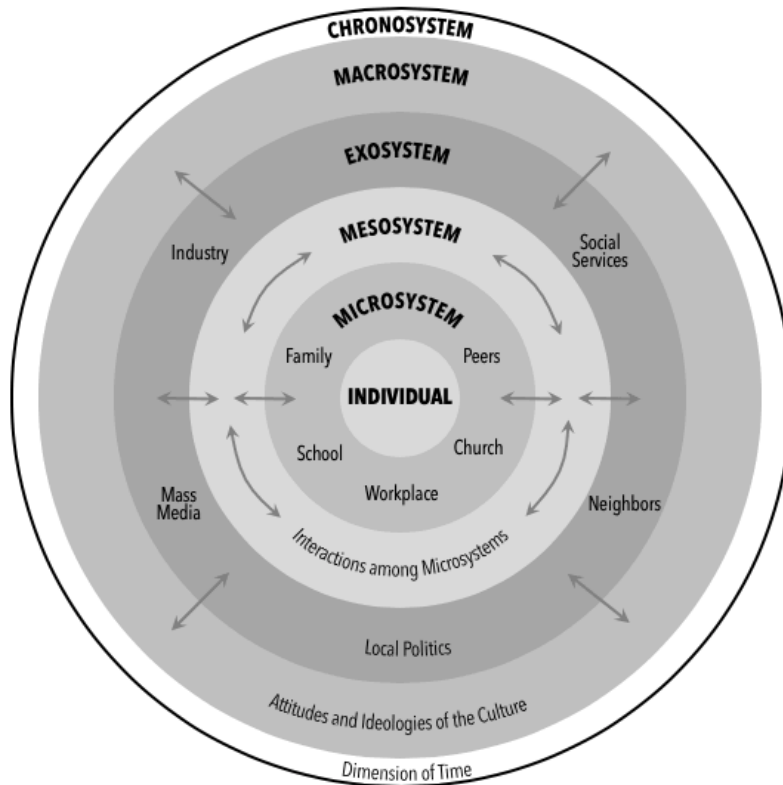
Studies have consistently shown that higher levels of social connectedness act as a protective factor against various risk behaviors and negative mental health outcomes, such as depression, and loneliness. Researchers such as Hoffman and colleagues (2023) highlight how adolescents with strong connections in their immediate social environments experience better mental health outcomes. It is considered a protective resource, that can facilitate positive mental health outcomes, such as resilience and improved life satisfaction. In fact, social connectedness can be considered crucial during adolescence, as it can have a lasting positive effect on mental health and predict well-being later in life (Olsson et al., 2013). The concept of social connectedness goes beyond just interaction; it involves deep feelings of integration and satisfaction within a person's social world, which includes self-identity formation and a sense of belonging. Social connectedness is defined as "the degree to which a person experiences belongingness, attachment, relatedness, togetherness, or entrenchment in one's social relationships. It refers to subjective feelings and attitudes towards one-self in relation to the social context, rather than to specific relationships" (Santini et al., 2015, p. 54, cited in Hoffman et al., 2023). According to this definition, social connectedness is considered a meso-level concept that crosses between the broader social context at the macro level and the individual self at the micro level (Hoffman et al., 2023).

The Ecological Systems Theory, developed by Urie Bronfenbrenner (1979), is relevant for researching the promotion of adolescents' mental health, particularly concerning social relationships (see Figure 1). This theory emphasizes the interconnectedness between individuals and their environments, highlighting how various systems influence development. These environments include the microsystem (immediate surroundings), mesosystem (interactions between microsystems), exosystem (external settings impacting development), macrosystem (cultural and societal context), and chronosystem (changes over time) (Kilanowski, 2017). Bronfenbrenner's theory encourages interventions that not only address individual needs but also the broader social contexts impacting social connectedness and mental health. The theory's focus on interconnectedness provides a robust framework

for developing effective, sustainable solutions to foster mental health from adolescence to adulthood (Long et al., 2021). Overall, the literature strongly supports the importance of fostering social connections with meaningful groups as essential strategies for enhancing adolescent mental health and laying a foundation for a healthy adult life.

Figure 1

The Ecological Systems Theory (Bronfenbrenner, 1979)



Social media use

As mentioned, social relationships are partly shifting towards the internet and social media, thereby reshaping the social world, especially for adolescents. A study carried out across six European countries, including the Netherlands, revealed that 69.5% of adolescents aged 14 to 17 engage with social media every day, and 38.8% spend over two hours daily on these platforms (Tsitsika et al., 2014). Social media allows users to engage in a variety of activities including entertainment, communication, and information seeking, making social media use an integral component of daily life for many. Carr & Hayes (2015, p. 50) define social media as the following: “Social media are Internet-based, disentrained, and persistent channels of masspersonal communication facilitating perceptions of interactions among users, deriving value primarily from user-generated content.” By adopting this definition, social media platforms need to be internet-based (online) and support non-live interactions, which means they facilitate communication that doesn't occur in real-time. Additionally, these platforms need to be interactive and viewed as social by nature, with the core value deriving from digital social engagement.

It is characterized by its mass personal capability, which allows users to communicate to broad audiences. Lastly, social media use in the current research does not differentiate between device type.

In the digital age, social media platforms and online communities serve as spaces where adolescents can explore and express different aspects of their social identity, such as interests, affiliations, and values (Allen et al., 2014). The Social Identity Approach, consisting of the *Social Identity Theory* (SIT; Tajfel & Turner, 1979) and *Self-Categorization Theory* (SCT; Turner et al., 1994), is highly relevant for explaining the influence of the digital environment in the formation of social identities and its' impact on social connectedness and mental health among adolescents.

Social Identity Theory (SIT) suggests that individuals derive a significant part of their identity from the groups they belong to (in-groups) and contrast these with groups they don't belong to (out-groups) (Trepte & Loy, 2017). A positive social identity enhances self-esteem, whereas a negative social identity can result in competition. According to this perspective, social identification, i.e., the emotional evaluation of the self in relation to important social groups, can significantly enhance mental health (Hoffman et al., 2023). This is not just the result of frequent social contact but is driven by the strong identification with one's groups, which offers psychological resources such as social support and a greater sense of self-efficacy to cope with life stressors. Self-Categorization Theory (SCT) focuses more on the cognitive processes by which individuals categorize themselves into social groups (Trepte & Loy, 2017). It differentiates between social and personal identity. SCT suggests that behavior is influenced by the salience of social or personal identities in a given situation, with the potential for both identities to be active simultaneously, influencing attitudes and behavior through their interaction. The digital environment provides opportunities for adolescents to connect with like-minded peers, share experiences, and receive validation, contributing to the development of a positive social identity and influencing their behavior in a positive manner. Together, the Social Identity Approach highlights how the digital environment plays a crucial role in the formation of social identity for adolescents. Interventions based on enhancing social identification have proven moderately effective in promoting health and well-being in community settings (Hoffman et al., 2023). Therefore, social media use seems a promising way to promote identity formation and mental health in adolescents.

From a socio-ecological perspective, social media use can be viewed through multiple lenses: it is a mediator of interpersonal relations, it allows interaction within various ecological layers of an adolescent's environment, and it is a daily activity that both influences and is influenced by the layers of their surrounding social systems (Milosevic et al., 2022). Social media interacts with the layers of adolescents' ecological system by spreading information and influencing norms and behaviors at a rapid pace. For instance, positive feedback on social media can enhance personal wellbeing and influence interpersonal relations offline (Haddock et al., 2022). Furthermore, social media can create a dynamic feedback loop between the layers where experienced interactions can immediately influence an individual's thoughts and behaviors, which in turn can affect their social environment and mental health. Overall, social media platforms can be seen as social ecosystems that can significantly enhance social

connectedness by providing opportunities for interaction and identity formation, thus playing a crucial role in the social development of adolescents (Haddock et al, 2022).

Social connectedness & Social media use

Research on social media use and social connectedness show both positive and negative effects, however, there has been an emphasis on harmful relationships (Vaingankar et al., 2022). Concerns often revolve around the displacement effect, where time spent on social media might interfere with other activities that are beneficial for development and connectedness, such as participating in extracurricular activities or having face-to-face interactions. Allen and colleagues (2014) state that the quality of online interactions can affect psychosocial wellbeing. Excessive online interaction, in particular with strangers, can increase feelings of alienation, especially among vulnerable groups. In addition, the risk of cyberostracism – feeling excluded or ignored online – can lead to feelings of loneliness and isolation, negatively impacting their mental health. Lastly, considered from the Social Identity Approach, the public nature of social media can also pose risks to identity formation, with negative feedback, co-rumination and cyberbullying being problematic risks (Allen et al., 2014).

However, a growing body of literature shows the strength social media can have on peer relations and mental health. Social media facilitates social interaction regardless of physical location or time, thereby enhancing sense of belonging and connectedness (Allen et al., 2014; Haddock et al., 2022). It can be seen as an opportunity for support in times when face-to-face interactions are limited, for instance in the lockdowns during COVID-19 (Bailey et al., 2022). Furthermore, it is a less intimidating environment for communication which could enhance social interaction and reduce isolation for people that struggle with face-to-face interactions, such as adolescents that suffer from social anxiety or loneliness. These platforms also allow for self-expression and exploration, important aspects during adolescence (Allen et al., 2014). Moreover, adolescents can connect and interact with likeminded peers, which enhances feelings of social support and friendship quality, thereby increasing social connectedness (Haddock et al., 2022).

In short, the relation between social media use and social connectedness on mental health impact is predominantly explained as a unidirectional relationship in current literature, with social media use being either 'good' or 'bad' for social relations. This reflects the competing processes of stimulation and displacement presented by social media use, highlighting the dual effects of digital environments in the social ecology of adolescents (Allen et al., 2014; Milosevic et al., 2022). However, a good or bad binary is too simplistic to grasp the complex dynamic between adolescents and social media effects (Al-Jbouri, 2024).

Current study

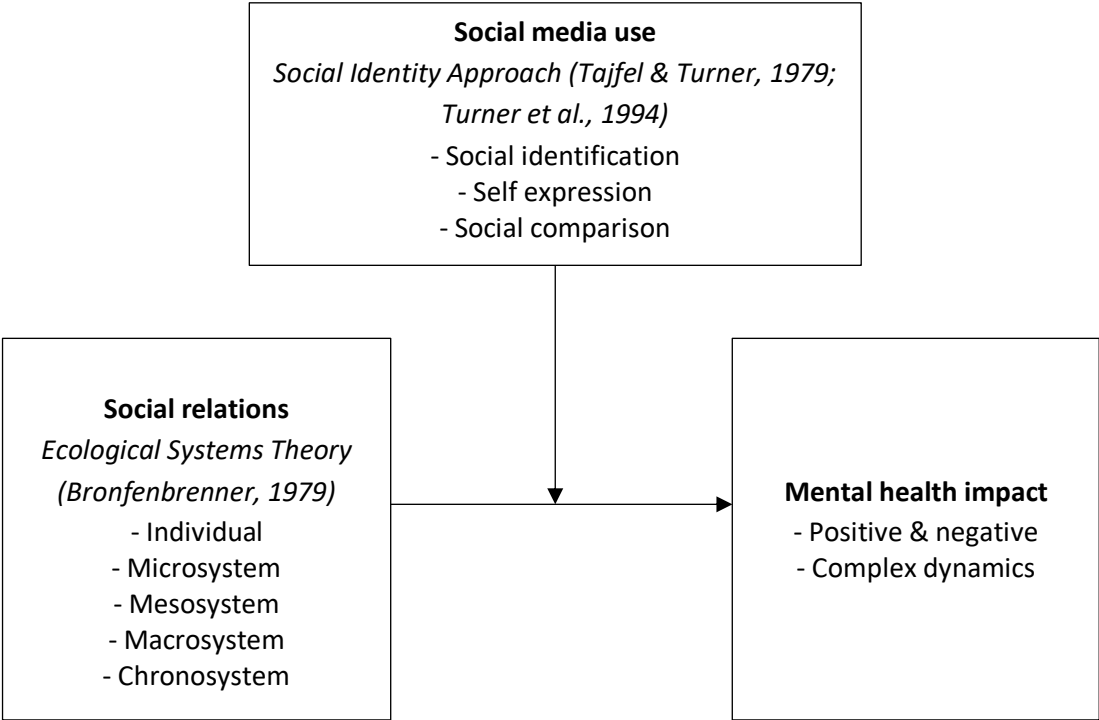
In conclusion, the gap in understanding the multifaceted influences of social media on youth requires a nuanced analysis of how these digital interactions are embedded within and affect the various layers of

an adolescent's social environment. Figure 2 provides a visual representation of the conceptual framework. This scoping review will provide a comprehensive understanding of the breadth and depth of research in this area and identify key themes and gaps by answering the following research question:

“How does social media use influence the mental health impact of social connectedness among adolescents, both positively and negatively?”

Figure 2

Visual representation of the conceptual framework



Methods

Study design

The present study applied a scoping review to synthesize the current literature on the influence of social media use on the mental health impact of social connectedness. A scoping review is often used in healthcare research domains to systematically outline the existing literature on a topic (Taherdoost, 2023). This review type searches for key concepts, theories, and the origin of evidence, and most importantly addresses the current gaps in research. Because the rise of social media use is relatively new and a rapidly evolving domain, a scoping review poses the best tool to give clear indication of the volume of literature available and an overview of its focus.

Eligibility criteria

The PICOST system is applied to ensure eligibility (in- and exclusion) criteria:

- *Population:* The population researched are secondary school pupils or adolescents aged 11-19 in Western countries
- *Intervention:* Exploration of the influence of social media use on social connectedness or social relations
- *Comparator:* As this is a scoping review, studies without a comparison group can also be included
- *Outcomes:* The outcome should focus on mental health impact of social connectedness/relationships
- *Study design:* Study designs can vary between cross-sectional studies, randomized control trials (RCT's), observational studies, and qualitative designs including interviews and focus groups. The articles need to be peer-reviewed journal articles.
- *Timeframe:* Articles have to be published within the past 10 years (2014-2024)

Search strategy

This scoping review used Scopus, PubMed, and PsycInfo as academic databases to gather literature, as they cover the most literature on the disciplines of psychology, sociology, and other behavioural sciences and life sciences. The research terms used to find articles are shown in Table 1.

Table 1

Search strategy

1.	“Digital*” OR “social media*” OR “internet*” OR “smartphone*”
2. AND	"Adolescen*" OR “pupil*” OR “school-aged children*” OR “Youth*”
3. AND	“Mental health*” OR “well-being*”
4. AND	“Peer relation*” OR “social relation*” OR “social connect*”

Selection process & Quality assessment

The article selection process involved first screening the title and abstract on eligibility criteria. When in line with the eligibility criteria, the article was fully read and analyzed. Zotero is used as a reference manager, complemented by a PRISMA flow-chart to keep track of the selection process (Page et al., 2021).

After confirming eligibility criteria, the quality and risk of bias was assessed using the ROBINS-I and RoB2 tools (Sterne et al., 2016; Higgins et al., 2016). These quality appraisal tools are designed to evaluate a variety of study designs, making them well-suited for a scoping review. The ROBINS-I (Risk of Bias in Non-randomized Studies - of Interventions) is tailored for non-randomized studies,

while the RoB2 (revised tool for Risk of Bias in randomized trials) is intended for randomized trials. For the ROBINS-I, risk of bias was rated on a scale that includes ‘low risk,’ ‘moderate risk,’ ‘serious risk,’ ‘critical risk,’ and ‘no information.’ For RCT’s, the RoB2 tool was used, with ratings ranging from ‘low risk’ to ‘some concerns’ and ‘high risk.’

Data analysis & Coding

The articles selected provide information on the scope of information available on the mental health impact of social connectedness among adolescents. Sub-themes of coding consist of descriptive, contextual, methodological, theoretical, and sthematic codes. Data analysis is performed with use of a data extraction sheet. An overview of the included studies, their characteristics and risk of bias can be found in Table 2.

Results

Running the research terms in Scopus, Pubmed, and PsychInfo, resulted in retrieval of 427 articles. After screening the title and abstracts, 59 articles were qualified for full text analysis. At this last stage, 27 articles were excluded for not meeting the eligibility criteria and 32 articles were definitively included in the analysis. The data selection progress is presented in a PRISMA Flow Diagram (See Figure 3).

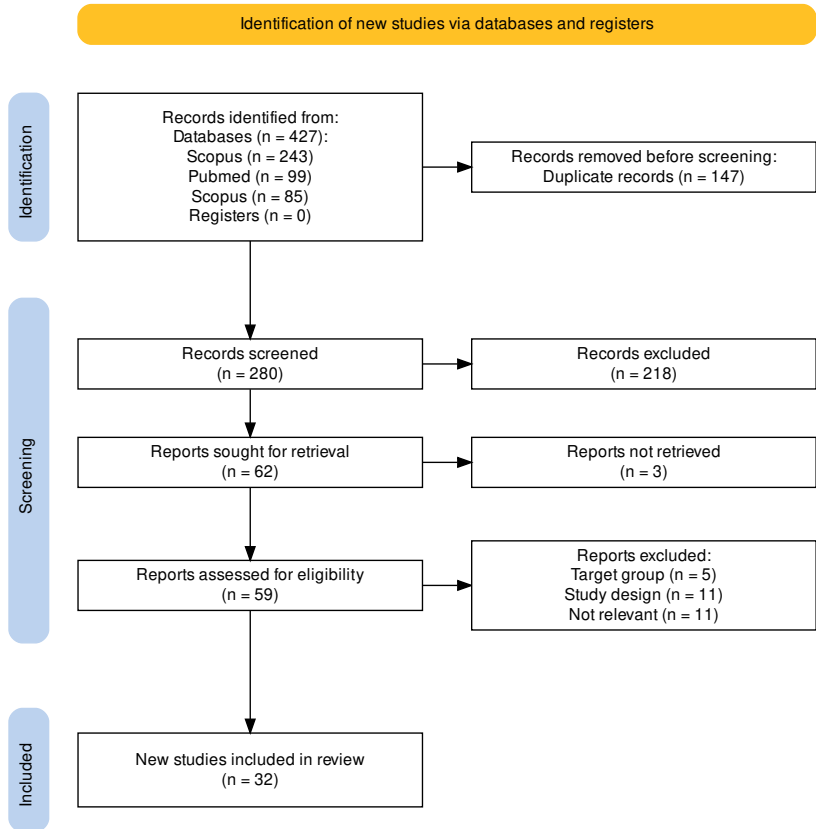


Figure 3
PRISMA Flow Diagram (Haddaway et al., 2020)

General characteristics

The majority of included articles were published in the last five years, between 2020 and 2024 ($n= 27$; 84.38%). There were only five publications from the earlier period of 2014 to 2019. The studies were conducted in thirteen countries. Over half of the articles originated from Europe ($n= 19$), with the United Kingdom as leading country with eight publications, followed by Germany with four. Beyond Europe, North America was the next most significant contributor, with the United States accounting for nine articles and Canada for four. Table 2 provides an overview of authors and year, country, study design, study population, objective, data collection method and risk of bias of the included articles.

Samples, data, and methods

The samples included in this review were secondary school pupils or adolescents aged 11-19 in Western countries. 17 articles focused on all three stages of adolescence: early adolescence (ages 11-13), middle adolescence (ages 14-16), and late adolescence (ages 17-19) (Barrett, 1996). The other half of the publications focused on a part of adolescence: from early to middle or from middle to late adolescence. Five articles focused on a subgroup of adolescence, with one focusing on adolescents with additional support needs, one focusing on adolescents in residential retirement, two focusing solely on girls and young women, and one focusing on adolescents with suicidal behaviors.

The research designs ranged from cross-sectional studies, randomized control trials (RCT's), to observational studies, and qualitative approaches. The predominant methodology was qualitative ($n= 11$), including five focus groups, five (in-depth) interviews and one daily diary study (See Table 2). Nine publications employed cross-sectional design, while seven articles conducted longitudinal studies, including one cohort longitudinal study. Furthermore, 2 studies used mixed methods designs and the three remaining articles were of quantitative nature, with one being an experimental design and two being RCT's.

Risk of bias was considered through ROBINS-I and RoB2 (Sterne et al., 2016; Higgins et al., 2016). The vast majority of the articles rated moderate risk of bias, which is typical for qualitative research and large-scale surveys, due to reliance on subjective data, selection bias and potential for uncontrolled confounding. Most longitudinal studies had low risk of bias, as this method considers the subjectivity of self-reported measures along with the strong data handling and confounding control techniques. One RCT (Pavarini et al., 2023) showed high risk of bias due to multiple reasons, such as significant baseline differences and selectively reported results. Remarkably, the second RCT (Pavarini et al., 2024) showed low risk, because of adequate randomization process and blind outcome assessment.

Table 2

Data extraction sheet

	Author and Year	Country of Study	Study Design	Study Population	Objective	Data collection method	Risk of bias: ROBINS-1/RoB2
1.	Bannon et al., 2015	UK	Qualitative study	Adolescents aged 13-18 with additional support needs, n=36	Explore how Internet use might contribute to the development of identity and social connectedness among young people with Additional Support Needs	Six focus groups	Moderate
2.	Boyd et al., 2024	USA	Cross-sectional study	Adolescents aged 12-18, n=4057	To examine the relationship between the perceived importance of three types of interactions and functions of social media use (bridging online and offline experiences, going outside one's identity or offline environment, and facilitating social connections) and depressive symptoms and suicidal ideation (SI) among adolescents.	Online survey	Moderate
3.	Chok et al., 2023	Switzerland	Qualitative study	Adolescents aged 12-19, n=28	To gather the opinions of adolescents in Switzerland on the emotional and behavioral problems the adolescents may currently face.	Online focus groups	Moderate
4.	De Coninck & d'Haenens, 2023	Estonia, Finland, Germany, Italy, Poland, Portugal	Cross-sectional study	Adolescents aged 11-20, n=6221	To explore differences in digital skills and digital activities between non-binary and binary youth and to understand how support structures and self-efficacy are linked to these differences.	Online survey	Moderate
5.	Ellis et al., 2020	Canada	Cross-sectional study	Adolescent high school students aged 14-18, n=1054	To examine the psychological adjustment and stress among adolescents during the initial phase of the COVID-19 crisis, focusing on their daily behaviors and their relationship with depression and loneliness.	Survey	Moderate
6.	Good, 2023	Canada	Qualitative study	Adolescents in residential retirement aged 13-18, n=15	To explore how digital media use influences wellness and recovery processes in youth undergoing residential treatment.	In-depth interviews	Moderate

7.	Hjetland et al., 2021	Norway	Qualitative study	Adolescent high school students aged 15-18, n=27	To explore adolescents' lived experiences of using social media, focusing on how they view social media as facilitating and/or hindering their mental health and well-being.	Focus groups	Moderate
8.	James et al., 2023	USA	Qualitative study	Girls aged 12-17, n=93	To investigate the associations between daily social technology use, peer closeness, and emotional health during the initial COVID-19 stay-at-home orders	Daily diary study	Moderate
9.	Kline et al., 2023	USA	Qualitative Study	Adolescents with suicidal behaviors aged 12-18, n=17	Examine positive and negative social media experiences of the suicidal adolescent presenting to the emergency department with an acute mental health crisis.	In-depth interviews	Moderate
10.	Liang et al., 2023	USA	Qualitative study	Adolescents aged 13-17, n=39	To deepen understanding of how social media and technology use, social connectivity, and emotional well-being intersected during pandemic-related school closures	Semi-structured interviews	Moderate
11.	López-Sáez et al., 2024	Spain	Cross-sectional study	Adolescents aged 14-19, n=1259	To examine the types and motives for social media usage amongst adolescents, differentiating by gender identity and sexual orientation, as well as its effects on eudaimonic well-being and minority stress.	Online questionnaire	Moderate
12.	Marciano & Viswanath, 2023	Switzerland	Cross-sectional study	Adolescents M=15.84, n=1429	To understand how social media use impacts adolescent well-being, focusing on the concept of flourishing, which includes elements of happiness, meaning, physical and mental health, character, social relationships, and financial stability.	Online questionnaire	Moderate
13.	Marciano et al., 2022	Switzerland	Longitudinal study	Early adolescents M=11.37, n=981	To examine the bidirectional longitudinal relationships between the duration of Internet use, social connections, and depression among adolescents.	Self-reported data collected at four time points, each one year apart.	Moderate
14.	McNamee et al., 2021	UK	Longitudinal study	Adolescents >10, n=+8000	To investigate the relationship between prolonged use of social media and its impacts on emotional and behavioural outcomes in adolescence.	Longitudinal data	Low
15.	Nick et al., 2022	USA	Longitudinal study	Public school students from rural, lower-class	To explore the frequency and correlates of digital stress among adolescents and its	Self-reported measures at two time points	Moderate

16.	Nigg et al., 2021	Germany	Longitudinal study	community M= 14.27, n=680 Children initially aged 5.57 years, followed up until 16.86 years, n=686	longitudinal association with depressive symptoms. To investigate the relationships of physical activity and screen time with mental health by sex over an 11-year period among German schoolchildren.	Self-reported questionnaires at three measurement phases	Low
17.	O'Reilly et al., 2023	UK	Qualitative study	Adolescents aged 11-18, n=54	To explore adolescents' perspectives on social media and mental health, specifically focusing on the potentially positive effects of social media usage.	Six focus groups	Moderate
18.	Ossa et al., 2023	Germany	Cross-sectional study	Students from 23 schools, grades 5–13, n= 6561	To examine the independent and combined effects of cyberbullying and school bullying on mental health, quality of life, risk-taking, and self-harm behaviors.	Online survey	Moderate
19.	Parent et al., 2022	Canada	Mixed-methods study	Secondary school pupils aged 11-20, N=2666	To examine smartphone use, mental health concerns, and feelings of social disconnection during the COVID-19 pandemic.	Self-report questionnaires & open-ended survey question	Moderate
20.	Paulsson Do et al., 2020	Sweden	Qualitative study	Adolescents aged 15-16, n=36	To explore how social relationships in different social environments are related to health-related behaviors.	Seven focus groups	Moderate
21.	Pavarini et al., 2023	UK	RCT & qualitative evaluation	Adolescents aged 16-18, n=100	To test the short-term efficacy of an online peer support training program designed to equip adolescents with the skills to support their peers' mental well-being during the COVID-19 pandemic	Pre- and post-intervention assessments	High risk
22.	Pavarini et al., 2024	UK	RCT	Adolescents aged 16-18, n=100	To investigate the short-term efficacy of an online peer-led intervention designed to equip young people with skills to support their mental health and wellbeing during the COVID-19 pandemic.	Pre- and post- self-reported intervention assessments	Low risk
23.	Plackett et al., 2023	UK	Longitudinal observational study	Adolescents aged 10-15, n=3288	To examine the longitudinal relationship between social media use and mental health, looking at the mediating roles of self-esteem and social connectedness.	Surveys	Low
24.	Poulain et al., 2019	Germany	Longitudinal study	Adolescents aged 10-17, n=814	To investigate reciprocal longitudinal associations between media use/physical activity and adolescents' psychological health.	Questionnaires	Moderate

25.	Rubin & McClelland, 2015	USA	Qualitative study	Young women aged 16-19, n=150	To explore the stresses and strains associated with managing sexual identity(s) on Facebook, particularly within the context of potential prejudice and discrimination due to homophobia and racism.	In-depth interviews	Moderate
26.	Savolainen et al., 2018	Finland	Experimental study	Adolescents and young adults aged 15-25, n= 1200 Originally 4,978 participants aged 13-15 at baseline, followed up when aged 16-18, with 1,328 completing the follow-up.	To examine how adolescents' and emerging adults' identification with a primary peer group mediates the relationship between addictive behaviors (e.g., social media) and psychological distress.	Online survey	Moderate
27.	Shen et al., 2024	UK	Longitudinal cohort study		To estimate whether depression and anxiety worsened compared to the pre-pandemic period and to examine potential associations with sociodemographic characteristics, behavioral factors, and particularly digital behaviors.	Surveys at two time points	Moderate
28.	Spiekerman et al., 2023	USA	Cross-sectional study	Adolescents aged 11-20, n=168	To examine the types of digital communication used to connect with friends during the pandemic stay-at-home orders and how each form of digital communication related to emotional adjustment.	Online surveys	Moderate
29.	Stewart et al., 2024	USA	Cross-sectional study	Teenagers aged 13-18, n=585	To examine the dual pathways of social media affecting teens' well-being, identifying both positive and negative influences	Surveys	Moderate
30.	Weinstein, 2018	USA	Mixed-methods study	Secondary school pupils aged 14-18, n=568	To explore how daily interactions with social media apps influence adolescents' affective well-being, examining both positive and negative dimensions.	Surveys & school records at 3 points over 2 years, & in-depth interviews with sub-sample (n=26)	Moderate
31.	Winstone et al., 2021	UK	Qualitative study	Secondary school pupils aged 13-14, n=24	To examine the relationship between social media use and social connectedness among adolescents	In-depth paired and individual interviews	Moderate
32.	Wong et al., 2022	Canada	Cross-sectional study	Young adolescents aged 11-15, n=17149	To explore the association between different types of social media use (intensive and problematic) and adolescent relationships and connections.	HBSC-data	Moderate

Thematic synthesis of the data

All articles were examined on the relation of social media use with one or more of the identified main themes. The main themes that emerged were similar to the concepts used in the conceptual framework, with the addition of Covid-19. The pandemic and resulting lockdowns created a unique situation of social isolation where face-to-face interactions were limited, making Covid-19 a relevant theme to explore the relationship of social media, social relations and mental health with. A thematic overview is presented in Table 3.

Table 3

Thematic overview

Identified main themes	Number of studies	Studies
Social relations and connectedness	N= 18	Boyd et al., 2024; Chok et al., 2023; Hjetland et al., 2021; López-Sáez et al., 2024; Marciano & Viswanath, 2023; Marciano et al., 2022; McNamee et al., 2021; Nick et al., 2022; Nigg et al. 2021; O'Reilly et al., 2023; Pavarini et al., 2023; Pavarini et al., 2024; Placket et al., 2023; Poulain et al., 2019; Stewart et al., 2024; Weinstein, 2018; Winstone et al., 2021; Wong et al., 2022.
Social identity and expression	N= 8	Bannon et al., 2015; Chok et al., 2023; De Coninck & d'Haenens, 2023; Good, 2023; Kline et al., 2023; Paulsson Do et al., 2020; Rubin & McClelland, 2015; Savolainen et al., 2018.
Covid-19	N= 6	Ellis et al., 2020; James et al., 2023; Liang et al., 2023; Parent et al., 2022; Shen et al., 2024; Spiekerman et al., 2023.

Key findings

The following section discusses the results of the review based on the three themes mentioned above.

Social relations and connectedness

In this review, 25 of the articles focused on the relation between social media use and social relations or connectedness (See Table 3). Several studies highlight the role of social media in facilitating social connections and a sense of belonging among adolescents (Hjetland et al., 2021, López-Sáez et al., 2024; Marciano & Viswanath, 2023; Marciano et al., 2022; McNamee et al., 2021; O'Reilly et al., 2023; Wong et al., 2022).

López-Sáez et al. (2024) found that active and passive use of social media are related to different aspects of wellbeing, with longer usage times associated with searching for partners, social connections

and establishing friendships. Positive social media experiences were associated with higher levels of flourishing, including close relationships and mental health (Marciano & Visnawath, 2023). Social media was found to play a valuable role in reducing stress and enhancing social connectivity. It served as an important source of mental health information and facilitated peer-to-peer support (O'Reilly et al., 2023).

However, the relationship between social media and social connectedness was found to be ambiguous. Marciano and colleagues (2022) found that adolescents engaging in higher internet use reported higher levels of social connections at the between-person level (i.e. peer-to-peer), however at the within-person level (i.e. cognitive processes), high internet use was associated with higher levels of depression. Additionally, social media use was found to facilitate social connectedness but also led to negative interactions like cyberbullying (Hjetland et al., 2021; Ossa et al., 2023). It positively impacted adolescents by providing a sense of belonging and social support, yet it also induced stress, body image pressure, and displacement of other activities like sleep and homework (Hjetland et al., 2021).

Boyd et al. (2024) and Stewart et al. (2024) found that social media use facilitating social connections showed mixed associations with mental wellbeing and depression, further demonstrating the complexity of social media's impact on adolescent mental health and highlighting the importance of social media engagement types. Limited use of social media (less than three hours a day) shows moderate association with positive peer relationships, but prolonged use (more than four hours a day) is significantly associated with poor emotional health (McNamee et al., 2021; Poulain et al., 2019; Wong et al., 2022). Positive and negative emotional experiences are not mutually exclusive; individuals often experience both emotions across different contexts of social media use (Weinstein, 2018). Functional uses of social media like relational interactions can contribute both to feelings of closeness and disconnection, depending on the nature of the interaction.

Furthermore, Winstone and colleagues (2021) showed that social media can maintain and enhance social connections, supporting both displacement and stimulation of real-life interactions, but can also lead to stress and social obligation. The concept of digital stress and its impact on mental health emerged in the literature (Nick et al. 2022, Winstone et al., 2021). Despite the positive aspects of social media use, young people reported feeling pressure to provide feedback on friends' online posts and to always be reachable (Winstone et al., 2021). Social media had produced a normative atmosphere of "over-stimulation" for these young people, which encouraged stress-inducing emotions. Social media use for direct peer communication might, up to a degree, promote connectivity and subsequent well-being; but excessive communication and the expectations that go along with it could counteract these advantages. A longitudinal study of Nick and colleagues (2022) agrees on this, stating that many adolescents experience digital stress due to social media demands such as worrying about peer approval and feeling pressure to be available. This digital stress was also associated with increases in depressive symptoms over time.

When comparing Nick et al. (2022) with other longitudinal studies, conflicting conclusions are found. Plackett et al. (2023) found no evidence of social connectedness mediating the relationship between social media use and mental health over time. Another longitudinal study stated that frequent active media use of adolescents predicted a decrease in psychological health 12 months later, whereas poorer psychological health predicted an increase in passive media use (Poulain et al., 2019). Additionally, Nigg and colleagues (2021) found that for females in this age group, greater screen time is a risk factor for poorer mental health, and for males, poorer mental health is a risk factor for greater screen time. This indicates that there are different views on the relationship between social relations and connectedness, social media and mental health. In conclusion, social media among adolescents has a multifaceted impact on their well-being and social connectedness. Understanding the specific contexts and types of social media engagement is crucial for assessing its overall impact on adolescent development.

Social identity and expression

The 13 articles identified in this theme showed that social media plays a crucial role in the development and expression of social identity (See Table 3). Research showed that this was predominantly of importance for marginalized or minority groups (Bannon et al., 2015; Good, 2023; De Coninck & d'Haenens, 2023), because they can portray themselves as socially competent online, actively experimenting with their emerging sense of agency. For instance, the use of the internet by adolescents with additional support needs (i.e. autism spectrum disorder) appeared to support the development of identity, competence, and a sense of connectedness and belonging within a social network, which are essential to psychological well-being (Bannon et al., 2015). These areas may present challenges for this population in offline environments. Furthermore, in a qualitative study conducted among adolescents in residential retirements, Good (2023) found that digital media use provides pathways toward personal agency, leadership, and community engagement, aiding in recovery and personal development. The study found that digital media decreased feelings of isolation and stigma and supported identity development and social connectivity, particularly among these marginalized identities.

However, yet again, the process of social identification on social media platforms is ambiguous. Savolainen et al. (2018) found that excessive internet use was associated with weaker peer group identification, which predicted higher psychological stress. For adolescents with suicidal behaviors, social media use provided both a distraction from negative emotions and facilitated social connectedness, which could sometimes result in positive mental health outcomes (Kline et al., 2023). However, social media platforms also introduced risks such as social comparison, normalization of suicidal behaviors, and desensitization to extreme acts, reflecting the complex dual role of social media in the context of suicidality.

Though the average adolescent uses social media as a form of social identity development and expression, social media platforms are in particular of importance for the LGBTIQ+ community in their

development and expression (De Coninck & d'Haenens, 2023; Rubin & McClelland, 2015). De Coninck & d'Haenens (2023) found that non-binary youth have higher digital skills and engage more in content creation and health information searches than both boys and girls. In-depth interviews with adolescent women revealed that they experience significant stress related to managing their sexual identities on Facebook, which includes negotiating a "virtual closet" where they must balance self-expression with the risk of social exclusion. This management often involves tempering their online presence to avoid negative repercussions like discrimination or loss of social connections. The continuous need to modify self-presentation on Facebook to offset potential social exclusion is a significant and ongoing strain for them. In addition, Lopez-Saez et al. (2024) also stated that gay and bisexual adolescents perceive more distal stressors online. Public profiles in gay and bisexual males enhance self-expression but may also be related to minority stress due to discrimination, rejection, or exclusion.

Furthermore, Chok et al. (2023) discovered in focus group sessions that poor body image was a significant issue among adolescents, particularly highlighted in the context of social media influence on girls. A focus group study conducted on Swedish adolescents revealed that the majority of the adolescents experienced pressure from social media because of body ideals (Paulsson Do et al., 2020). All in all, these studies on social identification underscore the importance of social media in identity formation and expression, while also noting the associated stress and risks.

Covid-19

The Covid-19 pandemic (2019-2022) has significantly influenced social media use and its impact on adolescents. The pandemic has highlighted both the benefits and drawbacks of social media use, emphasizing its role in maintaining social connections during periods of isolation while also exacerbating mental health issues for some adolescents. Ellis et al. (2020) reported significant stress related to the Covid-19 crisis, with social media use correlating with increased depression, as did Shen et al. (2024). However, regressions provide more causal information on these correlations. In fact, Parent et al. (2022) noted that smartphone addiction was not a significant predictor of social disconnection during the pandemic, but depression significantly predicted feelings of social disconnection.

Furthermore, active engagement online provides more positive emotional experiences compared to passive engagement (Liang et al., 2023), connecting with friends by posting or responding on social media was not associated with significant improvements in adolescent well-being (Spiekerman et al., 2023). Synchronous forms of communication such as video-calls or texting is associated with higher positive affect and reduced loneliness and depressive symptoms over time (James et al., 2023; Spiekerman et al, 2023).

Lastly, Pavarini and colleagues (2023; 2024) investigated online peer-led interventions among adolescents during Covid-19 and found that it led to increased support-giving skills, compassion, and peer connectedness, improving adolescents' mental health and agency. This indicates the potential of leveraging peer connections in online settings to promote adolescent wellbeing. Thus, research from the

Covid-19 pandemic highlights the fact that social media use allows for more social connectivity in times of social isolation, but the level of connectivity varies by purpose and type of use.

Discussion

Synthesis of findings

This study explored the literature on the domain of social media use, social connectedness and mental health. Through use of a scoping review, a comprehensive understanding of the breadth and depth of research in this area is provided, identifying key themes and gaps by answering the following research question: “How does social media use influence the mental health impact of social connectedness among adolescents, both positively and negatively?”. Three key themes have been identified that were most prevalent in the literature: social connectedness and relations, social identity and expression and Covid-19. Overall, the findings suggest an ambiguous, complex dynamic between social media, social connectedness and mental health impact.

A key finding is that social media can both facilitate or undermine social connectedness, depending on circumstances such as active or passive engagement and time spent on these platforms. Social media use mainly interacts with the individual and the microsystem, with interactions between peers, shaping (Bronfenbrenner, 1979). Winstone and colleagues (2021) explained this mechanism through the displacement and stimulation hypothesis. The displacement hypothesis states that using the internet for entertainment purposes as a solitary, socially disengaged activity, similar to passively consuming social media content without active engagement, is believed to displace time that could be spent socializing with others offline, thereby undermining social connectedness. The stimulation hypothesis states that adolescents increasingly use social media to enhance the quality of existing friendships rather than seeking new connections, which positively impacts social connectedness and provides social and emotional support. They concluded that instead of a clear unidirectional relationship, it is rather a complex web of reciprocal and cyclical relations in which social media can enhance existing positive connections with peers and family while also worsening an already poor social environment by spreading mistrust.

This complex dynamic is also found in relation to social identity formation; one the one hand social media platforms provide a place for adolescents to perform agency, discover their identity and identify with like-minded peers, but on the other hand, factors such as social comparison, negative feedback and social exclusion actually limit the identity development of adolescents. In light of the Social Identity Approach (Tajfel & Turner, 1979; Turner et al., 1994), social media platforms are a resource for adolescents to identify with a social group and the articles included in this review especially highlighted the importance of this for marginalized groups like the LGBTIQ+ community or vulnerable adolescents such as adolescents in residential retirements. Online social identification can contribute to higher levels of connectedness in the microsystem, and the ability for self-expression contributes to

increased mental health on an individual level, as perceived social support and a sense of self-efficacy makes adolescents more resilient, which is a protective factor for their mental well-being.

Knowledge gaps

During the analysis of this scoping review, several knowledge gaps are identified. The first and perhaps most significant gap is the lack of context being considered. In most literature, “black boxing” occurs: “the way scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become.” (Latour, p. 304, 1999). Many articles describe the relation between social media use and mental health outcomes, but it remains unclear which mechanisms operate in what context and lead to these found mental health outcomes.

In addition, there is a lack of consensus on definitions and operationalizations in defining social media. Studies differ on how they operationalize the usage of social media, varying from problematic social media use, time spent on social media, to total screen time. This lack of consensus makes it hard to analyze and compare the different articles.

Third, the role of social media in facilitating or hindering identity development and peer identification remains underexplored. The extent to which social media serves as an adaptive tool for regulating internal states also requires further exploration. Specific areas of social media engagement, such as sexual development in the digital sphere, also warrant further exploration. As adolescents mature and become sexually active, online intimacy emerges as an intriguing research domain, even though it poses challenges for operationalization due to the sensitivity of the topic and the involvement of minors.

Methodologically, there is a gap of research using objective data to understand how adolescents use and navigate on social media. This review predominantly relied on subjective data from questionnaires and surveys. Additionally, the long-term effects of social media use on social connectedness and mental health are unclear. More longitudinal studies are necessary to map these long-term effects, particularly to understand new constructs such as digital stress.

Lastly, research is needed on gender and age differences and vulnerable or minority groups. Several studies have noted gender differences, generally finding that females are more susceptible to negative mental health impacts related to social media. Furthermore, few studies have differentiated between early and late adolescents, potentially yielding distinct conclusions. Moreover, the reviewed articles suggest that individuals from the LGBTIQ+ community or adolescents with limited face-to-face interactions, such as those in residential care or exhibiting suicidal behavior, may derive significant benefits from social media. However, research on these groups is limited.

Strengths & Limitations

This study knows strengths, as well as limitations. A key strength is the aspect of interdisciplinarity. By applying a dual theoretical lens, a more holistic approach is considered. The Ecological Systems Theory (Bronfenbrenner, 1979), from developmental psychology, and the Social Identity Approach (Tajfel & Turner, 1979; Turner et al., 1994), from social psychology, together form an interdisciplinary approach. The integration of multiple disciplines is essential for understanding the rapidly evolving field of social media and its impact on mental health and social connectedness. Social media use, social connectedness, and mental health are multifaceted topics that intersect multiple disciplines, such as psychology, sociology, and information technology. These different disciplines apply diverse methodological approaches, for instance, psychology focuses more on individual behaviors and mental health outcomes using experiments and sociology might examine broader societal interactions through qualitative surveys. Combining these disciplines leads to more robust findings, allowing researchers to gain a more holistic and nuanced understanding of how social media impacts adolescents.

However, certain limitations in this study need to be addressed, both on the included articles and the current study itself. First, regarding the included articles, the lack of consensus on the definition and operationalization of social media use complicates the interpretation of the research findings. Included articles varied from only looking at internet screen time, researching one specific social media platform, to researching a variety of platforms, i.e. Instagram, Facebook, Snapchat. Some articles even include other digital communication types such as video calls and social gaming. Furthermore, the studies vary greatly in how they operationalize the use component of social media. Moment-to-moment measurements, active versus passive engagement, frequency of social media checks and intensity of social media use are some examples. These differences hinder the generalization of the findings. More specific eligibility criteria regarding the definition and operationalization of social media could have helped with generalizability, however, this would have simultaneously limited the scope on literature.

Another limitation is the "moving target" nature of social media (Lomborg, 2017). The continuous evolution of platforms and the rise and fall of new and old ones make studying social media challenging. This problem is part of studying new and rapidly evolving technologies such as social media. For instance, while adolescents are currently active on TikTok, the review includes no research on this platform, focusing instead on older platforms like Facebook. Additionally, social media apps frequently change features, affecting user interactions and posing challenges in understanding their effects. As a result, platforms vary significantly in their specific characteristics, posing challenges in understanding their underlying effects. All in all, the studies provide valuable insights, but findings should be interpreted with an understanding of these limitations.

Regarding the review itself, several methodological limitations arise. Firstly, the fact that the review is conducted by one single researcher significantly increases the risk of selection bias. Utilizing a second reviewer in the selection process would help mitigate this issue. Secondly, the review focuses solely on Western countries, which limits the generalizability of the findings. Including non-Western

countries could yield different research insights and would be an interesting direction for future research. Thirdly, only three search engines (Scopus, PubMed, and PsycInfo) were used in this review, potentially omitting important articles. Expanding the search to include more databases, such as WorldCat, would broaden the scope. Lastly, the conceptual model presented in the introduction appeared too simplistic to capture the complex dynamics between social media, social connectedness, and mental health. Studies also identified direct relationships between social media and both social connectedness and mental health. A more nuanced and detailed conceptual model is needed to better understand these interactions.

Future research & Practice implications

The current review suggests that social media usage has mixed potentials and effects for mental health, social connectedness, and social identity. Thus, media effects are increasingly recognized as influenced by a complex interplay among individual and contextual factors. Nevertheless, the identified knowledge gaps provide implications for future research.

Regarding the lack of context consideration, future research could adopt a realist approach (Pawson & Tilly, 1997) to examine adolescents' experiences during periods of frequent social media exposure (Greenhalgh & Manzano, 2022). Such an approach can provide insights into whether their exposure leads to socially connected or risky social media engagement, either alternatively or concurrently. Further research is needed on how, where, when and for whom social media use supports social connectedness, social identity formation and positive mental health outcomes to overcome current black boxing.

Further exploration is necessary to understand social identity formation on social media, particularly concerning minority groups and vulnerable adolescents, including those with additional support needs. Additionally, more research is needed to investigate how social media functions as an adaptive tool for regulating internal states. Specifically, there is a lack of research on how social media influences sexual development and intimacy, which represents an important yet understudied aspect of internal states.

Additionally, future directions regarding methodology should aim at objective measures of social media use and longitudinal study designs. A majority of the included studies are cross-sectional and rely on adolescents' self-reports of perceptions and behavior. However, adolescents tend to overestimate their social media usage when comparing retrospective reports to experience sampling method reports: self-reports were rarely an accurate reflection of logged media use (Parry et al., 2021). There is a clear need for more research that leverages technologies to study social media usage directly and related causal effects on mental well-being. Longitudinal studies will help better understand immediate, longer-term, and cumulative effects of social media use, for instance the effects of digital stress. Longitudinal could potentially uncover age (early versus late adolescence) and gender (male, female, non-binary) differences as well.

Lastly, in light of the unique research circumstances that emerged due to social isolation during the Covid-19 pandemic, future research should further investigate *pandemic preparedness* (Burkhart & Ievers-Landis, 2023). Pandemic preparedness refers to the readiness of governments, organizations, communities, and individuals to effectively respond to the impact of a potential pandemic. It aims to reduce the spread of infectious diseases, minimize illness and death, maintain essential services, and limit social and economic disruption during a public health emergency. Implications of these findings can guide the development of prevention programs aimed at adolescents who are vulnerable to social disconnection in times of increased social isolation, such as a global pandemic. This will inform education and interventions that foster healthy social media and technological habits.

In general, public health professionals should develop interventions targeting the adolescent microsystem, such as schools, to support youth in navigating social media and promote well-being. Emphasizing the cultivation of digital citizenship as a fundamental skill is essential. Additionally, policy makers could promote collaboration between the media and technology industry, researchers, and community stakeholders (such as educators, parents, or clinicians) to develop more prosocial content in products that can strengthen social connections and foster a positive social identity.

Conclusion

The study investigates the complex interplay between social media use, social connectedness, and mental health among adolescents. Adapting a scoping review approach, key insights revealed that social media can enhance social connectedness and provide valuable mental health support through peer interactions and identity formation, especially for marginalized groups. However, this study also notes the need for a nuanced understanding of social media's dual effects. Context, engagement types, and individual differences are crucial in mediating these effects. By bridging interdisciplinary perspectives, it aims to inform interventions that leverage positive social interactions online to improve adolescent mental health outcomes. Ultimately, investing in adolescent social capital creates the foundation for a healthier and more resilient generation, capable of positive mental well-being not only during adolescence but well into adulthood.

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***The articles included in the scoping review are in bold and numbered with superscript.**

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