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Adolescent's usage of social media and risky behavior: A review of meta-analysis evidence

Jerusha Sherlin ¹, Veena ¹, Haiqha Sadaf ², Zeeshan Ali ³, Madeva Nagaral ^{4,*} and Ansari Faiyaz Ahmed ⁵

¹ Department of Computer Science Engineering, Navodaya Institute of Technology, Raichur, India.

² Department of Computer Science Engineering, Cambridge Institute of Technology, Raichur, India.

³ Department of Mechanical Engineering, Navodaya Institute of Technology, Raichur, India.

⁴ Aircraft Research and Design Centre, Hindustan Aeronautics Limited, Bengaluru, 560037, Karnataka, India.

⁵ Department of Mechanical Engineering, University of Technology and Applied Sciences, Salalah, Oman.

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Abstract

Background: As technology advances, a wider range of activities are becoming feasible on devices with screens. A lifestyle heavily reliant on screens, though, can have a price. Problematic social media usage, according to our premise, would lead to more people developing mental health issues.

Objective: The goal of this review is to thoroughly analyze problematic social media usage among young people and how it relates to depressive, anxious, and stress-related symptoms.

Method: Relevant studies were found using a thorough search technique in PsycINFO, PubMed, Google Scholar, and ProQuest Dissertations and Theses Global.

Conclusion: This study helps future research that focuses on the underlying processes of problematic use of social media by providing more evidence of the link between problematic social media usage and poor mental health among adolescents and young adults.

Keywords: Social Media; Risky Behavior; Technology; Mental Health; Adolescence

1. Introduction

Technology is always developing, making a wider range of activities available on screen-based devices. With this rising use of digital technology, social networking reported routinely visiting at least one social media site [1]. A lifestyle heavily reliant on screens, though, can have a price. Multiple studies have shown a correlation between increased social media usage and signs of anxiety, depression [2,3], loneliness, poor psychological wellbeing [9], and worse self-esteem.

A small correlation between teenage SM use, as measured by frequency of use, and depression symptoms was found in a meta-analysis conducted in young people [3]. Certain study indicates that there is evidence supporting social media usage's possible advantages as well as its negative effects. For example, SM use has also been linked to better life quality, social support, wellness, and lower stress levels [4]. Problematic usage refers to the use of SM by those who exhibit symptoms like addiction in addition to excessive use, which is generally measured in terms of hours [5]. Problematic SM usage is a non-substance use disorder in which compulsive overuse of SM platforms leads to undesirable outcomes despite concern with and urge to do so [6]. The Facebook Addiction Scale, developed by Andreasen et al. [7] evaluate

* Corresponding author: Madeva Nagaral

drug use disorder symptoms such as salience, tolerance, obsession, decreased role performance, loss of control, and withdrawal to grade problematic Facebook usage. A recent meta-analysis [8] found that problematic SM use predicted depressed symptoms better than social media time. According to earlier studies, problematic SM use may be more essential than social media time. Teenagers use SM platforms for almost three hours a day on average, which is a large portion of their free time. Given that adolescent brain development is characterized by unique brain structure and function changes, as well as an increased sensitivity to peer pressure toward delinquency, it is imperative to comprehend the relationship between adolescent SM use and risky behaviors. In fact, most dangerous conduct

Begin throughout adolescence and include behaviors including drug use, risky sexual behavior, and violent behavior that put young people in danger of harm to themselves or others. Because of their increasing usage of SM at a period of identity development, when they are free to explore many life choices and adopt new beliefs, researchers have identified teenagers and students as a susceptible group in comparison to adults [9]. Additionally, their usage happens when crucial brain circuits involved in motivation and emotion control continue to grow [10]. Due to the significant role that SM plays in their daily lives, use habits might become problematic. With this context, we thoroughly investigated and analyzed the strength of the associations between problematic social media usage and a variety of outcomes related to mental health using the most recent data. We focused specifically on stress, anxiety, and depressive symptoms. Our a priori hypothesis of SM use adverse effect on all mental health outcomes that were investigated. Using age, gender, and the year of publication as variables, the relationship between problematic SM use and all outcome indicators pertaining to mental health was further investigated.

Physical violence is also widespread, with one in four teenagers reporting having engaged in at least one violent altercation. These dangerous practices have several negative health effects, legal repercussions, and early death, underlining the significance of comprehending their connection to teenage social media usage. The top three websites globally are Facebook, YouTube, and Twitter, with LinkedIn and X slipping to eighth and thirteenth place. The popularity of social networking platforms is a relatively new phenomenon. Utilization of social networking sites by American consumers increased from 8% in 2005 to 33% in August 2008. Focusing on Facebook particularly, Pew Research discovered that in 2008, 35% of Internet users utilized Facebook, and that number rose to 72% in 2013. Sweden (54%), the Netherlands (65%), and the UK (57%), all have high rates of social media use. The 2011 Arab Spring, the Obama presidential campaigns in 2008 and 2012, and other recent events have stoked curiosity in how SM may impact individuals' engagement in civic and political life. Researchers have hurried to record the consequences of SM usage on people's involvement in political and civic life as a result. Self-reported SM use and self-reported involvement in civic and political life are studied using cross-sectional survey data. Because meta-analysis may get over the limits of any one study, it is a vital addition to this area of study. A meta-analysis may look at how different research characteristics, such as sample sort, year of data disposal, type of political framework, sample size, and panel vs cross-sectional design, have an impact on the link between SM usage and involvement. Additionally, a meta-analysis may look at how the connection varies depending on the sort of civil and political action as well as the particular SM platforms used, which helps develop hypotheses about how SM influences involvement.

2. Social media use and risky behavior

Since teenage risk-taking and sensation-seeking behaviors have been shown to alter gradually in response to broader social and cultural influences, there may be a connection between the rise in SM usage among teens over the past ten years and the changes in their dangerous behaviors. The displacement hypothesis contends that regular SM usage displaces time spent engaging in health-promoting activities including in-person conversations, extracurricular activities, and physical exercise. Consequently, it is likely that substantial increases in teen usage of social media have replaced certain harmful habits like excessive alcohol consumption and drug use. It has been speculated that SM may provide a fresh setting in which teenagers' increased propensities for risk are exhibited due to increases in parental surveillance and societal hindrances on access to narcotics in Western nations. This paradigm generally asserts that peer influence mechanisms that impact teenagers' thoughts and actions are amplified in the SM context. According to the Facebook model, interactions between people and the resulting social networks shape people's perceptions of risk and help communities form. These communities imitate conduct that they perceive as being rewarded or appreciated.

subsequently is hypothesized that youth who utilize SM and the ensuing online communities are exposed to pro-hazardous action attitudes via the favorable depictions of risky conduct in information shared by peers and other respected individuals. The "super peer" idea holds that the media, as opposed to in-person contacts, functions as a "super peer" by having a particularly strong impact and putting enormous pressure on teenagers to participate in dangerous activities that are presented as normal. In contrast to traditional media or offline contexts, the Facebook influence model also suggests that the SM context has the potential to magnify these peer influence mechanisms. This is because there is a greater abundance of content that depicts risky behaviors, peer "likes" and comments provide

quantifiable reinforcement, and exposure to a larger network of people outside of one's immediate peer groups. The SM environment may also help to raise other developmental markers of risky behavior, including adolescent thrill seeking, by exposing users to content that portrays these dangerous practices as exciting and joyous. A valuable conceptual framework for conceptualizing how the SM milieu interacts with growing brain circuitry to aggravate teenagers' propensities toward unsafe conduct may come from developmental neuroscience approaches to adolescent risk-taking. Increased brain sensitivity to incentives and socioemotional signals causes teenagers to seek sensation and reward, but an immature cognitive control system makes it difficult to resist these potentially hazardous urges. Recent research also reveals that the socioemotional system's increased brain sensitivity intensifies adolescents' desire for social acceptance and raises the expected reward value of hazardous actions when performed in front of peers. When teenagers liked photographs and when they saw popular photos with lots of likes, their brain activity in areas related to reward processing, attention, demonstrating that quantitative reinforcement may be very pleasant. When teenagers, but not young adults, saw dangerous photographs on social media as opposed to neutral photos, there was less activity in brain areas connected to cognitive control, which was like neural responses seen in offline environments. Together, these models imply that SM usage may have a particularly strong influence on hazardous behaviors throughout adolescence. Teenagers who have a tendency to take chances or who regularly participate in dangerous activities are attracted to social media-based interactions and material, and they utilize SM more often as a means of expressing and fulfilling their risk-taking urge [10]. This provides more persuasive evidence in favor of the alternative directed hypothesis on the relationships between risky behaviors and SM use. Teens who have a history of hazardous behavior offline may find that SM gives them more possibilities to express this element of their personality online in addition to giving them a place to engage in these sorts of activities.

3. Methods

3.1. Present study

The fact that teenagers use SM extensively, have a higher neurobiological predisposition to take risks, and are more vulnerable to peer pressure, there is an increasing amount of research examining the relationship b/w using SM during adolescence and engaging in risky behaviors. It is critical to methodically evaluate the strength of the relationships between SM use and engagement in risky behaviors throughout studies in order to provide well-informed conclusions that impact theory, clinical practice, and social policy. There have not been many systematic reviews and meta-analyses, nevertheless, that try to include these results. In one meta-analysis, young people, and adults between the ages of 10 and 24 were shown to engage in hazardous sexual behaviors, such as having sex without using a condom, when exposed to sexually explicit content online. Although the early research revealed significant results, no studies are known to have examined the general usage of SM in connection to a wider spectrum of dangerous behaviors throughout adolescence [11]. Therefore, the main goal of the present research was to perform a systematic review and meta-analysis of peer-reviewed studies that looked at the connection b/w using SM and engaging in hazardous behaviors throughout adolescence. Examining sample and study variables that could explain the variation in impact sizes across studies was the secondary research goal.

Older samples, evaluation of only older social media platforms (e.g., Facebook, WhatsApp, Instagram, My Space), and in-person data collection were expected to show weaker positive associations between SM use and risky behaviors than younger samples, image-based platforms, and online data SM and adolescent development theories state so. The emphasis on status-oriented objectives may push adolescent guys to participate in dangerous activities to dominate their peer group, anticipated that studies including more males would have less positive correlations between social media use and hazardous behaviors compared to ones including more girls. Factors that were used as exploratory modifiers were the study's race/ethnicity, regional setting (western or non-Western nations), data collecting year, social media evaluation technique, publishing status, and article content.

3.2. Inclusion and Exclusion criteria

Studies were evaluated for inclusion in this meta-analysis and systematic review, which looked at the relationships between teenage hazardous behavior and SM usage, using the criteria mentioned below.

3.2.1. Criterion 1

Studies were recognized as relevant if their sample covered teenagers around the ages of 12 and 18. In order to prevent results from being mixed up with those from studies conducted while people were children or just starting to enter adulthood, studies were omitted if the sample's mean age was below 12.0 or larger than 18.0. Additionally, studies were disregarded if they included college students.

3.2.2. Criterion 2

Research that contained at least one SM use metric qualified for inclusion. All forms of SM use assessment, including self-report, reports from peers, parents, and teachers, as well as objective measurements of app use monitored by smartphones or other electronic devices, were acceptable for inclusion. The amount of time spent on SM (e.g., the number of hours in a typical day), the frequency of visits made by teenagers (e.g., the number of visits per week/day), or the frequency of behaviors that indicate SM engagement (e.g., the number of posts made) can all be used to measure usage. These characteristics connected to use are regarded as complementary. Social media refers to any interactive websites or internet applications (sometimes called "apps") that let users create distinctive user profiles, publish and share data with others, and create virtual social networks. Studies that evaluated SM use on a single social media site or across many platforms were also included. Studies that exclusively evaluated exposure to certain dangerous behaviors online or via SM platforms (such as drinking, sexual allusions) were disregarded since they do not provide an evaluation of SM use in general.

3.2.3. Criterion 3

Research was considered if they offered data on at least one dangerous activity practiced by teenagers. Risky activities were described as those that put people to danger or a high risk of bodily harm or early death, such as drug use, risky sexual conduct, and acts of violence. The misuse of prescription medications, together with the use of alcohol, cigarettes, marijuana, and other illicit drugs, was referred to as substance usage. Risky sexual behaviors include having sex too young (before the age of 15), having multiple sexual partners, having multiple partners at the same time, having one-night stands, having sex for cash, and not using pregnancy prevention methods. These behaviors increase the risk of unintended pregnancy, HIV infection, and other sexually transmitted infections (STIs). Studies that looked at risky online sexual behavior were also included. These included having sex with foreigners online, meeting people online with the intention of having sex either online or offline, and sharing, posting, or exchanging sexually explicit information via gadgets (sexting, cybersex).

Utilizing weapons or carrying a weapon, getting into a physical altercation, and utilizing dating violence were operationalized as violence-related activities. All measurement techniques of risky behaviors, which include self-report, parents, and educators, physiological assessments of substance use, medical diagnoses (such as HIV, STIs), records of seizures or disciplinary actions taken against students for risky behaviors, and communication via text or online activity were all eligible for inclusion. Suicide attempts and non-suicidal self-harm may be seen as violence-related actions, but they were left out since they are theoretically more strongly tied to internalizing problems.

3.2.4. Criterion 4

Studies must be sufficiently quantitative to determine a minimum of one effect size for the link between teenage SM usage and hazardous behavior in order to be considered eligible. Qualitative research and reviews of descriptive case studies were thus disregarded. The inclusion criteria included both published and unpublished investigations, such as conference papers, unpublished datasets, and peer-reviewed journal publications. If the authors of those investigations did not reply to repeated requests for the information or were unwilling to supply the required data, the studies with inadequate data to determine an effect size were eliminated. Due to a lack of resources for adequately translating papers, studies that were not published in English were also disregarded.

4. Literature study

On July 21, 2017, the following databases were searched: Psychnet: depression (search index phrases); online social networks, social media, or internet use. He suggests that rather than concentrating on total usage metrics, which probably represent very diverse exposures, future research should identify which forms of use may be beneficial (or detrimental) to mental health. [A meta-analysis examining the relationship between depressed symptoms and teenage social media usage]

Andreassen et al. [12] Research has consistently shown that addictive use of SM is more prevalent among females than males. Young people have quickly become accustomed to being constantly "online", and appear to adapt to new technologies faster than their older counterparts. Research also suggests that individuals that are not in a personal relationship are more prone to developing addictive SM use than people who have partners. He concluded that Although using SM is a normal and widespread modern behavior, individuals could be targets for interventions with the aim of preventing addictive and destructive online participation.

Xenos et al. [13] The transformative effects could be specific to this group who are intense social media users, but have relatively weak political habits and relatively undeveloped political identities. The correlations of SM use and political participation could be spurious. For example, both use of SM and participation might depend on personality traits.

Ghulam Shabir et al. [14] The purpose of this study was to examine how social networking sites have affected young people's evolving attitudes. A survey-style study was done, and 300 randomly selected youngsters answered the questionnaire. The major goals were to examine the impact of SM on young people's social lives, evaluate its advantages and preferred formats, gauge attitudes toward social media use, and suggest appropriate educational practices. The frequency, percentage, and mean score of the assertions in the data were examined. The majority of respondents agreed with these factors, selecting Facebook being their preferred social networking platform. Social media helps educate young people, but it may also erode social standards and hurt research on young people. It encourages immoral images, videos, and photographs, incites animosity between various populations, and deteriorates international relations. However, social media is crucial in raising young people's political consciousness.

Shelley Boulianne et al. [15] Interest in how social media affects civic and political engagement has grown in response to the Arab Spring and the Obama campaigns. Over 80% of the coefficients in a meta-analysis of 36 research indicated a link between SM usage and involvement to be favorable. The relationship's causation and transformative are still up for debate, however. Studies using panel data are less likely to find statistically significant positive coefficients, and the usage of SM in elections has little effect on turnout. Hanprathet N et al. [16] With 91 kin investigations, 136 extracted studies involved a total of 22094 patients. Men made up the majority, with women making up 72.6%. The average age was 39, and 8% of people did not report having any sexual activity. The average body mass index at the outset was 46.9.

Marino et al. [17] looked for relevant research on problematic SM usage and problematic use terminology in the ERIC, PsycINFO, and ProQuest databases. 157, 1,553, and 287 items, respectively, were found in the databases. The titles and abstracts of every publication were scrutinized by the writers. Based on three inclusion criteria—a big sample size, enough statistics to calculate the link between problematic SM use and mental health—full texts of studies that passed the first screening were found.

chiungjung Huang et al. [18] He analyzed the data from yielding 122 studies. Eleven investigations that he did each included two samples, therefore 133 independent samples with 244,676 people were examined. He studied 123 articles.

CS andreassen et al. [19] has found that even if using SM is a typical contemporary habit, certain people could benefit from treatments to stop addicted and harmful online behavior. To fully comprehend these linkages, more research using clinical and representative samples is required.

Laura A. Stockdale et al. [20] Over a three-year period, social networking sites remained mostly steady, although use grew from late adolescence to emerging adulthood without any unfavorable effects. However, the use of social networking sites to pass the time has also grown over time. At year three, initial social media usage was linked to problematic use, monetary stress, anxiety, and empathy. At year three, there was a correlation between rising social networking site usage and problematic use, anxiety, delinquency, and empathy. Overall, across three years, there was no correlation between utilizing social networking sites for any purpose and depressed symptoms. She concluded that According to research, the study hypothesizes that using social networking sites to kill boredom may raise people's chance of acquiring pathological inclinations and SM behavior patterns.

5. Discussion

5.1. Principal Findings

Among teenagers and young adults, this meta-analysis reveals outcomes measures of depression, anxiety, and stress in relation to problematic SM usage. There is evidence linking problematic SM usage among young people to poor mental health outcomes, notably elevated feelings of despair and anxiety and increased stress. The largest link was shown with anxiety, but this also showed the highest variation, perhaps because different measures were utilized in each study to evaluate anxiety symptoms. This meta-analysis offers more proof of the potential negative effects of problematic SM usage, even though the correlations are quite mild. Previous meta-analyses looking at SM use and mental health had very little impact. The variety of social media material and how people use or access their accounts on these platforms might be one reason for previously detected minor connections. Nighttime-specific use, passive use, the number of social media platforms, motivations for using, etc., impact mental health implications. Problematic SM use has "addiction-like" behavioral and psychological traits. It is characterized by excessive social media use and substance-related symptoms including withdrawal, tolerance, and reliance. Excessive social media use may be a more clinically

relevant behavior to study because it is associated with negative mental health symptoms more than hours spent on online social networks or screen time in general. Age-related effects on social media usage are still hotly contested. Some studies have shown no discernible age impact, while others have discovered evidence that teenage SM users are more likely than older users to have poorer mental health symptoms. Although this research was conducted on a mostly adult population. Reported that age did not alter the connection between problematic SM usage and depression. Age did not substantially alter the connection between the outcome factors taken together and problematic usage in our meta-analysis either. The confined age range and the similar mean ages of the many research suggest that this is the cause. It has been suggested that greater rates of SM use and developmental vulnerabilities in teenagers and young adults may explain the increased correlation between poorer mental health results compared to adults. Age may not be as important to consider when examining the mental health directly linked to problematic SM usage as a habit as it may be the intensity of reported problematic use symptoms. Future studies should compare teenagers and adults' side-by-side to see whether there is a difference in correlational strength, particularly when evaluating problematic usage.

5.2. Strengths and Limitations

This research has several restrictions. Each meta-analysis only contained a small number of papers; hence the power of the conclusions is somewhat constrained. Second, cross-sectional correlational data are used as the foundation for the outcomes. The direct effects of social media on psychological conditions such as depressed symptoms, anxiety symptoms, or stress cannot be used to establish a causal link. Social media use and mental illness may reinforce one other. Since the meta-analysis did not examine clinical diagnostics, it is unclear how many people had a known or possibly known clinical mental disorder. It's unclear whether persons with mental health diagnoses are more likely to have negative SM experiences or consequences than those without a diagnosis, which may affect the outcome factors being evaluated. Self-report measures dominate the research, and although the questionnaires have been verified, this limits the conclusions. Additionally, it is critical to keep in mind that large variations in research design led to the variability of impact sizes among research, which may have explained why there were no discernible moderating effects. The considerable moderating effects shown when doing studies for certain hazardous behaviors, such as drug use and risky sexual activity, lend credence to this idea. There were only 14 trials on each outcome, therefore moderating effects were unlikely. Although moderation studies indicated no consistent link between SM use assessment technique and study impact sizes, the literature's diversity in SM use assessment remains a problem. When accounting for between-study effect size variation, age, social media type, demographic location (western or foreign), and gender for drug use were trend-level modifiers.

Evidence from earlier meta-analyses examining the connection between SM usage and measures of psychological stability also points to the possibility that these research features may be responsible for variations in study impact sizes. Therefore, future research should focus on these aspects to better understand their potential impact across studies and hazardous behavior domains.

6. Conclusion

This research emphasizes the connection between social media usage and detrimental effects on teenagers' and young adults' mental health, such as depression, anxiety, risky sexual acts and stress. The impacts of social media on users' mental health are well documented, but more study is required to establish the causal link and how social media may be utilized without endangering users' mental health. Given the popularity of social media among young people, additional funds should be set aside to comprehend this connection and avoid unfavorable repercussions.

For relevant subscales, research must refine SM use and hazardous behavior ratings. These innovations include objective social media usage indices, friend, parent, and teacher observations, and various two-dimensional self-report questionnaires. Cell phones and experience sampling methods can passively collect objective social media use measures and concurrent (as opposed to retrospective) online risky behavior use assessment may minimize recall and social desirability biases, making them ideal for studying social media use and risky behaviors. More accurate evaluation across measuring approaches would strengthen this literature's results and suggestions and better grasp this study's relationships.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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