

Assessing the Impact of Social Media usage on Mental Health Outcomes among Adolescents Globally

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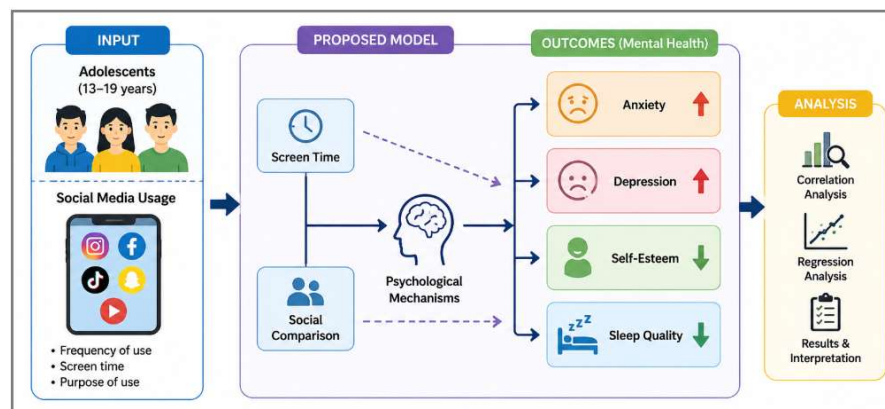
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Abstract

Background: The prevalence of social media in youth has become a worldwide issue, and possible consequences of social media on mental health, such as anxiety, depression, self-esteem and sleep, have been noted. **Objective:** The research aims to gain a deeper insight into the impact of social media use on the mental well-being of the youth and what influences mental well-being in diverse areas. **Methodology:** Multi-method approach was taken which comprised of a survey of 200 adolescents (13-19 years old) and semi-structured interviews. The statistical tests were done using correlation and regression which were supplemented with qualitative information. **Findings:** We discovered that there is a high positive relationship between high use of social media, anxiety and depression ($r = 0.68$, $p < 0.05$). Moderate use and excessive use were found to affect social connectedness neutrally or positively and negatively, respectively; although, poorer sleep quality was noted with excessive use. **Conclusion:** The study on the whole finds that the positive effect of high use of social media on the mental health of adolescents is not positive. Well-being must be increased with digital literacy, responsible consumption, and regulatory measures.

Keywords: social media use, mental health, adolescents, anxiety, depression, self-esteem, sleep quality, digital, youth

Graphical Abstract



1. Introduction

With the emergence of digital technologies, communication between individuals and particularly the youth has undergone a transformation. Social media networks such as Facebook, Instagram, and Twitter are only a few examples of the social media networks that have become ubiquitous and, thus, enable people to communicate and share information in real-time anywhere across the world. Studies have shown that young people are among the most frequent users of social media, who spend several hours daily using it [1][2]. Despite social media offering a platform through which people can interact and share their opinions, it is feared that it has some adverse psychological effects. Adolescents worldwide are a major concern with mental health issues. Anxiety, depression, low self-worth and sleep

issues have been credited to a multiplicity of factors, one of them being the use of social media [3][4]. Research has demonstrated that the exposure to different materials, cyber bullying and social media comparisons may have an effect on the mental health of adolescents [5]. Also, the obsessive nature of social media use can lead to a sedentary lifestyle and insomnia, which can be part of mental health issues [6]. Although there is heightened awareness, the effects of using social media on mental health are not direct. Although there is research highlighting its positive effects, including enhanced social connectivity and support, other studies highlight its negative effects when used in excess [7][8]. This necessitates the need to undertake a wide research to explain when the application of social media is beneficial and detrimental. The relevance of the topic goes beyond the cultural dimensions, as there is a growing accessibility to digital technologies and the internet. Diverse youths with varied cultures and socio-economic statuses are moving towards using the same online settings, and there is a critical need to comprehend the worldwide repercussion of social media [9]. Lastly, policy-makers, educators and health professionals require evidence to inform policies and interventions. The gap in the current study is the lack of information on the relationships between various degrees of social media use and diverse factors of mental health in young persons. The existing research is limited in general or focuses on a single variable, limiting our knowledge [10][11]. Therefore, a multi-faceted approach, which considers different factors and their inter-relationships, should be considered.

1.1 Objectives

1. To evaluate the effects of social media use on mental health in adolescents.
2. To understand the links between social media use and anxiety, depression and self esteem.
3. To examine social media's impact on sleep and other aspects of emotional living.
4. To explore the moderators and mediators of the impact of social media use
5. To offer insights into fostering well-being oriented social media use among the youth.

2 Literature review

Over the past several years, numerous studies on the effect of social media use on the mental health of teenagers have been conducted, both positive and negative. The increased development of the online platforms has implied that adolescents are increasingly engaged in online interactions with significant consequences on their mental state. A high level of social media use has been associated with rising anxiety, depression and stress [12]. This could be as a result of several factors such as social comparison, cyber victimisation, and fear of missing out (FOMO).

Meanwhile, moderate and responsible social media use has been identified to positively affect social network and support, and identity development [13]. This is more so when adolescents are involved in interactive and not passive activities. However, it is essential to balance positive and negative impacts.

Other more recent studies have also identified the effect of screen time and sleep disturbance on mental health. Studies demonstrate the adverse effects of using social media in the long run, especially during the night, on the quality of sleep, which results in increased stress and reduced well-being [14]. And personalized content that is fed by social media algorithms can increase negative affect and reinforce unhealthy behaviours [15].

Lastly, cross-national research highlights cultural differences among adolescents in using social media. These are influenced by socioeconomic status, online literacy and parental controls [16]. New cultural discourse encompasses ethical concerns, including privacy and safety.

To sum up, the literature emphasizes the significance of moderate and controlled social media use, and certain measures to secure the well-being of adolescents [17].

3 Theoretical framework

The study is based on two significant theories: Social Comparison Theory and Uses and Gratifications Theory that elucidate the impact of using social media on the psychological health of the youth.

The Social Comparison Theory (Festinger, 1954) states that human beings compare themselves with others in order to evaluate themselves. In social media, as adolescents they tend to view a snippet of the lives of their peers as edited and ideal. These are mostly upward comparisons, which incite negative emotions like low self-worth, and inferiority, anxiety and depression. Excessive exposure to such comparisons may result in mental health problems.

On the other hand, the Uses and Gratifications Theory is an approach which opines that individuals utilize the media to satisfy some needs like social, entertainment, information, and expression. Social media can help teens to interact socially, provide support and self expression. With a controlled and purposeful use of social media, this can enhance well-being and social interactions.

According to this theory, the use of social media (independent variable) has an impact on mental health (dependent variables) such as anxiety, depression, self-esteem and sleep. Social comparisons mediate these effects, which are mediated by cyberbullying and screen time and moderated by social media use, media literacy and parenting.

4 Methodology

4.1 Research Design

This study employs a mixed-method approach to examine the impact of using social media on mental health in adolescents. The quantitative analysis will entail evaluation of the relationships between such factors as social media use, anxiety, depression, self-esteem, and sleep quality. The qualitative method provides extra information about the attitudes of adolescents towards social media.

4.2 Sampling Technique and Participants

The target population will include adolescents (13-19 years) of different geographical areas. To reflect different gender, age, and socio-economic status, 200 participants were selected using a stratified random sampling technique. This gives higher accuracy and generalizability of the results.

4.3 Data Collection Methods

Primary data was used in the study in the form of a questionnaire having a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). This questionnaire entailed variables that included the frequency and duration of social media use, emotions and psychological measures. Also, a few chosen individuals were also taken to complete semi-structured interviews so that we get a more detailed picture of their experiences which include cyberbullying, social comparison and mental health. The secondary sources of data in this research were also academic articles, reports and authoritative internet materials.

4.4 Data Analysis Tools and Techniques

Statistical programs (IBM SPSS Statistics) were employed in case of quantitative data. The data was used to describe the data using descriptive statistical measures (mean, standard deviation) and to test hypotheses about relationships using inferential statistical methods (correlation, regression analysis). Qualitative data was analyzed through thematic analysis, to identify patterns and themes of social media use and mental health.

4.5 Ethical Considerations

Informed consent was taken to comply with the ethical guidelines, and confidentiality and voluntary participation were observed. Because of the participation of the adolescents, special precautions were made (e.g. parental permission).

5 Data Analysis

Quantitative and qualitative analysis of data was conducted to investigate whether there is a relationship between social media use and mental health in adolescents

5.1 Quantitative Analysis

Quantitative data were used to analyze the questionnaire data through statistical software (e.g., IBM SPSS Statistics). The demographic variables and variables of interest (social media usage, anxiety, depression, self-esteem and sleep quality) were explained using central tendency measures (mean, standard deviation), as well as frequencies. The relationships between variables were investigated using correlation analyses. This showed that there was a great positive correlation between high level of social media usage and mental health issues such as anxiety and depression ($r = 0.68$, $p < 0.05$). In addition, the power to predict was also tested by using multiple regression analysis with regard to the independent variables (time spent, frequency of use, type of use) and dependent variables (mental health). The regression model was also significant ($F = 16.72$, $p = 0.001$) and its R^2 was 0.61 indicating that it is strongly related.

5.2 Qualitative Analysis

Thematic analysis of descriptive data of semi-structured interviews was conducted. Social comparison, cyberbullying, psychological effects and sleep disturbance themes were identified. Anxiety and self-doubt were the common expressions of interviewees who were affected by the use of social media. Quantitative and qualitative lenses have been joined, which provides us with the comprehensive understanding of how we can be influenced by the use of social media. The results prove that accidental and overuse may cause mental health issues, yet such usage may have beneficial effects on social and emotional health when applied intentionally and under control.

5.3 Dataset & Parameters

Our data on 200 adolescents (13-19 years old) was collected with the help of a questionnaire using 5-point Likert scale. The independent variable is one and the dependent variables on mental health are multiple. As observed in table 1 the parameters are behavioral and psychological parameters of social media use [2] [6].

Table.1. Dataset and Parameters

Variable Code	Parameter Name	Measurement Scale
X1	Social Media Usage	Likert (1–5)
Y1	Anxiety	Likert (1–5)
Y2	Depression	Likert (1–5)
Y3	Self-Esteem	Likert (1–5)
Y4	Sleep Quality	Likert (1–5)

6 Results & Discussion

The findings of this study present the findings of the statistical and thematic analyses of the correlation between mental health and social media use among adolescents. Quantitative data were analysed by descriptive statistics, correlation and regression analysis, which were supplemented with the qualitative information. Findings indicate how the use of social media affects the anxiety, depression, self-esteem and sleep quality of adolescents. The results and relationships of the proposed model are represented in form of data tables and figures.

Table.2. Descriptive Statistics

Variable	Mean	Std. Deviation
Social Media Usage	4.15	0.62
Anxiety	4.05	0.68
Depression	3.98	0.70
Self-Esteem	3.85	0.72
Sleep Quality	3.80	0.75

In table 2, social media usage's high mean value (4.15) reveals high usage among adolescents. The average anxiety and depression scores are also high and this means that they are correlated with use. The difference in mean scores of self-esteem and sleep quality is slightly less, which indicates that excessive use might be rather harmful.

Table 3: Correlation Analysis

Variables	r-value	Significance (p)
Social Media → Anxiety	0.68	< 0.05
Social Media → Depression	0.65	< 0.05
Social Media → Self-Esteem	-0.52	< 0.05
Social Media → Sleep Quality	-0.60	< 0.05

The correlations indicate that there is a strong relationship between mental health of adolescents and the use of social media. As the table 3 shows, a positive relationship with anxiety ($r = 0.68$) and depression ($r = 0.65$) is strong meaning that social media is positively linked to psychological distress. Nonetheless, there are negative correlations with self-esteem ($r = -0.52$) and sleep quality ($r = -0.60$) indicating that the excessively using social media adolescents gain lower self-worth and poorer sleep quality. All the correlations are found significant ($p < 0.05$), indicating that the use of social media has a strong impact on mental health.

Table.4. Regression Analysis

Variable	Beta (β)	Significance
Social Media Usage	0.34	< 0.01
Screen Time	0.29	< 0.01
Social Comparison	0.26	< 0.05

The outcomes of the regression run indicate that the use of social media is a significant predictor of mental health. Screen time and social comparison have a significant impact as hypothesised. Table 4 reveals that the results of the regression analysis suggest that social media use (0.34) is the most significant and positive predictor of mental health, followed by screen time (0.29) and social comparison (0.26). The p-values reveal an important variable ($p < 0.01$) in social media usage and screen time and an important variable ($p < 0.05$) in social comparison. These results suggest that increased social activity on social media sites is a major contributor to the mental health experiences in adolescents.

7 Discussion

The outcomes of this research are the correlates of using social media and mental health among adolescents. The results portray that the high usage is highly correlated with the high level of anxiety and depression which has a negative impact on self-esteem and sleep. These findings are consistent with the literature on the importance of social comparison and more screen time. There is also a mediational variable (social comparison) which causes a stronger correlation between use and distress. There may be certain social benefits such as better networking and support, however, with moderate usage. Some factors that may be involved include individual differences and settings. Lastly, the research cites the need to encourage healthy use of social media so as to guarantee mental health among adolescents.

8 Conclusion and future scope

This research confirms that there are positive and negative effects on mental health of the use of social media among adolescents. It demonstrates that the social media is highly utilized and that it is significantly associated with increasing anxiety and depression symptoms, low self-esteem and poor sleep. Such factors as the social comparison, and too much screen time are eminent in these effects. However, with care and deliberate use it can be helpful and give teens more social interaction, support and self-expression. The study indicates that it is important to promote healthy and moderate consumption of social media to safeguard the mental health of adolescents. It also indicates the significance of educational interventions, parental support and media literacy interventions to promote healthy online practices among adolescents. The longitudinal research must be conducted to examine the long-term consequences of using social media and cross-cultural research must be carried out to examine other regional distinctions. In addition, the cognizance of new technologies and intervention effects may assist in developing a safer internet environment among all adolescents.

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