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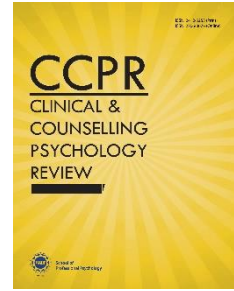
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Social Media Usage and Depressive Symptoms in University Students: A Correlation Study

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Abstract

Traditionally Depression is considered to be common among people, yet it is often unrecognized and unnoticed in the general population. The technological revolution has brought advancement in communication across the globe and has given rise to social media platforms. However, it has both positive and negative impacts on the life of individuals as indicated by many research studies. The present research study aimed to know the association between depression and social media usage among university students. The study was carried out with 130 university students (Men= 65; Women= 65) from two public sector universities. The study data was collected using a participant information form, Center for Epidemiologic Studies Depression (CES-D), and Social Networking Usage Questionnaire (SNUQ). The data was analyzed using SPSS. It was found that the use of social media was significantly associated with and predicted depressive symptoms among students. It was concluded that social media usage has a potential role in developing depression among students.

Keywords: depressive symptoms, social media, mental health

Introduction

Depression can be elaborated as the most commonly occurring and severe disorder of mood. It is responsible for causing severe symptoms usually affecting how a person thinks and feels along with handling activities of daily life including sleeping, working, or eating. Symptoms of depression include the following aspects depressed mood, loss of interest in every task, sleep pattern changes, disturbed appetite, irritability, anxious distress, fatigue, guilt, suicidal thoughts, hopelessness, and difficulty in decision making (American Psychiatric Association, [2022](#)).

The fifth edition of the *Diagnostic Statistical Manual of Mental Disorders (DSM-5)* describes depression as feelings of sadness on most

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days, decreased interest in everyday activities, considerable weight loss/gain, and sleeplessness. There is a substantial rise in depressive symptoms among young adults (Mojtabai et al., [2016](#)).

Depression is one of the significant causes of disability and, if left untreated, it can raise the chance of suicide (Remes et al., [2021](#)). According to the World Health Organization, depression is a major contributor towards impairment. Being a burdensome illness, it can have a detrimental influence on various aspects of an individual's life such as academics and job performance (World Health Organization [WHO], [2023](#)).

Depression seems to produce two-way relations with social media that affect the path of sickness and upkeep. With the approximate occurrence of 4.7% and 7.3% of depression and anxiety respectively across the worldwide population, these two have a significant impact on the quality of social relations and may determine the size and structure of an individual's social network. In the present era, the use of social networking sites (SNS) is one of the popular ways to communicate with and expand social networks, especially among youth. SNS have approximately 3 billion members globally, however, they have recently come under criticism for their adverse impacts on the lives of individuals. Previously, literature has been more focused on the time spent on social media, but not on its association with psychological issues such as depression which has only been focused on lately. A recent meta-analysis investigated the multidimensional characteristics of SNS usage; it demonstrated a weak association of the duration or intensity of social media usage and psychological disturbance i.e., depressive symptoms, but a moderate link to problematic SNS use (Cunningham et al., [2021](#)).

Research carried out in this area suggests that excessive use of social media is a kind of behavioral addiction that is characterized by a desire to use social media and devote a large period to social media that disturbs various activities of life (Hilliard, [2019](#)). In this context, problematic social media use (PSMU) entails a preoccupation and an excessive use of social media that affects mood and causes withdrawal symptoms (Bányai et al., [2017](#)). Delineating between screen time, frequency of use, or problematic use of media platforms is important in terms of the contributions to mental health (Cunningham et al., [2021](#)). Numerous studies have also reported an association between social media usage and

mental health (Escobar-Viera et al., [2018](#); Glazzard & Stones, [2019](#); Haand & Shu-Wang, [2020](#)) including depression (Hou et al., [2019](#); McCrae et al., [2017](#); Waqas et al., [2018](#)). Evidence suggests that instances of depression are directly associated with the use of social media particularly, rather than the total usage of electronic gadgets or screen time (Haidt & Allen, [2020](#)). Likewise, another study reported that social media usage has been associated with depressive and anxiety symptoms, as well as decreased joy and fulfilment in life (Karim et al., [2020](#)).

In addition to this, population-based studies have identified adolescents at a greater risk of getting influenced by the impacts of social media due to the extensive use of these platforms by this population (OFCOM, [2019](#)). Similar has been reported by McLaughlin and King ([2015](#)) who reported that the adolescence period is a high-risk phase for developing internalizing psychopathology, including major depressive disorders and symptoms. One reason behind the increased use of social media is that social media participation has become increasingly important as a method of acquiring social resources (Liu et al., [2019](#)). In the context of gender, recent evidence Kreski et al. ([2021](#)) suggests that women are less vulnerable to experiencing depressive symptomatology following an increase social media usage, however, for men varying findings exist.

Recent evidence on social media usage imparts that regular passive use of these platforms exacerbates social comparisons, which mostly result in poor subjective well-being, especially when social comparisons are upward (Verduyn et al., [2020](#)). Among youth, social media not only affects their mental well-being but also other facets of life including academics. For instance, Foroughi et al. ([2021](#)) reported an association between Instagram addiction and the need for socialization, recognition, and entertainment. In addition, Instagram addiction has been related to poor academic performance, increased social anxiety, and depression. Higher academic success, on the other hand, influenced life satisfaction favorably, but increased social anxiety and depression had a negative impact. Furthermore, physical activity weakened the association between Instagram addiction and socialization and entertainment needs. Similarly, Primack et al. ([2017](#)) while evaluating the relationship between the use of numerous social media platforms (e.g., Facebook, Instagram, & Twitter) and symptoms of depression and anxiety among young adults found that

individuals using multiple social media platforms have higher levels of self-reported depression and anxiety symptoms.

During the first year of the coronavirus pandemic, students were exposed to various stressors that increased their risk of mental health outcomes. Research carried out during this period has shown that adolescent and student populations who reported an increased engagement at social media platforms frequently experienced stress, anxiety, and depression (Draženović et al., [2023](#)). Serunkuuma et al. ([2023](#)) explored the link between the internet, social media, smartphone use, and depressive symptoms among Ugandan students during COVID-19. They reported approximately 17% of students experienced moderate to severe depressive symptoms, with high rates of social media addiction (about 74%) and smartphone usage (45.72%). Online activities and addiction predicted 8-10% of depression severity, whereas real stressors predicted the most depression (about 36%). Relationships and academic issues were connected to greater depression intensity. Another study (Aalbers et al., [2019](#)) with students reported that PSMU was associated with increased interest loss, attention issues, exhaustion, and loneliness. While fatigue and isolation predicted future PSMU, it did not predict depressive symptoms or stress over time. Although mean PSMU levels initially revealed a positive relationship with particular depressive symptoms, these correlations vanished after adjusting for all factors. Dhir et al. ([2018](#)) also reported that compulsive media use causes social media fatigue, which leads to increased depression and anxiety.

Contrary to this, evidence reporting an increased rate of memberships to SNS indicates possible values as well as disadvantages of using SNS that have impacts on the mental health of the individuals. For instance, excessive social media usage can be associated with depressive symptoms or leisure time activities (Wolf et al., [2018](#)). For example, Balt et al. ([2023](#)) while identifying the effects of social media on youth, described the two-fold role of social media platforms, i.e., providing peer support and recovery narratives as well as posing threats like cyberbullying and social comparison. Research suggests that, while it is too early to identify the extent to which SMU (social media use) may influence depressive outcomes. However, active use of social media has been observed to be beneficial and engaging in comparison to passive lurking. Furthermore, the impact of passive SMU when paired with activity in the same models

suggests that these SMU patterns are more interconnected than previously imagined. It may be beneficial to educate users on actively using social media platforms to avoid negative consequences such as feeling isolated, pressured, and marginalized (Escobar-Viera et al., [2018](#)).

The findings as mentioned above illustrate the complicated relationship between the use of social media/PSMU and depressive symptoms, emphasizing the need for more study to identify potential causative pathways.

Rationale of the Study

With the advent of the most recent technology and emerging trends in social media, various consequences of this advancement have been observed which are both positive and negative. In the context of mental health, more evidence suggests the negative impacts of social media on the mental health of individuals. Especially, on the student population. Previous studies were more commonly focused on frequency and duration of social media usage. Particularly, in the context of the Pakistani population, there exists a literature gap to address the impacts of social media usage on the mental health of the individuals which encourages research in this area. Therefore, the current research mainly focuses on the causal association between use of social media and the mental health of the students. The study specifically focused on depression which is commonly reported as evident from the studies mentioned above. The findings of this study would help address the use of various social media platforms used by students as a means of communication. In addition, it would help to cater to mental health concerns among students to enhance their academic performance.

Objective

1. To investigate the relationship between depressive symptoms and social media usage.
2. To explore the differences in the use of social media and depressive symptoms across genders.

Hypotheses

H1: Social media usage would be positively linked with depressive symptoms.

H2: There would be significant gender differences between social media usage and depressive symptoms.

Method

Current research was conducted to investigate the association between social media usage and depressive symptoms.

Study Design and Sample

The study followed a correlational research design. A sample of 130 university students was selected through purposive random sampling with an equal number of men and women.

Measures

The scales listed below were used to measure depressive symptoms and social network usage.

Centre for Epidemiological Studies Depression (CES-D)

Lenore Radloff developed the CES-D to assess depression (Radloff, [1977](#)). The CES-D scale is a brief self-report tool designed primarily to assess depression. It consists of 20 items out of which a number of 4 items tend to be reversed score these four items are encircled to be (4, 8, 12, & 16). The items are answered on four alternative responses: (1) *Rarely*; (2) *Some Days*; (3) *Occasionally*; and (4) *Most of the Time*. The scale score ranges between 0-60. A high score indicates greater depressive symptoms and vice versa. This scale has also demonstrated satisfactory psychometric properties (Radloff, [1977](#)).

Social Networking Usage Questionnaire (SNUQ)

The SNUQ by Gupta and Bashir ([2018](#)) was used to assess social media usage among students. It is a 19-items scale that is rated on a five-point Likert scale marked as 1 = *Never* – 5 = *Always*. This measure has also demonstrated an acceptable value of Cronbach's alpha = .77.

Procedure

First of all, the permissions to collect data from students were sorted from three public universities (University of Balochistan, Balochistan University of Information Technology, & Engineering and Management Sciences) in Quetta, Pakistan. The study participants were informed about their rights as research participants and their voluntary participation was

ensured by obtaining an informed consent. The data obtained using the assessment measures was subjected to further analysis using Statistical Package for Social Sciences (SPSS) V 23.

Results

The study results obtained by calculating frequency, percentages, correlation, regression, and *t*-test are given below. The Table 1 given below shows the characteristics of the study participants.

Table 1

Characteristics of Participants (N=130)

Characteristics	<i>f</i>	%
Age (Years)		
20-25	116	89
26-31	14	11
Gender		
Women	65	50
Men	65	50
Qualification		
Graduation	104	80
Masters	19	15
MPhil	2	1
Others	5	4

Table 2

Correlation between Social Media Usage and Depressive Symptoms (N=130)

Variable	1	2
1.Social Media Usage	-	.23**
2.Depressive Symptoms		-

Note. ** $p < .01$.

Table 2 shows a significant positive correlation between social media use and depressive symptoms.

Table 3

Regression Coefficient of Social Media Usage (N= 130)

Variable	<i>B</i>	<i>SE</i>	β	<i>F</i> (1,128)	<i>R</i> ²
Constant	23.48	4.30			
Social Media Usage	.17	.07	.23**	7.07**	.05

Note. ** $p < .01$.

Table 3 shows the findings of the linear regression analysis. These results demonstrate the predictive role of social media in developing depressive symptoms. The R^2 value of .05 indicated that the predictor variable represented 52% of the variation in the outcome variable that is depression.

Table 4

Gender Difference in Social Media Usage and Depressive Symptoms (N=130)

Variable	Women <i>n</i> = 65		Men <i>n</i> = 65		<i>t</i> (128)	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Social Media Usage	64.17	12.14	65.20	10.67	.514	.110	.090
Depressive Symptoms	33.75	8.27	35.71	9.00	1.288	.823	.227

Result of *t*-test (Table 4) carried out to explore gender differences illustrated no gender differences in social media use and depressive symptoms between men and women.

Discussion

The use of social media has a significant impact on the mental health of individuals (Schønning et al., 2020). The present study explored the association between social media usage and depressive symptoms among university students. The findings of the study suggested that the use of social media has a significant role in developing depression among students. According to the present results, there was a positive correlation between social media use and depressive symptoms. These findings are in accordance with the existing research. For instance, Lüthgen (2022) carried out research on smartphones and social media use in relation to depressive symptoms. According to his study, there was a significant association between depression and social media use.

In the present study, a predictive role of social media usage was observed in developing depressive symptoms which is in line with the previous study. For instance, Sserunkuuma et al. (2023) also reported that social networking was significantly contributing to depressive symptoms. Similarly, Gentzler et al. (2023)'s study with teens reported that increased social media usage was linked to higher depressive symptoms, notably on Instagram, TikTok, and YouTube. Notably, Twitter use was associated

with increased depressive symptoms in girls, demonstrating gender-moderating effects. This study also depicted extraversion as a protective trait because less or average extraverted teens, frequently involved in using Instagram, experienced more depressive symptoms compared to those with higher extroversion. Similarly, using TikTok was also associated with more depressive symptoms among teens who displayed negative reactions to social media in the past year. Ivie et al. (2020) also conducted similar research and their results suggested a small yet significant correlation between depressive symptoms and the use of social media. According to their study, individuals were considered to be at higher risk of experiencing depression when they use social media which suggests it is a primary factor causing depression.

Personality factors might influence how university students interact with social media, thereby affecting their chances of depression. Mu et al (2020) studied the relationship between neuroticism, addictive social media usage, psychological resilience, and depressive symptoms among students. They found that addictive social media usage reinforced the association between neuroticism and depressive symptoms, whereas psychological resilience moderated this association. In particular, individuals with low neuroticism who have poor resilience may still be prone to online social networking addiction, but strong resilience reduces addictive habits among these individuals. A study by Hawes et al. (2020) looked into the effects of social media usage on emotional well-being, with a specific emphasis on the role of appearance-related activities. The study reported social media usage was associated with depressive symptomatology, social anxiety, appearance anxiety, and appearance-rejection sensitivity. Notably, appearance-related concerns reinforced the relationship between media usage and appearance-rejection sensitivity. While gender disparities occur, with young women outperforming on all measures, there is no evidence that gender modifies the consequences of appearance-related social media obsession.

The present study observed no differences across genders, however, there exists varied data in the context of genders. Kong et al. (2022) while exploring the link between mobile social media use and depression in adolescents, focused on the mediatory role of psychological security and possible gender differences. They found a negative relationship between mobile social media use and depression, with psychological security

acting as a key mediator. Interestingly, gender disparities appear, for boys, a positive association was observed between mobile social media use and psychological stability. Furthermore, the relationship between psychological security and depression remained stronger for girls in comparison to boys. Kelly et al. (2018) who conducted research using population-based data from Cohort of UK Millennium concluded that girls were more susceptible to depressive symptoms following social media use. Similarly, Heffer et al. (2019) in their study reported that among undergraduate students, depression was not predicted by social media use which contradicts our present findings. However, among teens, girls reported more depressive symptoms following a frequent use of social media. In addition to this, Oberst et al. (2017) found that among women, depressive symptoms considerably predicted undesirable consequences of social networking site usage. This evidence suggests a varied presentation of gender differences in terms of social media usage and depressive symptoms.

Conclusion

The study reported an association between social media usage and depressive symptoms. It highlights social media as a potential contributor to depressive symptoms in the present era which is relying on networking and technology. In today's world, social media has become a necessary evil despite its adverse impacts on our lives. More prominently, students or adolescents are vulnerable to experiencing these impacts in this technology-focused era as they frequently use different social media. Individuals can be educated on the healthy use of social media to control its adverse impact on the mental well-being of individuals, especially the young population who is going to be the stakeholder of the technology.

Limitations and Future Implications

The findings of the present study provide insight to the adverse impact of social media use on the mental health of individuals. These findings encourage us to carry out more research in this area to understand the complexities of the connection and call for more nuanced interpretations of the impact of social media on mental health outcomes. Despite its valuable contribution to the indigenous Pakistani literature, the also has a few limitations. The present study findings are based on a smaller sample from two universities. Future research can be carried out with larger

samples from different universities and cities to enhance the generalizability of the findings.

References

- Aalbers, G., McNally, R. J., Heeren, A., de Wit, S., & Fried, E. I. (2019). Social media and depression symptoms: A network perspective. *Journal of Experimental Psychology: General*, *148*(8), 1454–1462. <https://doi.org/10.1037/xge0000528>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>
- Balt, E., Mérelle, S., Robinson, J., Popma, A., Creemers, D. H. M., Van Den Brand, I., Van Bergen, D., Rasing, S. P. A., Mulder, W., & Gilissen, R. (2023). Social media use of adolescents who died by suicide: Lessons from a psychological autopsy study. *Child and Adolescent Psychiatry and Mental Health*, *17*(1), Article e48. <https://doi.org/10.1186/s13034-023-00597-9>
- Bányai, F., Zsila, Á., Király, O., Maraz, A., Elekes, Z., Griffiths, M. D., Andreassen, C. S., & Demetrovics, Z. (2017). Problematic social media use: Results from a large-scale nationally representative adolescent sample. *PloS One*, *12*(1), Article e0169839. <https://doi.org/10.1371/journal.pone.0169839>
- Cunningham, S., Hudson, C. C., & Harkness, K. (2021). Social media and depression symptoms: A meta-analysis. *Research on Child and Adolescent Psychopathology*, *49*(2), 241–253. <https://doi.org/10.1007/s10802-020-00715-7>
- Dhir, A., Yossatorn, Y., Kaur, P., & Chen, S. (2018). Online social media fatigue and psychological wellbeing—A study of compulsive use, fear of missing out, fatigue, anxiety and depression. *International Journal of Information Management*, *40*, 141–152. <https://doi.org/10.1016/j.ijinfomgt.2018.01.012>
- Draženović, M., Vukušić Rukavina, T., & Machala Poplašen, L. (2023). Impact of social media use on mental health within adolescent and student populations during COVID-19 pandemic: Review. *International Journal of Environmental Research and Public Health*, *20*(4), Article e3392. <https://doi.org/10.3390/ijerph20043392>

- Escobar-Viera, C. G., Shensa, A., Bowman, N. D., Sidani, J. E., Knight, J. M., James, A. E., & Primack, B. A. (2018). Passive and active social media use and depressive symptoms among United States adults. *Cyberpsychology, Behavior, and Social Networking*, 21(7), 437–443. <https://doi.org/10.1089/cyber.2017.0668>
- Foroughi, B., Griffiths, M. D., Iranmanesh, M., & Salamzadeh, Y. (2021). Associations between Instagram addiction, academic performance, social anxiety, depression, and life satisfaction among university students. *International Journal of Mental Health and Addiction*, 20(4), 2221–2242. <https://doi.org/10.1007/s11469-021-00510-5>
- Gentzler, A. L., Hughes, J. L., Johnston, M., & Alderson, J. E. (2023). Which social media platforms matter and for whom? Examining moderators of links between adolescents' social media use and depressive symptoms. *Journal of Adolescence*, 95(8), 1725–1748. <https://doi.org/10.1002/jad.12243>
- Glazzard, J., & Stones, S. (Eds.) (2019). *Technology and child mental health*. Intech Open. <https://doi.org/10.5772/intechopen.88569>
- Gupta, S., & Bashir, L. (2018). Social Networking Usage Questionnaire: Development and validation in an Indian higher education context. *The Turkish Online Journal of Distance Education*, 19(4), 214–227. <https://doi.org/10.17718/tojde.471918>
- Haand, R., & Shu-Wang, Z. (2020). The relationship between social media addiction and depression: a quantitative study among university students in Khost, Afghanistan. *International Journal of Adolescence and Youth*, 25(1), 780–786. <https://doi.org/10.1080/02673843.2020.1741407>
- Haidt, J., & Allen, N. (2020). Scrutinizing the effects of digital technology on mental health. *Nature*, 578(7794), 226–227. <https://doi.org/10.1038/d41586-020-00296-x>
- Hawes, T., Zimmer-Gembeck, M. J., & Campbell, S. M. (2020). Unique associations of social media use and online appearance preoccupation with depression, anxiety, and appearance rejection sensitivity. *Body Image*, 33, 66–76. <https://doi.org/10.1016/j.bodyim.2020.02.010>
- Heffer, T., Good, M., Daly, O., MacDonell, E. T., & Willoughby, T. (2019). The longitudinal association between social-media use and

- depressive symptoms among adolescents and young adults: An empirical reply to Twenge et al. (2018). *Clinical Psychological Science*, 7(3), 462–470. <https://doi.org/10.1177/2167702618812727>
- Hilliard, J. (2019). *Social media addiction*. Addiction Centre. <https://www.addictioncentre.com/drugs/social-media-addiction/>
- Hou, Y., Xiong, D., Jiang, T., Song, L., & Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology Journal of Psychosocial Research on Cyberspace*, 13(1), Article e4. <https://doi.org/10.5817/cp2019-1-4>
- Ivie, E. J., Pettitt, A., Moses, L. J., & Allen, N. B. (2020). A meta-analysis of the association between adolescent social media use and depressive symptoms. *Journal of Affective Disorders*, 275, 165–174. <https://doi.org/10.1016/j.jad.2020.06.014>
- Karim, F., Oyewande, A. A., Abdalla, L. F., Chaudhry Ehsanullah, R., & Khan, S. (2020). Social media use and its connection to mental health: A systematic review. *Cureus*, 12(6), Article e8627. <https://doi.org/10.7759/cureus.8627>
- Kelly, Y., Zilanawala, A., Booker, C., & Sacker, A. (2018). Social media use and adolescent mental health: Findings from the UK millennium cohort study. *eClinicalMedicine*, 6, 59–68. <https://doi.org/10.1016/j.eclinm.2018.12.005>
- Kong, F., Deng, H., Meng, S., & Ge, Y. (2022). How does mobile social media use associate with adolescents' depression? The mediating role of psychological security and its gender difference. *Current Psychology*, 42, 16548–16559. <https://doi.org/10.1007/s12144-022-03880-8>
- Kreski, N., Platt, J., Rutherford, C., Olfson, M., Odgers, C., Schulenberg, J., & Keyes, K. M. (2021). Social media use and depressive symptoms among United States adolescents. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 68(3), 572–579. <https://doi.org/10.1016/j.jadohealth.2020.07.006>
- Liu, J., Rozelle, S., Xu, Q., Yu, N., & Zhou, T. (2019). Social Engagement and Elderly Health in China: Evidence from the China Health and Retirement Longitudinal Survey (CHARLS). *International Journal of*

Environmental Research and Public Health, 16(2), Article e278.
<https://doi.org/10.3390/ijerph16020278>

- Lüthgen, J. H. (2022). *Investigating the relationship of screen time and depressive symptoms and moderation by loneliness in young adults* [Bachelor's thesis, University of Twente]. University of Twente Student Theses. <https://essay.utwente.nl/89385/>
- McCrae, N., Gettings, S., & Pursell, E. (2017). Social media and depressive symptoms in childhood and adolescence: A systematic review. *Adolescent Research Review*, 2, 315–330. <https://doi.org/10.1007/s40894-017-0053-4>
- McLaughlin, K. A., & King, K. (2015). Developmental trajectories of anxiety and depression in early adolescence. *Journal of Abnormal Child Psychology*, 43(2), 311–323. <https://doi.org/10.1007%2Fs10802-014-9898-1>
- Mojtabai, R., Olfson, M., & Han, B. (2016). National trends in the prevalence and treatment of depression in adolescents and young adults. *Pediatrics*, 138(6), Article e20161878. <https://doi.org/10.1542/peds.2016-1878>
- Mu, W., Zhu, D., Wang, Y., Li, F., Ye, L., Wang, K., & Zhou, M. (2020). Three-wave longitudinal survey on the relationship between neuroticism and depressive symptoms of first-year college students: Addictive use of social media as a moderated mediator. *International Journal of Environmental Research and Public Health*, 17(17), Article e6074. <https://doi.org/10.3390/ijerph17176074>
- OFCOM. (2019, February 4). *Children and parents: Media Use and Attitudes Report 2019*.
- Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of Adolescence*, 55, 51–60. <https://doi.org/10.1016/j.adolescence.2016.12.008>
- Primack, B. A., Shensa, A., Escobar-Viera, C. G., Barrett, E. L., Sidani, J. E., Colditz, J. B., & James, A. E. (2017). Use of multiple social media platforms and symptoms of depression and anxiety: A nationally-representative study among U.S. Young adults. *Computers in Human Behavior*, 69, 1–9. <https://doi.org/10.1016/j.chb.2016.11.013>

- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385–401. <https://doi.org/10.1177/014662167700100306>
- Remes, O., Mendes, J. F., & Templeton, P. (2021). Biological, psychological, and social determinants of depression: A review of recent literature. *Brain Sciences, 11*(12), Article e1633. <https://doi.org/10.3390/brainsci11121633>
- Schønning, V., Hjetland, G. J., Aarø, L. E., & Skogen, J. C. (2020). Social media use and mental health and well-being among adolescents - A scoping review. *Frontiers in Psychology, 11*, Article e1949. <https://doi.org/10.3389/fpsyg.2020.01949>
- Sserunkuuma, J., Kaggwa, M. M., Muwanguzi, M., Najjuka, S. M., Murungi, N., Kajjimu, J., Mulungi, J., Kihumuro, R. B., Mamun, M. A., Griffiths, M. D., & Ashaba, S. (2023). Problematic use of the internet, smartphones, and social media among medical students and relationship with depression: An exploratory study. *PLoS ONE, 18*(5), e0286424. <https://doi.org/10.1371/journal.pone.0286424>
- Verduyn, P., Gugushvili, N., Massar, K., Täht, K., & Kross, E. (2020). Social comparison on social networking sites. *Current Opinion in Psychology, 36*, 32–37. <https://doi.org/10.1016/j.copsyc.2020.04.002>
- Waqas, A., Khurshid, Z., Ali, M., & Khaliq, H. (2018). Association between usage of social media and depression among young adults. *Journal of Management Info, 5*(4), 26–30. <http://dx.doi.org/10.31580/jmi.v5i4.115>
- World Health Organization. (2023, March 31). *Depressive disorder (depression)*. <https://www.who.int/news-room/fact-sheets/detail/depression>
- Wolf, M., Sims, J., & Yang, H. (2018). Social Media? What Social Media? In *UK Academy for Information Systems Conference Proceedings 2018*. Association for Information Systems Electronic Library (AISel) <https://aisel.aisnet.org/ukais2018/3>