Social media, stress and sleep deprivation: A triple "S" among adolescents

Micajah DANIELS[1*], Manoj SHARMA[2], Kavita BATRA[3]

Affiliations:

[1] Graduate Research Assistant, Department of Environmental & Occupational Health, School of Public Health, University of Nevada, Las Vegas, NV 89119, USA.

[2] MBBS, Ph.D., MCHES, Professor, Department of Environmental & Occupational Health, School of Public Health, University of Nevada, Las Vegas, NV 89119, USA.

[3] Ph.D., MPH, BDS, Biomedical Statistician, Office of Research, Kirk Kerkorian School of Medicine, University of Nevada, Las Vegas, NV 89102, USA.

Corresponding author:

Micajah Daniels, Graduate Research Assistant, Department of Environmental & Occupational Health, School of Public Health, University of Nevada, Las Vegas, NV 89119, USA.
E-mail: micajah.daniels@unlv.edu

Abstract

This commentary is aimed to discuss the impact of social media or the internet and engagement on youth development and comprehend these complex interrelationships. The discussion will serve as an important basis for designing targeted interventions to promote the judicious use of social media and meaningful engagement among youth. Problematic social media use (SMU) among adolescents may be associated with sleep deprivation, emotional distress, and adoption of maladaptive behaviors. Depression and stress are most notably connected to online harassment from SMU or cyberbullying. Degradation, threats, fake profiles, cyberstalking and unwanted comments are some examples of cyberbullying. Given the critical developmental stage of adolescents, online social rejection triggers a response with higher emotional intensity. The growing use of social media (SM) among youth warrants further investigation to identify its impact on mental health. The influence of SM or the internet on the emotional and social development of adolescents is undergoing a continuous transformation. While digital platforms help to promote social inclusion among adolescents, the risk associated with their excessive or problematic use cannot be overlooked. Understanding relationships between social media use, psychological health, and sleep deprivation among adolescents is essential in deciphering the intricate mechanisms or factors surrounding the youth development cycle.

INTRODUCTION

Social media (SM) refers to an online technology used by individuals, organizations, and communities to gather information or communicate [1, 2]. Online communication usually consists of user-generated posts [3] in which people establish their virtual identity and share, interact, co-create, make a modification, and form social networks [1, 4]. Typically, SM is restricted to users aged 13 years or above, however social appearance at relatively earlier ages of 6-7 years has also been reported [5, 6]. In 2018, 743 teens were surveyed in the United States (aged 13-17 years) and revealed that a sizable proportion of teens go online daily to make social interactions [7]. Reportedly, nearly 89% of U.S. teens go online at least once a day and 44% admitted to the subjective measurement of being online at a 'nearly constant' basis [7]. The most popular platforms among U.S. teens include Youtube (85%), followed by Instagram (72%), Snapchat (69%), Facebook (51%), and Twitter (32%) [7]. Adolescents belonging to lower-income and single-parent households are significantly more likely to spend more than five hours daily on SM [7]. In terms of gender differences, the usage of SM was more in girls compared to boys (50% vs. 39%) [7]. For instance, a cohort study among 19,244 households in the United Kingdom found a higher proportion of girls (43.1% of girls) spending more than 3 hours/day compared to 21.9% among boys [8]. While youths can use SM to exchange information, they also run the risk of psychological morbidities from passing on and receiving false, hostile, or derogatory remarks [9, 10].

Lin and colleagues [11] have attempted to determine the association between depressive disorders and use of social media or excessive use of the internet among teens. Previous studies have also discovered a link between internet use and sleep quality [12]. The impact on sleep quality may be varied upon the degree of internet use [12]. With the increasing access to new technology, a habit of using a smartphone before sleep has been attributed to sleep latency and duration [13]. Gender disparities were also noted with females having greater sleep disturbances compared to their male counterparts [14]. These findings

TAKE-HOME MESSAGE

Social media use (SMU) among adolescents is growing and it has both positive and negative consequences. Identifying the duration of time spent on SM, the type of content being consumed on SM, and the characteristics of the SM user can be used to design interventions for judicious use of SM and application in the adoption of other health behaviors.

can be partially explained by the puberty-related hormonal mechanisms among females, which gets compounded with excessive popularity and use of the internet among females [15, 16]. Internet addiction was reported as a contributing factor in impairing the circadian rhythm [17]. As a biological explanation, it was found that the blue light emitting from the phone screens suppresses the melatonin production from the pineal gland, thereby prolonging sleep latency [18].

The influence of SM or the internet on the emotional and social development of adolescents is undergoing a continuous transformation [4, 9, 19, 20]. Understanding relationships between social media use, psychological health, and sleep deprivation among students is essential in deciphering the intricate mechanisms or factors surrounding the youth development cycle. Therefore, the purpose of this commentary was to determine the impact of social media or the internet and engagement on youth development to understand these complex interrelationships. The discussion in this commentary will serve as an important basis for designing targeted interventions to promote the judicious use of social media and meaningful engagement among youth.

DISCUSSION

Youth engagement and role of internet

The interactions of youth with SM also vary by certain attributes [19, 21]. For instance, the youth engagement with SM can be influenced by their personality [19] or cultural identities [21]. Additionally, the engagement of youth with SM largely depends upon the circumstances they experience [22]. They interact with the internet on a daily basis for work-related activities, maintaining and expanding social relationships, and improving their quality of life through shopping and other services [23]. Social media is often used to communicate/propagate content to influence other's views [19], sharing experiences [1, 22], and seeking social support [9]. SM has the capacity to connect people from all over the world [24, 25] and promote the fee-

ling of social inclusion. Habitual users of SM are more likely to feel connected socially and perceive higher social support [19]. Internet users reported higher appraisals of resilience, narcissism, self-esteem, life satisfaction, and relaxation [19]. Youth have subjectively identified SM as the emotional regulation and relaxation tool [20, 22]. SM offers a platform for adolescents to provide self-disclosures of mental health issues and seeking help from others anonymously [22]. Family, clinicians, and public health professionals can utilize SM to intervene and observe adolescent depressive symptomatology and suicidal ideation [3, 4]. Next, body image has been identified as an imperative concept when analyzing adolescent mental health [26]. Positive body image has been defined by someone's satisfaction with their weight and appearance [8]. There are SM accounts on health and fitness ranging from fitspiration pages to help meet individual's health goals, 'thinspiration' pages idealizing thin bodies and weight loss, and detox pages dedicated to diets and cleansing [8, 26]. When interrogating the role of gender, it is discovered that girls are more susceptible to hold feelings of body dissatisfaction as a possible result of peer pressure promoting thin body ideals perpetuated by the media and peers [26]. SM content pertaining to health and fitness is more prevalent among young girls, who are at risk of eating disorders, bullying, and the abuse of detox teas, laxatives, and diet pills [26]. Health and fitness-related content can have a negative impact by normalizing unrealistic before and after results and promotion of behaviors that do not have health benefits [26]. Furthermore, SM messaging promoting detox substances has an audience that is more likely to use illegal drugs than non-consumers [26].

Problematic social media use and its consequences

It has been argued that moderate digital screen time is not by and of itself harmful to mental well-being [24]. However aggressive, sexual, extremist, and commercial advertisements of alcohol, tobacco, and marijuana have

been common themes identified in skepticism about youth SM use [24]. Regardless of content, it has also been argued that increased SM use elevates psychological distress [4]. Shensa and colleagues [2] introduced the concept of 'Problematic Social Media Use (SMU)', which raises elevated emotional intensity as a concern. SMU can become problematic when the user develops addiction-like symptoms such as changes in mood, time engrossment, fixation, withdrawal, interpersonal problems, and relapse [27]. Problematic SMU has been identified across 29 countries [27]. Problematic media use increases adolescents' risk of depression, anxiety [2, 19, 28], and sleep deprivation [1, 8, 29]. These symptoms tend to exaggerate in the emergency conditions, such as the COVID-19 pandemic [28]. For instance, a study on 4,872 China residents aged 18 or higher found that frequent SM users had higher odds of mental health problems during the COVID-19 pandemic [28].

Young people experiencing mental health issues are at higher vulnerability to have poor mental health during their lifetime [30] and 75% of mental disorders emerge in early adulthood [31]. Suicide attempts and complete suicides are positively correlated with non-suicidal self-injury (NSSI) and suicidal ideation during adolescents [3]. Visiting a psychiatric care physician or primary doctor can be an important interaction for adolescents experiencing mental illness [9]. For adolescence, social networking sites (SNS) can contribute to greater exposure and participation in self-harming behaviors [4]. Preceding suicide attempts, someone may express warning signs of their depression and desire to die [3]. Yet young people are hesitant to pursue professional help due to stigma, insufficient mental health literacy, and privacy concerns [3, 4, 9]. Also, depressive and internalizing symptoms were heavily influenced by early adolescent's body image and self-esteem [8]. In addition, SM can also promote risky behaviors among youth.

SM as a catalyst of maladaptive behaviors

SM may act as a catalyst for the normaliza-

tion of alcohol, drug, and tobacco use among adolescents which has also been causing concern [24, 26, 32]. Other risky behaviors have included suicide contagion [31], self-harm, suicidal exposure and participation [4], and suicide sites that condone and promote suicide pacts between strangers [33]. 'Fitspiration' and 'thinspiration' pages can appeal to young people who are vulnerable to eating disorders or experiencing symptoms [26] and photoshopped images and impractical body images on SM can have emotional ramifications leading to lowered self-esteem and mood [22]. The most common emotion tied with excessive SM use is anger, particularly among youth experiencing cyberbullying, who are at higher risk of experiencing humiliation and invasion of privacy [34].

The threat to privacy and cyberbullying

SM may pose a threat to someone's privacy or confidentiality [32]. The public humiliation of bullying can diminish a person's reputation and part of their identity [34]. SM has the potential to create a platform for unwanted sexual solicitation, [24] including sexual predators [32]. The aforementioned issues have been argued to be part of a moral panic that overstates their potential threat to society's current way of life [35]. Depressive symptoms are most notably connected to sleep deprivation and online harassment from SMU [8]. One's mood can be negatively affected by sleep deprivation from constantly being online and adolescents can lose sleep due to the anxiety induced if they are experiencing online harassment [8]. Degradation, threats, fake profiles, cyberstalking [24] and unwanted comments are illustrations of cyberbullying [8]. Adolescents are more likely to expect rejection compared to adults and adolescence falls within a critical stage of development in which online social rejection triggers a response with higher emotional intensity [20]. Cyberbullying is associated with depressive symptoms that range from limited to severe magnitude [34]. Furthermore, cyberbullying has also been associated with substance use and suicidal ideation and attempts [34]. The

emergence of depressive symptoms has been 'accelerated' by emotional distress induced by increased fear from feeling helpless and powerless to defend oneself [34].

Implications for practice and research

The impact of SMU on adolescent mental health is surging because more digital natives are entering adolescence, a stage of development when symptoms of psychiatric problems are more likely to occur [20]. It is imperative to explore pathways for mental health problems and well-being among social media users to identify baseline risk, core themes, and gaps [8, 35]. Research about adolescent SMU can inform how adolescents think and how they engage with different SM content and platforms [1, 21, 26], as well as, how their personality and SM exposure interplay [19]. Identifying the different roles people have on SNS can be useful in understanding how

people are interacting and also help recruit influencers to engage in SM marketing for health promotion and education [21].

CONCLUSION

In conclusion, SMU and adolescent mental health have a bidirectional relationship that occurs concurrently with personal and societal circumstances. There are perceived benefits and negative consequences regarding SMU among adolescents. SM can provide a platform for people to connect with their peers and medical professionals. However, personal and societal factors can contribute to problematic SMU. Problematic SMU has encompassed internet addiction, harassment, misinformation, and role modeling risky behaviors. Interventions to teach appropriate authorship and responsible navigation of SM can target at-risk populations as well as broad education integrated into schools.

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