

## Cross sectional study of Association between Social-media Use and mental health

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### Abstract:

**Background:** The relationship between social media use and mental health has garnered significant attention due to the widespread popularity and impact of social media platforms. Understanding the association between social media and mental health outcomes is essential for informing interventions and promoting well-being in the digital age. **Materials and Methodology:** A comprehensive review of existing research literature was conducted to examine the association between social media and mental health. Studies investigating various mental health outcomes, such as subjective well-being, depression, anxiety, were included. Factors such as social media use patterns, individual characteristics, and underlying mechanisms were explored. **Results:** The present study was conducted in 107 randomly selected individuals. It revealed mixed findings regarding the association between social media use and mental health. While some studies indicated negative associations, suggesting that excessive or problematic social media use was linked to higher levels of depression, anxiety, and loneliness, other studies reported no significant effects or even positive associations between social media use and mental health outcomes. Longitudinal research highlighted the bidirectional nature of the relationship, indicating that social media use can both influence and be influenced by mental health outcomes over time. These diverse findings underscore the complexity of the relationship between social media use and mental health, highlighting the need for further research to better comprehend the underlying mechanisms and potential moderators involved. By addressing these gaps, future studies can provide a more comprehensive understanding of the impact of social media use on mental health outcomes. **Conclusion:** The association between social media use and mental health is complex and multifaceted. Factors such as the type and intensity of social media use, individual characteristics, social comparison processes, cyberbullying, and online social support may influence the relationship. Further research is needed to unravel the causal pathways, identify vulnerable populations, and develop targeted interventions to promote positive mental health in the context of social media use.

**Keywords:** social media, mental health, subjective well-being, depression, anxiety, sleep quality, self-esteem, loneliness, social comparison, cyberbullying, online social support.

### Introduction:

Social media platforms have become ubiquitous in today's digital society, providing individuals with unprecedented opportunities for social connection and information sharing. However, concerns have been raised regarding the potential impact of social media use on mental health. As the popularity and usage of social media continue to rise, it is crucial to understand the association between social media and mental health outcomes. This cross-sectional study aims to

examine the relationship between social media use and mental health indicators, including depression, anxiety, and subjective well-being, among a representative sample of participants. Numerous studies have investigated the association between social media use and mental health, but findings have been inconsistent. Some studies have indicated that excessive or problematic social media use is linked to negative mental health outcomes, such as higher levels of depression and anxiety. For instance, research has shown that increased social media use is associated with declines in subjective well-being among young adults[1]. Additionally, certain aspects of social media, such as cyberbullying and social comparison, have been linked to negative mental health outcomes[2][3]. However, other studies have found no significant associations or even positive effects of social media use on mental health [4][5].

This cross-sectional study contributes to the existing body of literature by providing valuable insights into the relationship between social media use and mental health outcomes. By employing a representative sample, we aim to capture a broad range of experiences and ensure the generalizability of our findings. Through the assessment of mental health indicators, including depression, anxiety, and subjective well-being, It evaluates the potential association between social media use and mental health. Understanding the nuances of this relationship will aid in the development of targeted interventions and guidelines to promote positive mental well-being in the context of social media use.

**Aim:**

To investigate the association between social media use and mental health indicators, including depression, anxiety, and subjective well-being.

**Objectives:**

1. To assess the extent and patterns of social media use among the study participants.
2. To examine the prevalence and severity of mental health indicators, including depression, anxiety, and subjective well-being.
3. To determine the association between social media use and mental health indicators, considering factors such as frequency and duration of social media use.

**Material and Methodology:**

This cross-sectional study employed a survey-based approach to collect data on social media use and mental health indicators. Participants recruited from a representative sample to ensure the generalizability of the findings. The study targeted a diverse population, including individuals of different ages, genders, and socio-cultural backgrounds. A sample size calculation conducted to determine the appropriate number of participants to achieve adequate statistical power. Total 107 individuals participated .

A structured questionnaire administered. Social Networking Usage Questionnaire, HAM-D, HAM-A, to assess mental health indicators (e.g., depression, anxiety), and potential moderating variables (e.g., age, gender, socio economical status, type of family etc).

**Inclusion Criteria:**

1. Participants aged 18 years or above.
2. Regular users of social media platforms (e.g., Facebook, Instagram, Twitter).
3. Willingness to provide informed consent and participate in the study.
4. Sufficient proficiency in the language of the survey instrument.

**Exclusion Criteria:**

1. Participants below the age of 18.
2. Individuals who do not use social media platforms.
3. Inability or unwillingness to provide informed consent.
4. Limited language proficiency that hinders comprehension of the survey questions.

Descriptive statistics used to summarize participants' demographic characteristics, social media use patterns, and mental health indicators. Inferential statistical analyses, such as correlation and regression analyses, conducted to examine the associations between social media use and mental health outcomes. Subgroup analyses and moderation analyses performed to explore potential moderating factors. Statistical software packages utilized for data analysis.

Approval from the institutional ethical committee was obtained. Participant confidentiality and privacy maintained, and informed consent obtained from all participants prior to their inclusion in the study.

**Observation and Results:****Table 1: Sociodemographic data**

Sr.No.	Parameters		Males	Females
1.	Age	18 – 30 yrs	25	30
		31 – 40 yrs	21	12
		41 – 50 yrs	13	04
		51 – 65 yrs	02	--
2.	Education	Illiterate	--	--
		Highschool and above	13	28
		Graduate	38	10
		Post- graduate	10	8
3.	Marital status	Single	23	20
		Married	32	24
		Saperated/Divorced	07	02
4.	Occupation	Unemployment	08	05
		Private Job	22	28
		Government Job	21	10
		Others	10	03
5.	Residence	Rural	12	09
		Urban	49	37
6.	Type of Family	Nuclear	42	35
		Joint	19	11
		Other		
7.	Income group	Poor	----	--
		Lower middle	3	--
		Upper middle	30	20
		Higher	29	26

The table shows Social media use more in 18 – 30 yrs age group 51.40% indicating active and productive age group engage in Social media activities Female group outnumbers the males. Those having degrees or graduates engage more 44.85% than others. Married population

constituted 52.33% as major group as compared to others. Those doing private job engage more. 46.72%. May be work from home has facilitated the indulgence. Easy availability of networks may increase the use of social media in urban population as seen 80.37%. Similarly Major population is seen from Nuclear families, and upper middle to higher income group.

**Table 2:** Social Media Use: Duration of Usage

Categories	Frequency	Percentage
Less than 1 hour	21	19.62%
1-2 hours	34	31.77%
2-3 hours	16	14.95%
3-4 hours	13	12.17%
More than 4 hours	23	21.49%

Table 2 presents data on social media use, categorizing the frequency of usage into different time intervals. The categories range from "Less than 1 hour" to "More than 4 hours." The table includes the frequency, representing the number of participants falling within each category, as well as the corresponding percentages. The data reveals that among the sample, 31.77% reported spending 1-2 hours on social media, while 19.62% reported "Less than 1 hour" .21.49% reported "More than 4 hours." The table provides a clear overview of social media usage patterns, allowing for an understanding of the distribution of usage across different time intervals.

**Table 3:** Mental Health Indicators

Categories	Depression	Anxiety	Subjective Well-being
Low severity	09	05	09
Moderate severity	16	08	11
High severity	04	02	06
Not present	02	25	10

Chi square: 3.20;  $p > 0.05$ ; Not significant

Depending on duration invested in social media use, Severity of Social media use can be divided into 1. Not present: duration of use less than 1 hour, 2. Low: 1 – 2 hours, 3. Moderate: 2 – 4 hours, 4. High: 4 Hours and more

Table presents data on mental health indicators, including depression, anxiety, and subjective well-being, categorized by severity levels. The categories range from "Low severity" to "Not present." The table displays the frequency of participants falling within each category for each mental health indicator. The chi-square value is reported as 3.20, indicating the result of a chi-square test. The p-value is greater than 0.05, suggesting that there is no significant association between the mental health indicators and their severity levels. Therefore, the findings suggest that the relationship between these variables is not statistically significant in this study.

**Table 4:** Social Media Use Frequency and Duration:

	Short	Long
Low Frequency	20	15
Moderate Frequency	35	25
High Frequency	15	10
Very High Frequency	5	10

Chi square: 6.16;  $p > 0.05$ ; Significant

Table 3 provides information on the relationship between social media use frequency and duration. The table is divided into two columns representing "Short" and "Long" durations, and rows representing different frequency levels, from "Low Frequency" to "Very High Frequency." The table displays the frequency of participants falling within each combination of frequency and duration. The chi-square value is reported as 6.16, indicating the result of a chi-square test. The p-value is greater than 0.05, indicating that there is a significant association between social media use frequency and duration. These findings suggest that the duration of social media use is related to the frequency of use, and this association is statistically significant in the context of the study.

### **Discussion:**

The study provides data on social media use, presenting the frequency and percentage distribution across different categories of usage time. The findings show that the majority of participants reported using social media for 1-2 hours (31.77%) and less than 1 hour (19.62%). These results align with previous research indicating that a significant proportion of individuals engage with social media platforms regularly[6]. However, it is worth noting that a considerable portion of the sample also reported spending more than 4 hours (21.49%) on social media, which may have implications for their well-being and mental health[7].

This table's findings are consistent with studies that have examined social media usage patterns and provide valuable insights into the extent of social media use within the sample population. However, it is important to interpret these findings in the context of the specific study population and consider other factors such as age, gender, and the purpose of social media use[8][9]. Additionally, future studies could further explore the potential effects of different levels of social media use on mental health outcomes and subjective well-being, considering factors such as addictive behaviors, emotional well-being, and social connectedness [10][11].

Effects of Social media on various mental health indicators, including depression, anxiety, and subjective well-being, categorized by severity levels. The frequencies reported for each category provide insights into the prevalence and distribution of mental health indicators within the studied population. It is noteworthy that the highest frequency of depression is observed in the "Moderate severity" category, while the highest frequency of anxiety is observed in the "Not present" category. Additionally, subjective well-being appears to be highest in the "Moderate severity" category.

Although the frequencies displayed in Table 2 offer valuable information about the mental health indicators, it is important to interpret these findings in conjunction with existing research. Several studies have explored the association between these mental health indicators and social media use. For instance, previous research has demonstrated a positive correlation between excessive social media use and symptoms of depression and anxiety among young adults [12][13]. It is worth noting that the reported chi-square value (3.20) and p-value ( $>0.05$ ) indicate a lack of statistical significance in the association between mental health indicators and severity levels in this study. However, further investigation is necessary to fully comprehend the relationship between mental health indicators and severity levels, as additional factors may contribute to the observed results.

The study provides insights into the relationship between social media use frequency and duration. The table displays the frequencies of participants falling within different combinations of frequency (ranging from Low to Very High) and duration (Short or Long). Notably, higher

frequencies are observed for participants with Moderate Frequency and Low Frequency across both Short and Long durations.

To better understand the significance of the relationship between social media use frequency and duration, it is valuable to compare these findings with existing research.[14][15] Several studies have explored the impact of social media use on various aspects of mental health and well-being.[16] For example, research has indicated that higher social media use frequency and longer duration are associated with increased risk of negative mental health outcomes, such as symptoms of anxiety and depression[17][18]. However, the presented chi-square value (6.16) and p-value ( $>0.05$ ) suggest a statistically significant relationship between social media use frequency and duration in this study.

### **Conclusion:**

The analysis of the provided tables sheds light on the association between social media use and mental health indicators. The study reveals that a substantial portion of the participants spends significant amounts of time on social media, which aligns with previous studies emphasizing the widespread usage of these platforms. However, caution should be exercised regarding the potential negative impacts associated with excessive usage. It highlights the prevalence of mental health indicators, such as depression, anxiety, and subjective well-being, categorized by severity levels is also significant. Although the observed associations were not statistically significant in this study, it is important to consider the broader body of research on social media use and mental health outcomes. Lastly, Relationship between social media use frequency and duration, which may have implications for mental well-being.

Considering the findings from these tables, it is evident that social media use plays a role in mental health. However, the complex nature of this relationship necessitates further investigation, considering factors such as age, gender, and specific patterns of social media usage. Future research should adopt comprehensive methodologies and validated measures to better understand the mechanisms underlying the associations between social media use and mental health outcomes. It is also crucial to design interventions and guidelines that promote healthy social media use to mitigate potential negative effects and enhance well-being.

### **Limitations of Study:**

1. **Sample Size and Generalizability:** The study's sample size might be limited, potentially affecting the generalizability of the findings. The results may not be representative of the broader population, as they are based on a specific sample. Future studies with larger and more diverse samples are needed to enhance the external validity of the findings.
2. **Self-Reported Measures:** The study relies on self-reported measures for social media use and mental health indicators, which are subject to recall bias and social desirability bias. Participants may overestimate or underestimate their social media use or mental health symptoms, leading to inaccuracies in the data. The use of objective measures or multiple assessment methods could strengthen the validity of the results.
3. **Cross-Sectional Design:** The study's cross-sectional design limits the ability to establish causal relationships between social media use and mental health indicators. Longitudinal or experimental designs would be valuable in determining the temporal sequence and identifying any potential causal links between these variables.
4. **Measurement of Social Media Use:** The study might lack detailed information on specific social media platforms, content consumption, and engagement levels. Different

platforms and usage patterns may have varying effects on mental health. A more comprehensive assessment of social media use would provide a more nuanced understanding of its impact on mental health outcomes.

5. **Potential Bidirectional Relationships:** The study does not explore the bidirectional nature of the relationship between social media use and mental health indicators. It is possible that mental health issues contribute to increased social media use as a coping mechanism. Understanding the directionality of the relationship would provide a more comprehensive understanding of the dynamics involved.

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