

The Effect of Social Media on Anxiety and Stress

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ABSTRACT

This research paper investigates the relationship between social media usage, anxiety levels, and stress levels among young adults aged 18-25. The aim is to gain a comprehensive understanding of the potential impact of social media on anxiety and stress in this population. Data was collected through a survey administered to 132 participants, and statistical analyses were conducted to examine the associations between social media usage hours per day and anxiety and stress levels. The findings reveal that a significant proportion of young adults spend a substantial amount of time on social media, with a sizable percentage exceeding recommended usage limits. The results also indicate a positive correlation between social media usage and both anxiety and stress levels, suggesting that as individuals increase their engagement with social media, their reported anxiety and stress levels tend to be higher. These findings contribute to the existing literature on the psychological effects of social media and have implications for promoting mental well-being among young adults. The study underscores the importance of addressing social media usage and its potential impact on mental health in interventions and strategies to promote overall well-being in this population.

1. INTRODUCTION

The prevalence of social media in today's interconnected world has transformed how we communicate, connect, and consume information [1]. As individuals spend more time engaging with digital platforms and social media, concerns about their potential impact on mental well-being are raised. This research paper focuses on the effects of social media on anxiety and stress, aiming to deepen our understanding of how these virtual environments shape individuals' psychological states. Social media refers to online platforms that enable users to create, share, and interact with content, fostering virtual communities and communication networks [2]. Anxiety and stress are psychological states characterized by feelings of worry, tension,

and unease, which can significantly impact an individual's overall [3]. Understanding the relationship between social media use and anxiety/stress is of significant importance due to the pervasive integration of social media into our modern-day society. Specifically, in the context of the United Arab Emirates (UAE), the study holds particular relevance and can be linked to the UAE's Sustainable Development Goals (SDGs). In particular, it aligns with SDG 3: Good Health and Well-being [4]. Understanding the potential impact of social media on stress and anxiety is crucial for developing evidence-based interventions and policies to safeguard the mental well-being of individuals in the UAE. By examining the impact of social media use on anxiety and stress, the study contributes to SDG 3 by shedding light on factors that can influence anxiety and stress, creating a healthier and more resilient society.

The Social Cognitive Theory (SCT) is a relevant psychological framework that helps us understand the impact of social media on anxiety and stress. Social Cognitive Theory (SCT), formulated by Albert Bandura, is a theory that highlights the reciprocal and dynamic relationship between individuals (personal factors), their behavior, and their environments [5]. According to SCT, people's motivation and actions are influenced by their cognitive processes, such as their beliefs in their capabilities (self-efficacy) and expectations about the outcomes of their actions [6]. By considering this theory, we gain insights into how individuals' cognitive factors, like their confidence in handling social media and their beliefs about the consequences of its use, may impact their levels of anxiety and stress, expanding our understanding of the relationship between social media use and anxiety/stress. Previous research has also found significant evidence linking social media use to negative emotional states. For example, a study conducted by [22] found significant evidence suggesting that using a high number of social media platforms can affect depression, anxiety, and stress. Additionally, multiple studies have shown a strong link between heavy social media use and an increased risk for depression, anxiety, loneliness, self-harm, and even suicidal thoughts [7]. Studies have also shown that selective exposure to social media

content can reinforce existing beliefs and contribute to heightened anxiety and stress levels [8]. Additionally, research has explored how individuals seek gratification from social media use and how these gratifications can impact their well-being [9]. For example, excessive reliance on social media for social interaction may lead to social comparison and feelings of inadequacy, contributing to anxiety and stress.

2. PURPOSE OF THE STUDY

Research Question: To what extent does social media use correlate with stress and anxiety levels among young adults?

Null Hypothesis: There is no significant association between social media use, stress, and anxiety levels among young adults.

Alternative Hypothesis: There is a significant association between social media use, stress, and anxiety levels among young adults.

In this study, social media use serves as the independent variable, representing the frequency and extent of engagement with social media platforms among young adults. Stress and anxiety levels act as the dependent variables, reflecting the psychological states experienced by these individuals. The null hypothesis states that there is no significant association between social media use, stress, and anxiety levels among young adults. This means that any observed relationships between these variables are likely due to chance or random variation. On the other hand, the alternative hypothesis proposes that there is a significant association between social media use, stress, and anxiety levels among young adults. This suggests that social media use may have a meaningful impact on stress and anxiety levels in this population, indicating a non-random relationship between these variables.

Several studies support the alternative hypothesis, indicating a significant association between social media use stress and anxiety levels among young adults. Excessive social media use can lead to stress due to factors such as the pressure to present a perfect online image [10], the fear of missing out (FOMO) [11], cyberbullying, and constant exposure to negative news or content. This can have a direct impact on anxiety and stress levels, as individuals may experience heightened worry, fear, and psychological distress. Moreover, the social comparison phenomenon prevalent on social media can contribute to stress and anxiety [12]. Comparing oneself to others' seemingly perfect lives and accomplishments can lead to feelings of inadequacy and self-doubt. Additionally, the addictive nature of social media and the difficulty of disconnecting can further exacerbate stress and anxiety [13]. While the null hypothesis assumes no significant association, it is essential to note that the alternative hypothesis aligns with existing research and the potential mechanisms through which social media use stress impacts anxiety levels.

3. METHODOLOGY

The hypothesis was tested using a cross-sectional observational study design with survey methodology. The study aims to examine the relationship between the independent variable (excessive social media use) and the dependent variables (anxiety and stress levels) among the target population (young adults), where data is collected from participants without any intervention or manipulation of variables by the researcher to examine the associations between excessive social media use, anxiety, and stress among young adults.

Target Population

The study's choice to target young adults as the population for the survey is appropriate in the context of exploring the relationship between excessive social media use and anxiety/stress levels. Young adults aged 18-25, including college/university students, are known to be heavy users of social media platforms, and their unique circumstances make them particularly relevant for this study. By focusing on this specific population, the study can capture the distinct experiences and potential impacts of excessive social media use on the anxiety and stress levels of young adults. The findings would provide valuable insights for developing interventions and support programs to promote healthy social media habits and enhance the mental well-being of young adults.

Sampling

The sampling method employed in this study is a combination of random sampling and convenience sampling. Random sampling was used to randomly select individuals from the population of young adults, ensuring equal chances of inclusion. This approach helps to reduce bias and allows for the generalizability of the findings to the larger population. Within the random sample, the survey was spread across various social networks, utilizing convenience sampling to reach a larger sample size and improve accessibility. By utilizing the convenience and extensive reach of social networks, we increased the likelihood of obtaining a diverse and representative sample of young adults. The collected sample consisted of one hundred and thirty-two participants (n=132).

Instrument

The survey questionnaire was adapted to include items specifically related to social media use, anxiety, stress, and relevant confounding/control variables. The survey consists of a total of approximately 10 questions. It is estimated that completing the survey will take participants around 5 to 10 minutes. The survey is specifically designed to evaluate the association between excessive social media use, anxiety levels, and stress levels among young adults. The first part of the survey serves as both a demographic section and an explanation of the study to the participants, ensuring the acquisition of necessary ethical approvals and informed consent. This was facilitated through the inclusion of an Informed Consent form. Only individuals within the target population, specifically those aged 18-25, will be eligible to proceed with the survey. By implementing this demographic criterion, the study aims to focus exclusively on the experiences of young adults and exclude participants outside the designated age range. Participation in the study will be entirely voluntary, and individuals will be given the choice to decide whether they wish to participate in the research. Following this section, participants will proceed to the survey by responding to ten questions. The first three questions explored social media usage patterns, examining the frequency and intensity of social media use using the Bergen Social Media Addiction Scale (BSMAS), measured on a five-point Likert scale: 1-Never, 2-Rarely, 3-Sometimes, 4-Often, and 5-Always [14]. The fourth and fifth questions assessed anxiety levels using the Generalized Anxiety Disorder (GAD) scale, which is measured on a four-point Likert scale: 1-Not at all, 2-Several days, 3 -More than half the days, and 4-Nearly every day [15]). The sixth question examines stress levels using the Perceived Stress Scale (PSS), which is measured on a Likert scale ranging from 0 to 4: 0-Never, 1-Almost never, 2-Sometimes, 3-Fairly often, and 4-Very often[16]. . The remaining 4 questions focused on assessing overall life satisfaction, emotional well-being, and

perceived social support, which are important factors to consider when exploring the association between social media use and psychological outcomes. Question 7 used the Satisfaction with Life Scale (SWLS), rated on a seven-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree) [17]., providing insights into general well-being. Question 8 used the Positive and Negative Affect Schedule (PANAS), which measures an individual's experience of positive and negative emotions using a five-point Likert scale ranging from 1 (Very slightly or not at all) to 5 [18], allowing for an examination of emotional experiences and their potential connection to social media use. However, this scale was modified to fit our study better and be more convenient for the young adults taking the survey. Finally, the last two questions (questions 9 and 10) used the Multidimensional Scale of Perceived Social Support (MSPSS), rated on a seven-point Likert scale ranging from 1 (Very strongly disagree) to 7 (Very strongly agree) [19], which can help understand how social media interactions and relationships may influence stress and anxiety levels.

Procedure

The study followed ethical guidelines and obtained participants' necessary approvals and informed consent. Privacy and confidentiality of participants' responses were ensured throughout the research process. The study involved administering a survey to a selected sample of young adults, using established, valid, and reliable scales to measure social media use, stress, and anxiety levels. The collected data was thoroughly cleaned and coded for accuracy and consistency. Inferential statistical analyses, including correlation analysis, were conducted to examine the relationship between social media use and anxiety/stress levels among young adults while controlling for relevant confounding variables. The results were interpreted, considering statistical significance, effect sizes, and the direction of the relationship. The findings provided evidence of a significant association between social media use, stress, and anxiety levels among young adults. The implications of the findings were evaluated, highlighting the potential impact of interventions and support programs aimed at promoting positive mental well-being in this population.

4. RESULTS

This section presents the results of the study, which aimed to investigate the relationship between social media usage, anxiety levels, and stress levels among young adults. This section includes an analysis of data collected through a survey administered to participants, along with graphical representations in the form of bar graphs illustrating the associations between social media usage hours per day and anxiety levels, as well as stress levels. Furthermore, the correlation coefficient (*r*) was obtained to determine the strength and direction of the relationship between the variables under investigation. Additionally, a chi-square test was conducted to examine the relationship between social media usage and anxiety and stress levels. These statistical analyses and graphical representations contribute to a comprehensive understanding of the potential impact of social media usage on anxiety and stress among young adults.

Social Media Usage among young adults

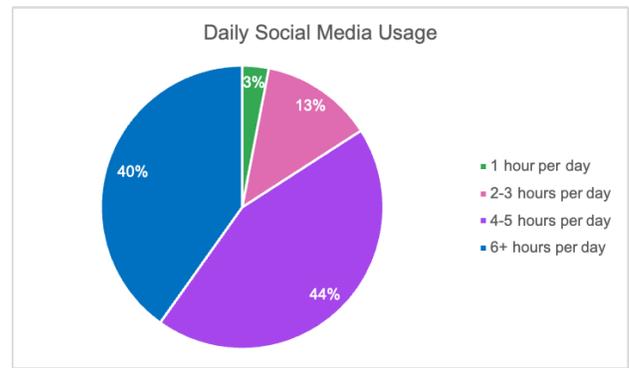


Figure 1. Distribution of Daily Social Media Usage among Young Adults - A pie chart illustrating the allocation of daily social media usage hours among the 132 participants.

Based on the results of the distribution of daily social media usage among 132 individuals, several key patterns emerge. The data reveals that only a small fraction, approximately 3%, of the participants spend 1 hour per day on social media. Around 13% fall into the category of using social media for 2 to 3 hours daily, while the most common usage category consists of 44% of the sample, indicating that they spend 4 to 5 hours on social media each day. Notably, a significant proportion of the participants, comprising 40% of the sample, use social media for more than 6 hours a day. These findings suggest that the majority (approximately 84%) of the participants use social media for more than 4 hours daily, with a considerable portion (40%) engaging with it for 6 hours or more. Overall, these results shed light on the nature of social media usage among young adults, indicating that a substantial number of individuals spend a significant amount of time on social media platforms, with a sizable percentage exceeding the recommended usage limits. This emphasizes the pervasive presence of social media in their lives, indicating a high level of engagement and reliance on these platforms.

Anxiety and Social Media

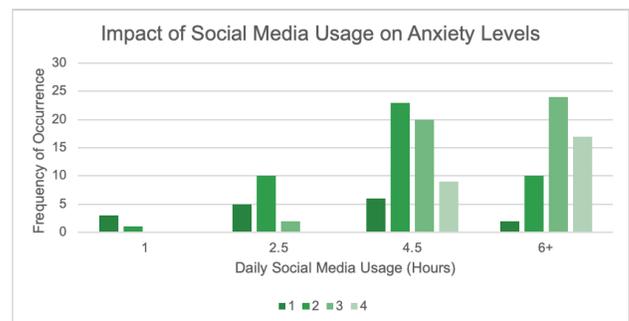


Figure 2. Frequency of Anxiety Levels across Different Social Media Usage categories

The bar graph in figure 2 visually depicts the relationship between social media usage time and reported anxiety levels based on the GAD-7 scale among the surveyed participants. The x-axis represents different categories of social media usage, including 1, 2.5 (2-3 hours), 4.5 (4-5 hours), and 6 (6+ hours) hours per day. The y-axis represents the frequency of occurrence measured by the number of responses. Each bar in the graph is color-coded to represent a specific anxiety level, ranging from 1

(Not at all), 2 (Several days), 3 (More than half the days), and 4 (Nearly every day). The height of each bar reflects the frequency of respondents falling into the specific combination of social media usage and anxiety level.

The graph provides a visual representation of the distribution of individuals across anxiety levels for each social media usage category. Upon analyzing the bar graph, a clear pattern emerges, showcasing that higher levels of anxiety are reported with increased social media usage. As social media usage time increases, the bars associated with higher anxiety levels become more prominent. Notably, participants reporting 1 hour of social media usage per day exhibit the lowest levels of anxiety across all four anxiety levels. As social media usage increases to 2-3 hours (2.5) and 4-5 hours (4.5), there is a noticeable rise in anxiety levels, while the highest anxiety levels are reported by participants who use social media for 6+ hours a day. Specifically, those who spend 4-5 hours or 6+ hours on social media report experiencing anxiety 'Nearly every day' (4). This observation highlights the possibility that spending more time on social media is associated with heightened anxiety levels.

Stress and Social Media

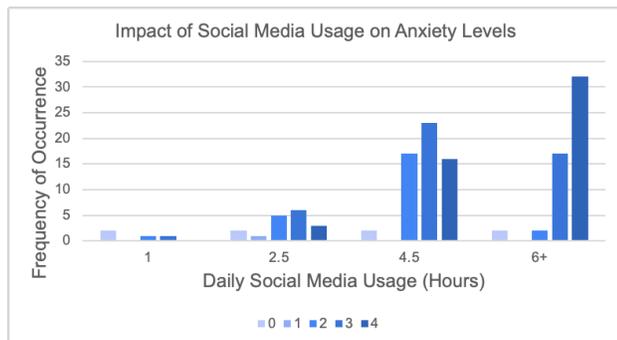


Figure 3. Frequency of Stress Levels across Different Social Media Usage Categories

The bar graph visually presents the relationship between social media usage and stress levels measured on a scale from 0 to 4 using the Perceived Stress Scale (PSS). The x-axis of the graph represents different categories of daily social media usage in hours, while the y-axis indicates the frequency or number of respondents falling into each stress level category. The bars in the graph correspond to combinations of stress levels (indicated by color) and social media usage.

The bar graph presented in Figure 3, provides insightful observations regarding the relationship between social media usage and stress levels. By analyzing the graph, we can discern significant patterns and trends. Notably, the bars representing individuals who spend 6+ hours on social media are the tallest, particularly for stress levels 3 and 4. This indicates a higher frequency of respondents in this group reporting elevated stress levels. On the other hand, lower stress levels (0 and 1) exhibit a substantially lower frequency across all categories of social media usage, especially as the number of hours spent on social media increases. These findings suggest a positive correlation between the time spent on social media and self-reported stress levels. As social media usage increases, there is a clear correlation with higher reported stress levels among respondents.

Descriptive Statistics and Correlation

Variable	Mean (M)	SD	N	Correlation with Daily Social Media Usage (r)
Daily social media usage	4.739	1.321	132	-
Anxiety level	2.606	0.931	132	0.505
Stress level	3.000	1.077	132	0.431

Table 1. Descriptive Statistics and Correlation Analysis Results

Table 1 presents the descriptive statistics, including the mean and standard deviation (SD), as well as the correlation coefficient (r), for the variables of daily social media usage, anxiety level, and stress level among young adults (n=132).

The study findings, as presented in Table 1, suggest that among the surveyed young adults, there was a moderate level of reported anxiety (mean = 2.606, SD = 0.931) and stress (mean = 3.000, SD = 1.077). These results indicate that on average, the participants experienced a moderate level of both anxiety and stress. In terms of social media usage, the findings from Table 1 reveal that young adults spent a significant amount of time on social media platforms, with an average daily usage of 4.739 hours (SD = 1.321). It is important to note that there was variability in anxiety, stress, and social media usage among the participants, as evidenced by the standard deviations.

The correlation coefficient (r) was found to determine the strength and direction of the relationship between the variables under investigation. The correlation coefficient (r) is a statistical measure used to determine the strength and direction of the relationship between variables [20]. It ranges from -1 to +1, where values close to -1 indicate a strong negative correlation, values close to +1 indicate a strong positive correlation and values close to 0 indicate a weak or no correlation. In our study, the correlation coefficient (r) between anxiety and social media usage was found to be 0.505, as depicted in Table 1. This indicates a moderate positive association between these variables. The positive sign suggests that as individuals spend more time on social media, their reported anxiety levels tend to be higher. Similarly, the correlation coefficient (r) between stress and social media usage was found to be 0.432, indicating a moderate positive association. This suggests that as individuals increase their social media usage, their reported stress levels tend to be higher. While the correlations are not extremely strong, they indicate noticeable relationships between social media usage and anxiety as well as stress levels among young adults. These findings imply that there is a connection between social media usage and both anxiety and stress levels.

Chi-square test

Relationship	Chi-square (χ^2)	Degrees of Freedom (df)	p-value
Anxiety Levels & Social Media	42.283	9.000	$p < 0.001$
Anxiety level	44.703	12.000	$p < 0.001$

Table 2. Results of Chi-Square Test

In addition to the correlation coefficients (r) that were calculated to examine the relationship between social media usage and anxiety and stress levels, further investigation was conducted using the chi-square test. The chi-square test was employed to assess the relationship between social media usage and anxiety levels, as well as stress levels. The chi-square test is a statistical method used to determine whether there is a significant association between two categorical variables [21]. The test compares the observed frequencies with the expected frequencies under the assumption of independence between the variables. The p-value represents the probability of obtaining the observed association or a more extreme association if the variables were truly independent. If the calculated p-value is below a predetermined significance level (e.g., 0.05), the null hypothesis of independence is rejected, indicating a significant association between the variables.

The results presented in Table 2 revealed a significant relationship between social media usage and both anxiety levels ($\chi^2 = 42.28299$, $df = 9$, $p = 0.0000029173$) and stress levels ($\chi^2 = 44.70272$, $df = 12$, $p = 0.00001158608$). For anxiety levels, it was found that as social media usage increased, there was a statistically significant increase in the frequency of higher anxiety levels reported by the respondents. Similarly, for stress levels, a significant association was observed, indicating that higher social media usage was associated with an increase in the frequency of elevated stress levels. These findings suggest that spending more time on social media may be linked to higher levels of anxiety and stress.

5. DISCUSSION

The findings of this study decisively reject the null hypothesis, which posited no significant association between social media use and levels of stress and anxiety among young adults. Instead, it moderately supports the alternative hypothesis, indicating a significant yet not excessively strong association between these variables. Previous research by [22] and [7] provided significant evidence linking social media use to anxiety and stress. Additionally, [23] conducted a study that found evidence supporting the alternative hypothesis. These studies collectively align with the alternative hypothesis, suggesting an association between social media use and levels of stress and anxiety.

In the current study, the findings from the graph in Figure 2, illustrating the distribution of individuals across anxiety levels for each social media usage category, support the alternative hypothesis. The graph shows that higher levels of anxiety are reported with increased social media usage, indicating a positive correlation. Similarly, the bar graph shown in Figure 3 depicts the relationship between social media usage and stress levels, revealing that as social media usage increases, stress levels also rise. These findings are further supported by research conducted by [24] and [8].

Furthermore, the moderate positive correlation coefficients of 0.505 for anxiety and 0.432 for stress provide quantitative support for the alternative hypothesis. Although these coefficients indicate a noteworthy relationship, they suggest a moderate rather than a strong link between social media usage, anxiety, and stress. The significance of these relationships is also supported by [22].

Lastly, the statistical strength of the Chi-Square test results, with significant p-values ($p < 0.0001$), reveals a significant relationship between social media usage and both anxiety and stress levels. This aligns with previous studies, such as [25], which suggest a positive association between social media usage and anxiety and stress levels.

Taken as a whole, the evidence gathered in this study provides a moderate level of support for the alternative hypothesis, suggesting that increased social media usage is linked to higher levels of anxiety and stress among young adults, while also highlighting the need for further research to explore these relationships more deeply. This finding contradicts the null hypothesis, which posits that there is no significant association between social media use and well-being, stress, and anxiety levels. The comprehensive analysis utilizing bar charts, chi-square tests, and correlation coefficients offers robust evidence supporting the alternative hypothesis and highlights the impact of social media usage on mental well-being.

6. CONCLUSION

In conclusion, this study provides evidence of a significant but moderate association between social media use and levels of stress and anxiety among young adults. The findings consistently demonstrate a positive correlation between increased social media usage and higher levels of anxiety and stress and align with previous research that has consistently demonstrated a link between social media use and increased stress and anxiety [25], [7], [26]. These results reject the null hypothesis and support the alternative hypothesis, indicating that spending more time on social media is moderately linked to elevated levels of anxiety and stress. The results emphasize the need for individuals, as well as parents, educators, and mental health professionals, to be mindful of the potential negative effects of excessive social media use on stress and anxiety. Further research should explore the underlying mechanisms and potential protective factors to better understand the impact of social media use on mental well-being. Overall, this study contributes to the growing awareness of the relationship between social media use and mental health, emphasizing the importance of promoting a balanced approach to social media consumption for young adults' overall well-being.

7. LIMITATIONS

While this study provides valuable insights into the relationship between social media use and mental health outcomes, it is important to consider its limitations. First, the study relied on a survey methodology, which is subject to self-report biases and potential inaccuracies in respondents' answers. This means that participants may not always provide completely accurate information about their social media use, anxiety levels, and stress levels. Secondly, the sample size of 132 participants may limit the generalizability of the findings to a larger population. With a relatively small sample size, it's possible that the results may not accurately represent the broader population.

Additionally, the assessment of anxiety levels and stress levels was based on a limited number of items from the GAD-7 and PSS scales, which may not capture the full complexity of anxiety and stress experiences. The study also didn't focus on specific genders, which may be a limitation because of the different chemical and hormonal makeups of males and females [27]. Lastly, the study did not entirely focus on the content of the social media users, focusing instead on social media usage more generally. This is an important aspect to consider because the content on social media platforms can have a significant impact on users' emotional experiences. Future research could address these limitations by employing larger sample sizes, more comprehensive assessment tools, and longitudinal designs to better understand the dynamic nature of the relationship between social media use and mental health outcomes.

9. RECOMMENDATIONS

If the study were to be repeated, several improvements could be considered: 1. Diverse Sampling: To enhance the generalizability of the findings, we could use a more extensive and diverse sample that includes participants from different age groups, genders, and cultural backgrounds. This would help to capture a broader range of perspectives and experiences. 2. Mixed Methods Approach: we could employ a mixed methods approach instead of relying solely on survey methodology. By combining quantitative survey data with qualitative interviews or focus groups, we can better understand the participants' experiences and perspectives on social media use and mental health. 3. Comprehensive Assessment Tools: To capture the complexity of anxiety and stress experiences more accurately, we can utilize a broader range of assessment tools beyond the limited number of items from the GAD-7 and PSS scales. This could include validated measures specific to social media use and mental health outcomes, such as the Social Media Disorder Scale or the Facebook Intensity Scale. 4. Gender Analysis: To address the potential influence of gender on the relationship between social media use and mental health, future research could specifically examine and compare the experiences of males and females. This could involve analyzing gender-specific patterns, exploring the role of gender norms, or considering the impact of different chemical and hormonal makeups on mental health outcomes. 5. Longitudinal Design: Employing a longitudinal design would allow us to study the relationship between social media use and mental health outcomes over an extended period. This helps establish temporal sequencing and better understand the dynamic nature of this relationship, addressing concerns about causality and potential bidirectional associations. 6. Control Variables: To enhance the robustness of the findings, we could include relevant control variables in the analysis. Factors such as socioeconomic status, prior mental health history, offline social support, and other potential confounding variables should be considered to isolate the specific impact of social media use on mental health outcomes. 7. Social media Platforms: Social media has various platforms, but the study did not directly specify which platform is causing mental health. However, different platforms include different interactions, features, and effects on users, which can impact one's mental health. Future studies should consider the effect of other platforms on user's mental health.

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