Impact of Adolescent Social Media Use on Body Image, Mental Health and Eating Disorders: A Review

Shraddha Rajesh[1] and Lucy Draper[#]

[1] Renaissance College Hong Kong, Hong Kong
[#] Advisor

ABSTRACT

Adolescents are considered vulnerable to negative influences on social media because their use of the medium expands at a time when they are in a transition period in their lives dealing with many other issues such as puberty, exam stress and anxiety about their future. This review focuses on primary research articles exploring the impact of social media on adolescents' mental health, body image and eating disorder related issues. This review also includes articles regarding how social media can be used to deliver positive messages, recruit vulnerable subjects for early intervention and explore the effectiveness of new treatment strategies. Based on the reviewed articles, it seems that girls, boys and transgender persons are similarly at-risk from negative social media influence. Going ahead, there is a need to focus on the nature of social media activity rather than just time spent to identify vulnerable young persons. It is possible that in some cases social media usage can drive a vicious cycle that amplifies negative psychological attitudes initiated due to social and personal context. Further research is required to explore the role parents and social media platforms can play in maintaining positive attitudes and effecting early intervention programs.

Introduction

A study by the Pew Research Centre found that the proportion of teenagers in North America that own or have access to a smartphone has increased from 73% in 2015 to 95% in 2018 and the percentage that reported being online on a constant basis has increased from 24% in 2015 to 45% in 2018 (Pew Research Center, 2015, 2018). Social media (SM) is a term used for websites and applications that are used primarily to share, receive and create content. The Pew Research Center survey in 2018 shows that 97% of teenagers in North America have at least one SM account. Teenagers use SM such as Facebook, Youtube, Instagram, SnapChat and others as a way to build social networks, share and engage with content (Pew Research Center, 2018). Other surveys such as by Common Sense Media have suggested that over 70% of teenagers interact with SM several times per day (Common Sense Media, 2015).

Adolescence is a time during which individuals go through natural changes in their physical appearance due to puberty, which can be difficult to adapt to. In addition, societal pressures for teenagers to look a certain way can cultivate a negative body image and related mental health issues (Paxton et al., 2006). Given the highly visual nature of SM platforms, they can act as powerful vehicles to promote certain standards and ideals regarding culture and beauty. It is possible that SM sites increase adolescent girls' exposure to their own image, amplifies their value of physical appearances and leads them to placing importance on quantifiable indicators of approval, coming from peers, celebrities and influencers (Anne J. Maheux, 2021). Since SM sets unrealistic standards and expectations for how one should look, with an increasing number of teenagers using SM and consuming content, it is possible that these expectations and standards will factor into the way they

perceive themselves. Body image is an individual's perception or feelings about their own body, both positive and negative. A negative body image involves feeling upset about your appearance, constant comparisons to what you may perceive as the ideal body type and more, all of which can take a large toll on an individual's health through the form of low self-esteem, eating disorders and poor mental health (Holland & Tiggemann, 2016). Frequent use of these SM platforms can influence adolescent perceptions of body image and contribute to self-esteem and body satisfaction issues (Maheux et al., 2022; Papageorgiou et al., 2022; Saiphoo & Vahedi, 2019; Shah et al., 2019).

This review is important because it surveys the recent literature regarding the relationship between SM use and its impact on body image, mental health and eating disorders and comments on the findings from a high school student perspective. Recent papers have questioned the established orthodoxy that more time spent on SM results in higher mental health risk (Orben, 2020).

The research question that will guide this paper is, "How does time spent on social media impact body image in adolescents?" To explore this question, this paper will review existing literature about the relationship between adolescents' use of social media and body image and how these variables can relate to the issues of self-objectification, eating disorders and mental health disorders.

Method

A comprehensive literature search was conducted by this high school student. Articles were identified through Google Scholar using combinations of the following search terms: social media, body image, adolescents, teenagers, mental health, eating disorders, screen time and self-objectification. Reference lists from each article were assessed for additional resources and included in the review. In order to include as much information as possible, exclusionary criteria were minimal. The study did have to be written in English and primarily focus on social media and its impact on adolescents to be included in this review. This search produced a combined total of 46 case studies, literature reviews, meta-analyses and research trials. Though review articles were consulted for more information regarding the topic, the focus of the review was on primary research articles.

Discussion

Self-Objectification

Self-Objectification is when an individual views themselves as an object and evaluates themselves based on appearance (Rollero & De Piccoli, 2017). Self-objectification may pose a threat to an individual's mental health and self-esteem and can lead to body shame, unhealthy eating and depressive symptoms (Tiggemann & Slater, 2015).

In a study conducted in China of 963 female adolescents between 12-16 years of age (all users of Qzone), (Zheng et al., 2018) found that selfie posting on social networking sites had a positive correlation with self-objectification. For girls with higher levels of imaginary audience ideation, the assumption that others are looking at and thinking about oneself at almost all times (Cingel & Krcmar, 2014), the influence of self-objectification on selfie posting was greater (Zheng et al., 2018).

The consumption of sexualized media was found by a study of 553 female adolescent girls in Belgium to be indirectly related to adolescents' tendency to self-objectify, through internalization of appearance ideals (Vandenbosch & Eggermont, 2012). Importantly, the study found that appearance focused SM use was associated with greater self-objectification and serves as an indirect factor in the development of adolescents' self-concept.

In a study comprising 1087 middle-high school girls found a positive correlation between body image disturbance and time spent on the Internet (Tiggemann & Slater, 2013). More recent studies have largely been more nuanced with a focus on specific SM use analysis and moderating for factors such as gender, thin-ideal internalization etc. While several studies have previously noted a positive correlation between Facebook (FB) usage and body image disturbance in adolescent girls, a study of 103 New York middle-high school female students found that the use of FB photo related features and not overall FB usage was positively correlated with subjects' body dissatisfaction and self-objectification (Meier & Gray, 2014). Similarly, in Australia, among 101 grade seven girls, subjects who shared self-images and were invested in manipulating them were at higher risk of body dissatisfaction, internalization of the thin ideal and eating disorders compared to girls who did not, irrespective of their overall media exposure (McLean et al., 2015). A recent study involving 1153 adolescent boys and girls on Instagram and Snapchat in Australia found that the thin-ideal internalization and SM use was positively correlated with body dissatisfaction in both boys and girls (Vuong et al., 2021). A study of 543 girls in the USA (Roberts et al., 2022), 1059 adolescents in Singapore (Ho et al., 2016), 693 adolescent Italian boys and girls (Gioia et al., 2020) had similar findings. In a study of 1843 adolescents in the Netherlands, it was found that time spent on electronic media could be positive on the feeling of well-being if the subjects had a positive body image to begin with (Krogh, 2022). Recently, in-depth interviews with 24 high school girls in Australia suggested that negative comparison with SM imagery resulted in higher body dissatisfaction and motivation to seek validation for their appearance on social media (Papageorgiou et al., 2022).

In an interesting study assessing the influence of peer networks on a subject's SM use and body image in Croatia, it was found that girls with fewer friends were at higher risk of SM related body objectification than their peers (Brajdic Vukovic et al., 2017). On the contrary, another study of adolescents in North America found that a larger FB friends network was a predictor of increased body dissatisfaction issues (Tiggemann & Slater, 2017). It is possible that the Croatian study was too restrictive in its design by defining a subject's peer network too narrowly and subjectively. This point of view is indirectly corroborated by another study in the Netherlands which found that increasing SM use and higher frequency of peer feedback on appearance was positively correlated with body dissatisfaction (de Vries et al., 2015).

Link to Eating Disorders

Eating disorders are serious mental illnesses where there are disturbances in an individual's eating behaviours and attitude surrounding food, weight and body shape (Holland & Tiggemann, 2016).

Social networking sites have also been used by pro eating disorder communities to post content presenting eating disorders as a lifestyle choice as opposed to a serious mental illness. It is likely that exposure to pro-eating disorder content could result in negative outcomes including an increase in eating disorder symptoms (Saul et al., 2022). A study involving 598 US adolescents reported that 84% of the participants exposed to SM content, which emphasized a thin-ideal and pro-eating disorder, displayed symptoms matching that of a clinical or subclinical eating disorder (Fitzsimmons-Craft et al., 2019). Similarly, in a study of Australian adolescents, it was found that increased investment in posting selfies, photos, and engagement with others photos was associated with a higher likelihood of meeting all criteria for all eating disorders (Lonergan et al., 2020).

Several studies globally have concluded that the time spent on SM directly impacts eating disorders (Mehtap et al., 2020; Santarossa & Woodruff, 2017; Wilksch et al., 2020). However, given the strong association between body image and eating disorders, it is likely that the type of SM usage and individual context has a greater impact than time spent on SM alone.

Link to Mental Health Disorders

According to the World Health Organisation, 16% of people between the ages of 10 and19 suffer from a mental health disorder and half of all mental health disorders begin at the age of 14 (WHO, 2020). In recent years, there has been an increase in incidence of mental health concerns in adolescents. This increase has coincided with the widespread usage of social media in teenagers, which then leads to the concern regarding the possible link between the two (Anne J. Maheux, 2021; Ivie et al., 2020). Teenagers themselves worry that SM platforms could be a threat to their mental wellbeing. Specifically, teenagers have identified SM being a cause for mood and anxiety disorders for some adolescents. Also, they believe that SM is one of the main platforms for cyber-bullying, which could then result in self isolation and poor mental health for adolescents (O'Reilly et al., 2018).

A US based study found that adolescents who spent more time on their screens had "significantly" higher depressive symptoms and at least one suicide related symptom than those who spent less time doing non screen activities. It was further found that adolescents who used social media on a daily basis were 13% more likely to have higher levels of depressive symptoms compared to those who used social media less frequently (Twenge et al., 2017). Through responses collected from parents and adolescents, a study of 113 adolescents in the US found that engagement with SM was moderately associated with the feeling of missing out and loneli-ness. Furthermore, from parental responses it was found that SM use was associated with anxiety, hyperactivity, impulsivity and depression (Barry et al., 2017). A study of UK adolescents found that greater social media use was associated with negative body image, low self-esteem, inadequate sleep and online harassment, all of which resulted in higher depressive symptom scores. Adolescents who used social media for more than five hours were more likely to be dissatisfied with their body weight. Adolescents who were dissatisfied with their body received 15% higher depressive symptom scores (Kelly et al., 2018). A recent longitudinal study of 163 ado-lescents in the US found that lengthy use of SM, particularly image focused SM sites, is possibly connected with mood and anxiety disorders (Maheux et al., 2022).

Link to Time Spent on Social Media

There is significant heterogeneity in the outcomes reported by multiple studies and the evidence regarding the impact of time spent on SM use on mental health is not conclusive. A recent systematic review found that 9 out of 24 studies showed a positive impact of SM use on adolescents' mental health while 15 out of 24 studies reported the opposite. The factors leading to a desirable impact on mental well-being were online support seek-ing behaviour and receiving positive feedback. On the other hand, high investment in SM content, negative feedback and SM ostracization resulted in worsening mental well-being (Webster et al., 2021). In a recent longitudinal study of 229 adolescent girls in Belgium, it was found that time spent on appearance focused SM such as Instagram and TikTok was not predictive of body image issues. Rather they reported that subjects with a negative body image were at a risk of higher SM use in the future (Maes & Vandenbosch, 2022). Similarly, a study of early adolescents in the US reported that subjects who exhibited SM related body dissatisfaction were more likely to have depressive symptoms, higher SM usage and online social anxiety compared to others who did not have negative body image issues (Charmaraman et al., 2021).

In a review of reviews (Orben, 2020), the author found that the evidence linking time spent on SM and psychological well-being was not conclusive. Several studies had shortcomings such as not differentiating be-tween types of SM, defective data collection methods, cross sectional in nature and not accounting for con-founders. A recent eight year longitudinal study of 500 adolescents in the US, starting at an age of 13 until they reached 20 years old, did not find a link between time spent on SM and mental health for the same individual over time (Coyne et al., 2020).

Link to Treatment Strategies

Protective factors are defined as those that significantly reduce the risk of negative outcomes such as body dissatisfaction, eating disorders and depressive symptoms. Such protective factors could be based on parents or community involvement, be gender and context dependent, cumulative over time and non-specific in their impact on various aspects of psychological well being (Levine & Smolak, 2016). While the negative impact of SM usage has been extensively reviewed, there are positive aspects as well. Adolescents on SM can have healthy self-expression, a sense of community and connectivity, seek support and access mental health resources (Elmquist & McLaughlin, 2017). It is important for parents, schools and mental health professionals to understand the role of SM and coping mechanisms in the specific individual's context (Burnette et al., 2017; De Vries et al., 2019).

Recently a study involving 892 adolescent participants in Australia explored the efficacy of social media literacy in improving adolescent body image, eating disorders and mental wellbeing. The study found modest improvements in dietary restrictions and depressive symptoms in the girls but not the boys (Gordon et al., 2021). Similarly, classroom based intervention in the UK, reported a modest improvement in body dissatisfaction and self-objectification measures among the participants (Bell et al., 2022). Using an alternative approach, another study demonstrated the effectiveness of SM based recruitment strategies to target participants that are at high risk of depressive, anxiety or eating disorder symptoms (Kasson et al., 2021). It may be possible to cost-effectively target such at-risk adolescents with online applications or chatbots to offer specific help and support online (Beilharz et al., 2021).

Conclusion and Future Directions

Social media continues to have a large presence in the lives of adolescents and with this comes a curiosity to understand the impact it has on their lives. Several studies reviewed in this article have concluded that in order to assess the impact of SM usage on the psychological wellbeing of adolescents, the content and context of SM usage is more important than time spent on SM alone. The individual context, specifically their propensity to negative body image, has been identified as one of the most significant negative factors contributing to body dissatisfaction, eating disorders and depressive symptoms. In addition, high investment in SM images, negative online feedback and SM ostracization have been identified as important negative factors. In contrast, support seeking behaviour and positive feedback can have a beneficial impact on adolescent mental health.

Given this background, it seems that early intervention to identify at-risk adolescents, social media literacy either in the classroom or online, parental support and positive feedback can be helpful. It is likely that SM itself can be harnessed to strengthen the mental health of adolescents. While it is important for parents, schools and counselors to be aware of the impact of SM usage on a particular child, social media platforms themselves should do more to identify at-risk adolescents.

Limitations

A number of limitations of current research efforts stand out. Firstly, most of the articles reviewed in this study considered social media as a whole or looked at specific sites, meaning that the individual effects of different media sites or usage patterns were not compared and analysed. More importantly, even where the studies tried to differentiate between the types of SM usage, the specifics of SM usage by each participant was not studied. Secondly, several of the research articles were mainly focused on girls. While the papers that have looked at both boys and girls suggest similar outcomes, it would be important for future research to be conscious of how gender and sexuality may have an effect on body image and other surrounding issues. Thirdly, many of the articles are based on cross sectional studies, self-reporting of important subjective information, no specific ef-

fort to identify confounding factors and convenient sampling. While the more recent articles have tried to correct for these deficiencies, future research design in this important topic needs to be more rigorous. Finally, given the importance of individual context, future research designs need to better account for differences in factors such as demographics, parental involvement and peer network.

Despite its negative side effects, social media still serves as a powerful tool for many purposes. In order to make best use of this tool, the way forward might consist of working with adolescents to experiment with and develop methods through which social media can be used without the harmful impact on psychological wellbeing.

Acknowledgments

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