

Original Research Article

Prevalence and determinants of social media addiction and social anxiety among medical undergraduates: a cross-sectional study from Dakshina Kannada

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ABSTRACT

Background: Social media is an important part of communication among young adults, but excessive use may be associated with poor mental health outcomes, including social anxiety. This study assessed the burden of social media addiction and social anxiety among undergraduate medical students and examined their association with selected demographic factors.

Methods: A cross-sectional study was conducted among 261 undergraduate medical students aged 17 years and above using convenience sampling. Data were collected using a pre-tested questionnaire that included a Social Media addiction scale and a social anxiety scale. Descriptive statistics, chi-square tests and logistic regression were used for analysis.

Results: High social media addiction was observed in 48.3% of participants, while 6.5% had very high addiction. Severe social anxiety was reported by 37.9% and extreme social anxiety by 31.0%. Age was not significantly associated with either social media addiction or social anxiety. Gender was significantly associated with social anxiety, with males showing higher odds of severe or extreme anxiety (odds ratio 4.636; 95% confidence interval 1.680–12.794).

Conclusions: The study shows a substantial burden of social media addiction and social anxiety among medical undergraduates. Early screening, digital well-being initiatives and gender-sensitive mental health support may help address these concerns.

Keywords: Digital behaviour, Medical undergraduates, Mental health, Social media addiction, Social anxiety

INTRODUCTION

Social media platforms have transformed how people communicate, share information and build relationships, particularly among young people.^{1,2} Global digital reports have documented the widespread growth and use of social media platforms.³ Although social media use can support communication and interaction, problematic or excessive use has been associated with poorer

psychological well-being, including symptoms of anxiety, depression and psychological distress.^{4,6,7} Social media addiction has also been examined in relation to mood-related outcomes, while social networking addiction has been described as an addictive behavioural pattern.^{5,8} Online social networking has been linked with depression, while social comparison may influence self-esteem among social media users.^{9,10} Fear of missing out has also been identified as a motivational, emotional and

behavioural correlate of social media engagement.¹¹ Problematic Internet use models emphasise difficulties with self-regulation and control of online behaviour.¹² Social media use has also been studied in relation to self-esteem and systematic review evidence has examined social media addiction among university students.^{13,14} Addictive use of social media has further been examined in relation to narcissism and self-esteem.¹⁵

Social anxiety refers to fear or avoidance of social situations because of concern about negative evaluation. Gender differences in social anxiety disorder have been examined in previous literature.¹⁶ Problematic smartphone use has also been reviewed in relation to anxiety and depression psychopathology.¹⁷ Cultural factors are relevant to the understanding and expression of social anxiety and social anxiety disorder.¹⁸ Social networking sites have been discussed in relation to addictive use and associated behavioural patterns.¹⁹ Social anxiety disorder is characterised by fear and avoidance of social situations and can have important consequences for social functioning.²⁰ Social media use has also been associated with perceived social isolation among young adults.²¹ Gender differences have been reported across anxiety disorders in relation to prevalence, course and burden.²²

Medical students are a particularly important group to study because of academic stress, long study hours and frequent digital engagement. Understanding the relationship between social media addiction and social anxiety in this population may help identify students who could benefit from early support and counselling. This study was therefore undertaken to estimate the prevalence of social media addiction and social anxiety and to examine their association among medical undergraduates in Dakshina Kannada.

Objective

To estimate the prevalence of social media addiction and social anxiety and to examine their association among medical undergraduates in Dakshina Kannada.

METHODS

Study design and setting

A cross-sectional study was conducted among undergraduate medical students from first-year MBBS to interns in a medical college in Dakshina Kannada, Karnataka, India, over a three-month period from December 2023 to February 2024.

Study participants

Male and female students aged 17 years and above who used at least one social media platform and who provided informed consent were eligible. Students who did not

meet these criteria or declined to participate were excluded.

Sample size and sampling

The minimum sample size was calculated as 230 using the formula $Z^2 p(1-p)/d^2$, taking a prevalence of 18.14%, a Z value of 1.96 and an allowable error of 5%. Convenience sampling was used and all 261 eligible responses received during the study period were included.

Study tools

Data were collected using a pre-designed semi-structured questionnaire with three sections. The first section captured sociodemographic details. The second section used the social media addiction scale, a 41 items five-point Likert tool with scores ranging from 41 to 205, higher scores indicate greater addiction. The third section used the social anxiety scale, a 10-item scale for adults that classifies symptoms as none, mild, moderate, severe or extreme.

Data collection and analysis

Participants were informed about the study objectives and completed the questionnaire online after giving informed consent. Responses were anonymous and confidential. Data were entered in Microsoft Excel 2017 and analysed using IBM SPSS version 30. Descriptive statistics were calculated and associations were tested using chi-square analysis. Logistic regression was performed with severe/extreme social anxiety as the dependent variable.

Ethical considerations

Ethical approval was obtained from the Institutional Ethics Committee of K. V. G. Medical College.

RESULTS

Of the 261 participants, 170 (65.1%) were aged 21–25 years and 91 (34.9%) were aged 15–20 years. Males comprised 87.0% of the sample and females 13.0%. All participants were undergraduate students.

Nearly half of the participants, 126 (48.3%), had high social media addiction, while 87 (33.3%) had moderate addiction. Very high addiction was found in 17 (6.5%), less addiction in 21 (8.0%) and no addiction in 10 (3.8%).

Regarding social anxiety, 99 (37.9%) participants had severe anxiety and 81 (31.0%) had extreme anxiety. Moderate anxiety was seen in 62 (23.8%), mild anxiety in 15 (5.7%) and no anxiety in 4 (1.5%). No statistically significant association was found between age and social media addiction ($p=0.22$) or between gender and social media addiction ($p=0.81$). Age was also not significantly associated with social anxiety ($p=0.46$). However, gender was significantly associated with social anxiety

($p=0.002$), with males reporting higher levels of severe and extreme anxiety. Logistic regression analysis showed that gender was a significant predictor of severe/extreme

social anxiety ($p=0.003$), with males having 4.636 times higher odds than females. Age was not a significant predictor ($p=0.919$).

Table 1: Sociodemographic characteristics of the study participants.

Sociodemographic characteristics	Frequency (%)
Age in years	15-20 91 (34.9)
	21-25 170 (65.1)
Gender	Male 227 (87.0)
	Female 34 (13.0)
Education	UG 261 (100)

Table 2: Prevalence of social media addiction and social anxiety.

Variables	Frequency (%)
No addiction	10 (3.8)
Less addiction	21 (8.0)
Moderate addiction	87 (33.3)
High addiction	126 (48.3)
Very high addiction	17 (6.5)
None	4 (1.5)
Mild	15 (5.7)
Moderate	62 (23.8)
Severe	99 (37.9)
Extreme	81 (31.0)

Table 3: Association between social media addiction and selected demographic variables.

Variables	Category	No addiction	Less addiction	Moderate addiction	High addiction	Very high addiction/P value
Age in years	15-20	3 (1.14)	3 (1.14)	36 (13.79)	43 (16.47)	6 (2.29); 0.22
	21-25	7 (2.68)	18 (6.89)	51 (19.54)	83 (31.80)	11 (4.21); 0.22
Gender	Male	8 (3.06)	18 (6.89)	77 (29.50)	108 (41.37)	16 (6.13); 0.81
	Female	2 (0.76)	3 (1.14)	10 (3.83)	18 (6.89)	1 (0.38); 0.81

Table 4: Association between social anxiety and selected demographic variables.

Variables	Category	None	Mild	Moderate	Severe	Extreme/P value
Age in years	15-20	0 (0)	7 (2.68)	20 (7.66)	37 (14.17)	27 (10.34); 0.46
	21-25	4 (1.53)	8 (3.06)	42 (16.09)	62 (23.75)	54 (20.68); 0.46
Gender	Male	2 (0.76)	10 (3.83)	51 (19.54)	94 (36.01)	70 (26.81); 0.002
	Female	2 (0.76)	5 (1.91)	11 (4.21)	5 (1.91)	11 (4.21); 0.002

Table 5: Logistic regression analysis of severe/extreme social anxiety.

Variables	P value	Odds ratio	95% CI lower	95% CI upper
Gender	0.003	4.636	1.680	12.794
Age	0.919	1.053	0.391	2.833

DISCUSSION

This study found a high burden of both social media addiction and social anxiety among medical undergraduates. Nearly one in two participants had high social media addiction, suggesting that frequent use of digital platforms is common in this age group. This

finding is consistent with the broader literature describing social networking as a prominent part of contemporary communication and reporting problematic or addictive social media use among young people and university students.^{1,2,4,8,14} This may reflect the central role of social media in communication, entertainment and peer interaction.^{1,2} The prevalence of severe and extreme social

anxiety was also notable. One possible explanation is that students who feel uncomfortable in direct social interaction may prefer online communication because it can provide greater perceived control over social interaction.^{12,19} Over time, this pattern may reinforce reliance on digital interaction and reduce opportunities for in-person social engagement. The relationship between online social networking and perceived social isolation has also been examined among young adults.^{20,21}

No significant association was found between age and either social media addiction or social anxiety, which may be because the age range in this study was relatively narrow. The lack of association between gender and social media addiction suggests that problematic use may be widespread across both sexes in this setting. In contrast, gender was significantly associated with social anxiety and males had higher odds of severe or extreme anxiety. Previous literature has specifically examined gender differences in social anxiety and anxiety disorders, providing a relevant context for interpreting this finding.^{16,22} This finding differs from several earlier studies and may reflect context-specific stressors, academic pressures or coping patterns in this sample.

The findings support the need for early identification of students at risk of problematic social media use and anxiety. Preventive strategies such as digital well-being workshops, time-management support and counselling services may help reduce the mental health burden among medical students. Because the study was conducted in a single college using convenience sampling, the findings should be interpreted with caution.

CONCLUSION

This study demonstrates a substantial burden of social media addiction and social anxiety among medical undergraduates in Dakshina Kannada. Gender was a significant predictor of severe or extreme social anxiety, while age was not associated with either outcome. The results highlight the need for early screening, digital behaviour awareness and gender-sensitive mental health interventions in medical colleges.

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