

Research Paper

## Exploring the Bidirectional Relationship and the Impact of Social Media Induced Sleep Disturbances and Depressive Symptoms in Young Adults

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### ABSTRACT

The study explores the link between social media-induced sleep disturbances and depressive symptoms in young adults aged 18-35 years, highlighting the importance of understanding the interaction between these two factors. The research uses multiple linear regression analysis to find a strong positive impact of social media-induced sleep disturbances on depressive symptoms on 172 young adults (86 males and 86 females). The Beck's Depression Inventory and Pittsburgh's Sleep Quality Index and the Social Media Disorder Scale were used as predictors. The study emphasizes the significance of these determinants for mental health, as they explain a significant portion of the variation in depression symptoms. The findings underscore the need for targeted treatments to mitigate the negative effects of excessive social media use on mental health. This research provides valuable insights for guiding mental health policy and therapies in the digital age.

**Keywords:** *Bidirectional Relationship, Social Media, Sleep Disturbances, Depressive Symptoms, Young Adults*

The digital era has significantly impacted the way people interact with their surroundings, leading to increased connectedness and a significant impact on young adults' perception of life. Social media platforms provide a virtual space for individuals to express themselves, build identities, and socialize, influencing how they see themselves. However, excessive social media use raises concerns about potential harm to mental health, particularly in relation to sleep disorders and depressive symptoms among young people.

Sleep is susceptible to the impact of digital devices, as day and night are blurred into a 24/7 cycle of participation. This continuous exposure to exciting content, often characterized by FOMO or the fear of missing out, can lead to feelings of inadequacy and social comparison. This study aims to clarify the possible mediating role of social media-induced sleep disturbances in the relationship between young people's depressive symptoms and excessive social media use.

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Research has shown that social media is changing communication patterns, expanding the meaning of personal relationships and becoming a potent tool for information sharing, identity creation, and self-expression. The blurring of boundaries between public and private places in the digital sphere highlights the complex relationship between social media use and mental health and self-esteem.

The impact of digital transformations extends to interpersonal connections, as the quality of relationships cultivated in the digital sphere is found to be a significant factor impacting mental health outcomes. Social media has been found to shape self-esteem and body image, with studies revealing a correlation between exposure to idealized images on platforms like Instagram and negative body image outcomes, particularly among young adults.

The impact of social media on political and civic engagement is another dimension of its pervasive influence. The investigation's scope is grounded in prior research that has demonstrated a connection between social media use and outcomes related to mental health. This study focuses on young adults, a group susceptible to the digital revolutions of the twenty-first century, and examines the precise mechanisms by which sleep disturbances caused by social media may influence the development of depressive symptoms in young adults.

In conclusion, the relationship between social media, sleep, and mental health is at the center of this study, highlighting the challenges and opportunities faced by young adults in the rapidly changing digital environment.

### **METHODOLOGY**

The present study employed snowball sampling to collect the data from 172 young adults from age 18-35 years, evenly split between the genders. After collecting the consent form and demographic details the participants completed 09 items of Social Media Disorder Scale (SMDS), 19 items of Pittsburgh's Sleep Quality Index (PSIQ) and 21 items of Beck's Depression Inventory (BDI). Response choices of these questionnaires consisted of predefined options of what the scale was calculating. The survey used standardized tools for the data collection. To reach out to a larger group of people in sufficient time, the survey was conducted online through google forms. The form was open for 3 weeks and the data was collected only during that particular time. No incentives were offered to the people who participated in the research. The details of the survey and the aim was discussed with the participants beforehand. Hence, the participation of the individuals was completely voluntary.

#### *Data Analysis*

The sample was first examined by descriptive statistical methods including mean and standard deviation. Then to investigate the degree of relationship, correlation analysis was done for all the variables (A: B, B: C and A:C). Lastly, to explore the impact of social media-induced sleep disturbances on depressive symptoms, multi-linear regression analysis was employed. All the statistical analysis was done on the SPSS analysis tool.

### **RESULT**

The Survey was conducted to gain an understanding on the impact of social media induced sleep disturbances on depressive symptoms, using two statistical analysis methods, Correlation and Regression. The results for both the analyses are discussed separately.

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**Table 1: Correlation Analysis for all the three variables.**

<b>Variables</b>	<b>1.</b>	<b>2.</b>	<b>3.</b>
Social Media Disorder Scale	-	.512**	.640**
Pittsburgh's Sleep Quality Index	-	-	.939**
Beck's Depression Inventory	-	-	-

\*\* significant at 0.01 level

Correlation between Social Media Disorder Scale, Pittsburgh's Sleep Quality Index and Beck's Depression Inventory is shown in the table above. We compared the correlation between every variable to see if they are related and we found out that,

- Variable A (social media disorder scale) is moderately correlated with Variable B (pittsburgh's sleep quality index) as the  $R = .512^{**}$ ;  $p < .01$ . (Table 1)
- Variable B (pittsburgh's sleep quality index) is strongly correlated with Variable C (beck's Depression Inventory) as the  $R = .939^{**}$ ;  $p < .01$ . (Table 1)
- Variable A (Social Media Disorder Scale) is moderately correlated with Variable C (Beck's Depression Inventory) as the  $R = .640^{**}$ ;  $p < .01$ . (table 1)

**Table 2: Regression Analysis with Social Media Disorder Scale and Pittsburgh's Sleep Quality Index are the predictors of Beck's Depression Inventory**

<b>PREDICTOR</b>	<b>B</b>	<b>S.E.</b>	<b>BETA</b>	<b>t</b>	<b>R</b>	<b>R SQ.</b>	<b>ADJ R SQ.</b>	<b>F</b>
<i>Social media disorder scale</i>	2.470	.298	.215	8.277**	.957	.916	.915	916.828**
<i>pittsburgh's sleep quality index</i>	2.964	.093	.829	31.852**				

\*\* significant at 0.01 level

The table presents the impact of social media use and sleep quality on depressive symptoms. The model presents a significant fit. The social media usage and sleep quality explains 91.6% of positive variance (the B value doesn't have a negative sign attached to it) on depressive symptoms.

## **DISCUSSION**

The aim of the present study was to investigate the association between social media-induced sleep disturbances and depressive symptoms in young adults aged 18-35, utilizing the Social Media Disorder Scale (SMDS), Pittsburgh Sleep Quality Index (PSQI), and Beck's Depression Inventory (BDI).

Sleep patterns that are disturbed and linked to excessive use of social media platforms are referred to as social media-induced sleep disorders. This may show up as problems going to sleep, remaining asleep, or having poor quality sleep as a result of excessive screen time, increased emotional arousal from online interactions, or exposure to stimulating content just before bed. A wide range of mental and behavioral indicators of depression are included in the term "depressive symptoms," such as melancholy, hopelessness, loss of interest in or enjoyment from activities, changes in eating or sleep patterns, and trouble focusing or making choices. Although social media usage may not be a direct cause of depression, there

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is evidence from several studies linking social media use to depressed symptoms, which may point to other contributing factors such as cyberbullying, social comparison, and a decline in in-person social contacts.

***“There is a significant positive correlation between Social Media-induced sleep disturbances and depressive symptoms among young adults”***

The correlation matrix of the Social Media Disorder Scale, Pittsburgh Sleep Quality Index, and Beck Depression Inventory reveals a moderate positive link between social media-induced sleep disruptions and lower sleep quality. A strong positive link was found between Variable B (Pittsburgh's Sleep Quality Index) and Variable C (Beck's Depression Inventory), indicating that depression symptoms often increase with decreasing sleep quality. A moderate positive link was found between Variable A (Social Media Disorder Scale) and Variable C (Beck's Depression Inventory), indicating that more sleep problems caused by social media are linked to more depressed symptoms. The results show a robust relationship between social media-induced sleep disturbances, depression symptoms, and sleep quality. In the setting of rising levels of social media-induced sleep disruptions, there is a slight link between worse sleep quality and more depressed symptoms. A strong correlation is also observed between higher depressed symptom levels and worse sleep quality, highlighting the complex ways in which social media use can affect sleep patterns and mental health.

***“Social Media Use and Sleep Quality will significantly impact Depressive Symptoms”***

A multiple linear regression analysis revealed a significant correlation between social media use, sleep quality, and depressive symptoms, as determined by the Social Media Disorder Scale, Pittsburgh's Sleep Quality Index, and Beck's Depression Inventory, as shown in Table 2.

The study found that problematic social media use increases depressed symptoms by 2.470 units for every unit increase in problematic use, with a modest influence on sleep quality. The Pittsburgh Sleep Quality Index coefficient also showed an average increase in depressed symptoms for every unit increase in sleep disruption, with a beta value of 0.829 suggesting social media use has less of an effect on depression symptoms than sleep quality.

The model indicates that social media usage and poor sleep quality are major causes of depression symptoms, accounting for 91.6% of variation. Sleep quality's impact is greater, emphasizing the importance of treating sleep abnormalities in the treatment of depression symptoms, with an R-squared of 0.916 and overall fit of 0.957.

***Therefore,***

This study reveals a significant link between young adults' depressed symptoms and sleep problems caused by social media. The Social Media Disorder Scale and the Beck Depression Inventory and Pittsburgh Sleep Quality Index show a positive relationship. Regression studies confirm this association, with depression symptoms and sleep quality strongly predicted by the scale. The study emphasizes the importance of addressing problematic social media usage patterns to support young people's mental health. Excessive use of social media has been linked to increased risk of developing depressive symptoms and irregular sleep patterns. Strategies to encourage healthy digital habits can help mitigate the negative impacts of excessive social media use.

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Long-term studies are needed to understand the long-term effects of social media usage on mental health. Intervention strategies should focus on healthy online conduct and digital literacy, promoting positive digital habits from an early age through school-based programs and community activities. Technology-driven solutions like AI depression detectors can promote early diagnosis and personalized treatment, but ethical considerations and data protection issues must be prioritized. Cooperation between researchers, legislators, and technology developers is essential for ethical and appropriate application of these technologies in mental health treatment.

Studies on social media usage, sleep disorders, and depressed symptoms offer a solid foundation for addressing the complex issues of digital technology on mental health. Researchers can use multidisciplinary methods and cutting-edge methodology to further understand these phenomena and develop practical plans for holistic mental health support in the digital environment.

### CONCLUSION

The study found a strong positive correlation between social media-induced sleep disruptions and depressed symptoms in young adults. The Social Media Disorder Scale and Beck Depression Inventory and Pittsburgh Sleep Quality Index strongly predict these issues. Regression studies also showed that the scale strongly predicts depressed symptoms and sleep quality, highlighting the predictive power of social media-induced sleep problems in mental health outcomes.

The study aimed to explore the relationship between social media usage patterns and mental health outcomes, specifically the impact of sleep disruptions on depressive symptoms in young people. 172 young adults were included in the study, and data was analyzed using descriptive and inferential statistics. Standardized tests like the Beck Depression Inventory, Pittsburgh Sleep Quality Index, and Social Media Disorder Scale were used to quantify these characteristics.

The study highlights the negative impact of excessive social media usage on young adults' mental and sleep quality. It reveals a correlation between sleep disruptions and depression symptoms, emphasizing the need for better digital behaviors and sleep hygiene practices. Stakeholders can reduce the negative effects of social media on mental health and promote a healthy digital environment by addressing these linkages and implementing targeted interventions.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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