

Correlation of Anxiety & Depression Among Medical Students with the Use of Social Networking Sites**Sopan Sardesai¹, Vaibhav Chaturvedi², Aditya Shrivastava³, Suvaran Sagar Bajpai⁴**^{1,2} Assistant Professor, Department of Psychiatry, Index Medical College, Indore³PG Resident, Department of Psychiatry, Index Medical College, Indore⁴Senior Resident, Department of Psychiatry, Index Medical College, Indore**Received: 14-06-2023 Revised: 22-07-2023 / Accepted: 30-08-2023****Corresponding author: Dr Aditya Shrivastava****Conflict of interest: Nil****Abstract**

Introduction: Social networking sites (SNS) can be defined as “a group of Internet-based applications that allow the creation and exchange of user-generated content.” In past decade, there is a rapid development of social networking. It has a huge effect on the way people interact with each other. In research conducted in 2015, adolescents are avid users of social networking sites, with approximately 71% of them using more than one online site, and Facebook was the most (41%) widely used SNS. SNSs are used for academic purposes. On the other hand, the unrestricted use of online SNS can cause internet addiction and dependence, sleep disorders, and depression.

Aims & Objectives: (1) To determine the prevalence of anxiety in students. (2) To determine the prevalence of depression in students. (3) To determine the pattern of use of social networking sites among students.

Material and Methods: A cross-sectional study was done among the medical students who enrolled in the college from 2017 to 2021 sessions in a medical college in Indore during the period of May–July 2022. The study tool used in the study is: 1. Becks Anxiety Inventory (BAI) 2 Becks Depression Inventory (BDI) 3 Structured Questionnaire.

Results: The final analysis was performed with a filled-in questionnaire of 1000 medical students enrolled in college. More than half of the students were aged 17–25. Around half of students (51.7%) used SNS at least once an hour, while 37% used it at least four hours a day. Around 83.4% of the students accessed SNSs for at least 4 hours a day, and 52.0% of the students remained available on SNSs all day. About one-third of study participants (41.0%) often used SNS in the early morning or went to bed late at night to spend time in them, and another 42.6% did it sometimes. 68% of students were either not sure or expressed their inability to spend a day without SNSs. Two-fifths of the study participants had mild-to-moderate depression, and another 3.0% had severe depression. 63.0% had mild to moderate anxiety, and 8.8% had severe anxiety at the time of assessment.

Keywords: Anxiety, Depression, Medical Students, Facebook, Instagram

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

Social networking sites (SNS) can be defined as “a group of Internet-based applications that allow the creation and exchange of user-generated content.”

[1] In the past decade, there has been a rapid development of social networking. It has a huge effect on the way people interact with each other. In research conducted in 2015, adolescents are avid users of social networking sites, with approximately 71% of them using more than one online site, and Facebook was the most (41%) widely used SNS. [2] The importance of these social networking sites in our daily lives can be understood from the fact that Facebook has more than one billion active users. [3] SNSs are used for academic purposes. On the other

hand, the unrestricted use of online SNS can cause internet addiction and dependence, sleep disorders, and depression. [4] Recent research showed a correlation between online social networking sites and mental health. [3] As the usage of SNS is increasing among today’s young generation, psychiatric conditions associated with it lead to a cyber-epidemic. Important point in this is that majority of the users neither realize nor accept the negative impact of it on their lives as they are already addicted to it.[5]

A recent meta-analysis suggests that 75% of medical students were regularly using SNS including the

compulsive/compensatory use of social networking and India is no exception to that.[7-9] The level of the stress among medical students is much higher and it affects the lives of the medical students, their academic performance, physical health as well as their psychological well-being.[10] Due to this stress, depression and anxiety are increasing in medical students.[11-13] This study was done to correlate the use of SNSs and the prevalence of anxiety and depression in medical students in a Medical College in Indore.

AIMS & OBJECTIVES:

- To determine the prevalence of anxiety in students.
- To determine the prevalence of depression in students.
- To determine the pattern of use of social networking sites among students.

Material and Methods:

A cross-sectional study was done among the medical students who enrolled in the college from 2017 to 2021 sessions in a medical college in Indore with a capacity of 250 students per year during the period of May–July 2022. The final sample size was 500. As the number of enrolled students is similar in each batch (year group), 100 students from each batch were selected through simple random sampling from the list of students as per the attendance register. Medical students with a history of psychiatric disorders were excluded from the study. The study tool used in the study is: 1. Becks Anxiety Inventory (BAI) 2 Becks Depression Inventory (BDI) 3 A structured questionnaire with written informed consent was obtained. The structured questionnaire in English for sociodemographic characteristics was distributed among the selected students. The type of social networking site and pattern of use were assessed, along with screening for depression and anxiety.

Results:

The final analysis was performed with a filled-in questionnaire of 1000 medical students enrolled in college. More than half of the students were aged 17–25 years, while the mean age of the sample was 22.1 years. There was an almost equal representation of male (53.0%) and female students (47.0%). All the study participants used social networking sites, and among them, only 6.0% used one SNS. 41.5% of students used two SNSs, while around 52.5% used three or more SNSs. “WhatsApp” was the most preferred SNS (100%), followed by “Facebook” (93.3%) and “Instagram” (40.5%). Entertainment was the most common (88.0%) reason for using social networking sites, followed by communication with friends and families (52.9%) and educational activities (41.0%).

Around half of students (51.7%) used SNS at least once an hour, while 37% used it at least four hours a day. Almost one-tenth of students (9.3%) used SNSs 1–3 times a day; the rest were occasional users. Around 83.4% of the students accessed SNSs for at least 4 hours a day, and 52.0% of the students remained available on SNSs all day. About one-third of study participants (41.0%) often used SNS in the early morning or went to bed late at night to spend time in them, and another 42.6% did it sometimes. 68% of students were either not sure or expressed their inability to spend a day without SNSs. Another 17.7% reported that they could spend a day without SNSs at some particular times. As per the score obtained in Beck’s Depression Inventory (BDI), two-fifths of the study participants had mild-to-moderate depression, and another 3.0% had severe depression. According to the score obtained in Beck’s Anxiety Inventory (BAI), 63.0% had mild to moderate anxiety, and 8.8% had severe anxiety at the time of assessment.

Discussion:

The development and wellbeing of young people are affected in positive as well as adverse ways due to the increased usage of communication facilities on social networking sites [15]. Because of the emerging use of social networking sites, face-to-screen interaction is more than face-to-face interaction. The use of social networking sites was universal among the medical students in the present study, with about half of them using three or more social media sites. Among the different social networking sites, WhatsApp is the most popular, followed by Facebook, with the majority of the participants using these, validating earlier research in India. [4] Although the percentages of participants using Facebook and WhatsApp were found to be higher than some previous research, [2, 16] the data similar to this study has been stated among adolescents in the US, [17] medical students in India, Australia, and the UK. [8, 18, 19]

In a systematic study, 16 papers were chosen, and anxiety and depression were the most frequently measured outcomes. The prominent risk factors for anxiety and depression emerging from this study comprised time spent, activity, and addiction to social media. Some teens experience anxiety from social media related to fear of missing out, which causes them to try to respond and check all their friends' messages on a regular basis. On the other hand, depression is one of the unintended consequences of unwarranted use of social media. In a study, individuals who are indulged in social media, games, texts, mobile phones, etc. are more likely to suffer from depression. [36] This study showed that the medical students were keen users of social networking sites, with around half of the students accessing social networking sites at least once an hour. Duration-wise, around 83.4% of students reported using SNSs for > 4 hours, while

half of the participants remained logged in throughout the whole day. This suggests substantial and frequent use among the participants, which is comparable to the study conducted by Goel et al. and Hall et al. [8, 20].

One of the important findings was that 41% of the participants reported often early morning usage or went to bed late night to spend more time on social networking sites. Another 42% did it for sometimes, creating around 83% odd time users in this study, which is higher than findings from Madaiah et al. [4]. Although the described quantity of participants who stated their helplessness to spend a day without social networking sites in the mentioned study was almost similar to that of this study, around two-fifth of participants reported positive for depression in the present study, which is similar to the study done by Kulsoom et al., which showed a high prevalence of depression (43%) among the participants. The prevalence of moderate anxiety levels was observed, similar to the earlier studies [11, 12]. In this study, the depression and anxiety scores were found to be higher in students who use social networking sites frequently and for a longer duration. This finding is corroborative to the numerous previous literature.[23,29-31] Neira et al. also reported a noteworthy correlation between regularity of social network usage and depression.[32] Kross et al. demonstrated that increased usage of social networking sites exposes the adolescents to negative affect and reduced their sense of well-being.[22] Study participants who reported depressive mood were more likely to use social media to express their feelings.[33] The prominent risk factors related to social media for depression and anxiety were frequent social comparison, perceived negative interaction, addictive/ problematic use and rumination.[35]

We also found in the present study that students, who reported to use SNSs in odd hours were more likely to have higher score in BDI and BAI scales than the participants who did not use in odd hours. Students who stated that they could spend a day without using any social networking sites were prone to a lesser extent to depression and anxiety than the students who showed uneasiness and difficulties in doing that. Conclusion: This study exposed that use of social networking sites is common among participants, and the majority of them were avid users of social networking sites. A substantial proportion of medical students have a huge attraction towards social networking sites. Heavy use of social networking sites, including those in odd hours, was found to be significantly linked with depression and anxiety. The problem is significant enough for suitable intervention.

References

1. Kaplan AM, Haenlein M. Users of the world, unite! The challenges and opportunities of social media. *Bus Horiz* 2010;53:59-68.
2. Lenhart A, Duggan M, Perrin A, Stepler R, Rainie H, Parker K. *Teens, social media and Technology Overview 2015*. Washington DC, USA: Pew Research Center [Internet and American Life Project]; 2015.
3. Pantic I. Online social networking and mental health. *Cyberpsychol Behav Soc Netw* 2014;17:652-7.
4. Madaiah M, Seshaiyenger CT, Suresh P, Munipapanna S, Sonappa SD. Study to assess the effects of social networking sites on medical college students. *Int J Community Med Public Health* 2016;3:1204-8.
5. Farooqi H, Patel H, Aslam HM, Ansari IQ, Khan M, Iqbal N, *et al*. Effect of facebook on the life of medical university students. *Int Arch Med* 2013;6:40.
6. Hendrix D, Chiarella D, Hasman L, Murphy S, Zafron ML. Use of facebook in academic health sciences libraries. *J Med Libr Assoc* 2009;97:44-7
7. Guraya SY. The usage of social networking sites by medical students for educational purposes: A Meta-analysis and systematic review. *N Am J Med Sci* 2016;8:268-78.
8. Goel D, Subramanyam A, Kamath R. A study on the prevalence of internet addiction and its association with psychopathology in Indian adolescents. *Indian J Psychiatry* 2013;55:140-3.
9. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates. *Indian J Med Res* 2015;141:354-7.
10. Sidana S, Kishore J, Ghosh V, Gulati D, Jiloha R, Anand T, *et al*. Prevalence of depression in students of a medical college in New Delhi: A cross-sectional study. *Australas Med J* 2012;5:247-50.
11. Kulsoom B, Afsar NA. Stress, anxiety, and depression among medical students in a multiethnic setting. *Neuropsychiatr Dis Treat* 2015;11:1713-22.
12. Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, Esa AR, *et al*. Prevalence and associated factors of stress, anxiety and depression among prospective medical students. *Asian J Psychiatr* 2013;6:128-33.
13. Griffiths MD. Facebook addiction: Concerns, criticism, and recommendations – A response to andreassen and colleagues. *Psychol Rep* 2012;110:518-20.
14. Bechtel W. Circadian rhythms and mood disorders: Are the phenomena and mechanisms causally related? *Front Psychiatry* 2015;6:118.
15. McCrae N, Getting S, Pursell E. social media and depressive symptoms in childhood and

- adolescence: A systematic review. *Adolesc Res Rev* 2017;2:315-30.
16. Adithya KH, Ali K, Mahadevamurthy M. Use of social media Among Dental Students of Farooqia Dental College, Mysore: A Study. Bangalore, India; 2013. Presented at International Conference on open access scholarly communication reincarnated: A futuristic approach at Bangalore. Available from: <https://researchgate.net/publication/256527414>. [Last accessed on 2018 Feb 27].
 17. Statista: The Statistical Portal. Reach of Leading social media and Networking Sites Used by Teenagers and Young Adults in the United States as of February, 2016; 2016. Available from: <https://www.statista.com/statistics/250172/>. [Last accessed on 2017 Feb 27].
 18. Gray K, Annabell L, Kennedy G. Medical students' use of facebook to support learning: Insights from four case studies. *Med Teach* 2010;32:971-6.
 19. White J, Kirwan P, Lai K, Walton J, Ross S. 'Have you seen what is on facebook?' The use of social networking software by healthcare professions students. *BMJ Open* 2013;3. pii: e003013.
 20. Hall M, Hanna LA, Huey G. Use and views on social networking sites of pharmacy students in the United Kingdom. *Am J Pharm Educ* 2013;77:9.
 21. Kraut R, Kiesler S, Boneva B, Cummings J, Hegleson V, Crawford A. Internet paradox revisited. *J Soc Issues* 2002;58:49-74.
 22. Kross E, Verduyn P, Demiralp E, Park J, Lee DS, Lin N, *et al*. Facebook use predicts declines in subjective well-being in young adults. *PLoS One* 2013;8:e69841.
 23. Marroquín B. Interpersonal emotion regulation as a mechanism of social support in depression. *Clin Psychol Rev* 2011;31:1276-90.
 24. Keyes CL. Mental illness and/or mental health? Investigating axioms of the complete state model of health. *J Consult Clin Psychol* 2005;73:539-48.
 25. Rosenquist JN, Fowler JH, Christakis NA. Social network determinants of depression. *Mol Psychiatry* 2011;16:273-81.
 26. Hirschfeld RM. The comorbidity of major depression and anxiety disorders: Recognition and management in primary care. *Prim Care Companion J Clin Psychiatry* 2001;3:244-54.
 27. Schaefer DR, Kormienko O, Fox AM. Misery does not love company: Network selection mechanisms and depression in homophily. *Am Sociol Rev* 2011;76:764-85.
 28. Cornwell EY, Waite LJ. Social disconnectedness, perceived isolation, and health among older adults. *J Health Soc Behav* 2009;50:31-48.
 29. Baxter AJ, Scott KM, Vos T, Whiteford HA. Global prevalence of anxiety disorders: A systematic review and meta-regression. *Psychol Med* 2013;43:897-910.
 30. Ferrari AJ, Somerville AJ, Baxter AJ, Norman R, Patten SB, Vos T, *et al*. Global variation in the prevalence and incidence of major depressive disorder: A systematic review of the epidemiological literature. *Psychol Med* 2013;43:471-81.
 31. Steger MF, Kashdan TB. Depression and everyday social activity, belonging, and well-being. *J Couns Psychol* 2009;56:289-300.
 32. Neira CJ, Barber BL. Social networking site use: Linked to adolescents' social self-concept, self-esteem, and depressed mood. *Aust J Psychol* 2014;66:56-64.
 33. Hwang JM, Cheong PH, Feeley TH. Being young and feeling blue in Taiwan: Examining adolescent depressive mood and online and offline activities. *New Media Soc* 2009;11:1101-21.
 34. Ybarra ML, Alexander C, Mitchell KJ. Depressive symptomatology, youth internet use, and online interactions: A national survey. *J Adolesc Health* 2005;36:9-18.
 35. Jawaid M, Khan MH, Bhutto SN. Social network utilization (Facebook) and e-professionalism among medical students. *Pak J Med Sci* 2015;31:209-13.
 36. Karim F, Oyewande A A, Abdalla L F, *et al*. (June 15, 2020) Social Media Use and Its Connection to Mental Health: A Systematic Review. *Cureus* 12(6): e8627.