



Original Research Article

Assessment of anxiety and depression in undergraduate students who use social networking sites for academic and non-academic purposes

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ABSTRACT

Introduction: The global escalation in social media engagement, particularly among adolescents and young adults, has elicited significant concern regarding its impact on psychological well-being. Empirical studies have identified a correlation between excessive social media usage and heightened incidences of mental health issues, including depression, anxiety, and psychological distress. Notably, research indicates that adolescents engaging with social media platforms for more than three hours daily exhibit a higher propensity for experiencing mental health challenges. Moreover, the pervasive use of social media has been associated with disturbances in sleep patterns, further exacerbating psychological distress. These findings underscore the necessity for moderated and mindful social media consumption to mitigate potential adverse effects on mental health.

Aim & Objectives: The study aims to evaluate the usage of social networks and their impact on anxiety and depression among undergraduate students in medical, dental, and nursing professions. The specific objectives include estimating the extent of social network usage among these students and assessing the levels of anxiety and depression associated with social networking use.

Materials and Methods : This study aimed to assess social networking usage, its influence on anxiety & depression among undergraduates. 620 undergraduates were included in the study. Social networking usage questionnaire, The Depression, Anxiety & Stress Scale-21 items (DASS-21 scale) along with semi-structured proforma was used to collect the data. Statistical analysis was done using SPSS version 25 and appropriate statistical tests were performed.

Results: Mean age was 20.14 ± 1.281 . Social Networking Usage Questionnaire (SNUQ)-academic scores were higher in 70% of the participants. Majority had higher Social Networking Usage Questionnaire (SNUQ)-socialisation scores. Majority had higher Social Networking Usage Questionnaire (SNUQ)-entertainment scores. Social Networking Usage Questionnaire (SNUQ)-informativeness scores were higher in 57.9% subjects. Mean of SNUQ scores is 55.48 ± 9.04 indicating moderate level of usage. According to DASS-21 scale, 85.6% had depression. 98.4% were having anxiety. Pearson correlation of SNUQ-academic score and DASS-anxiety score, SNUQ-entertainment score and DASS-depression score was positive which was statistically significant.

Conclusion: This study demonstrates increase in social media usage among students both for academic and non-academic purposes. Social media usage was associated with negative mental health outcomes such as anxiety and depression.

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1. Introduction

According to the most recent figures, there are 5.35 billion internet users worldwide, which represents more than 66 percent of all individuals on Earth.¹ Over the previous

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year, there has been a 266 million rise in the global total, translating into 5.6 percent annual growth.¹

Majority of adolescents used the internet mainly for using social network sites while it was followed by usage of the internet for entertainment purposes. Chatting was the most common activity followed by games, checking posts of others, commenting on posts, uploading pictures in that order. Main stimulation for the usage of social media was boredom followed by the need to make announcements, loneliness and curiosity about their friends. Majority of adolescents had positive experiences like feeling openness and friendly and connected.²

Social media can act as a stressor in the form of approval anxiety, fear of missing out and misinformation or fake news based on social media use causes stress hypothesis. The social-media-use-buffers-stress hypothesis suggests that involvement with social media can provide individuals with access to social support and a sense of community, which may help reduce stress. However, the effectiveness of social media as a stress-relief tool depends on how it is used; while it can offer reassurance and community engagement, too much of it or unhelpful use may increase stress and mental health issues. Social media can also be used as a coping tool in the form of distraction, seeking social support and improvement of negative emotions.³ A systematic review suggested that with increasing digital technology and social media usage, the psychological wellbeing of the individuals is being affected in various ways. Anxiety and depression being a common psychological symptom, it is seen in social media usage because of fear of loss. The need for validation in terms of likes and comments in social medias lead to anxiety as well. The risk factors for depression and anxiety were seen to be time spent on social media, activity on social media and its addiction.⁴

The study aims to evaluate the usage of social networks and their impact on anxiety and depression among undergraduate students in medical, dental, and nursing professions. The specific objectives include estimating the extent of social network usage among these students and assessing the levels of anxiety and depression associated with social networking use.

2. Materials and Methods

2.1. Study design

A cross-sectional study.

2.2. Study setting and population

The study was conducted on undergraduate students of Sri Siddhartha Medical College, Sri Siddhartha Dental College and Sri Siddhartha Nursing College, Tumkur, Karnataka

2.3. Study duration

July 2022 to January 2024

2.4. Sampling technique

Purposive Sampling.

2.5. Sample size

620 Undergraduate students.

2.6. Inclusion criteria

Undergraduates students of Medical, Dental & Nursing College of Sri Siddhartha Institute, (SSMC, SSDC, SSNC) Tumkur who had given written informed consent were included in the study.

2.7. Exclusion criteria

Undergraduates who were diagnosed with psychiatric illness.

2.7.1. Study tool

This study was conducted by having face to face interactions with the study participants using a questionnaire with the following components:

1. Socio-demographic data: The questionnaire about socio-demographic variables. To maintain strict anonymity students' names shall not be included.
2. Semi structured performa: The self-administered questionnaire compiled by the staff of Dept. of psychiatry, SSMC consists of 15 questions pertaining to the usage of social media with closed & open-ended responses.
3. Social networking usage question: It is a questionnaire developed by Savita Gupta and Liyaqat Bashir in Indian population attempts to measure social networking usage in individuals. Four domains of social network usage are being assessed and they are academic domain, socialization domain, entertainment domain and informativeness domain. The questionnaire has 19 items which are scored in Likert scale from 1 to 5, where 5 is always and 1 is never. The researchers interpreted the scores for four domains as high and low.⁵
4. Depression anxiety and stress scale – 21 Items (Dass-21): The scale was developed by Lovidond et al to measure anxiety, depression and stress, some of the core symptoms in psychiatric illnesses.⁶ The internal consistency in the clinical sample was found to be 0.96, 0.89 and 0.93 for depression, anxiety and stress respectively. It has Likert scoring from 0 to 3 ranging from did not apply to me at all to applied very much or most of the time. The final score is to be multiplied

by 2 to get the final score. The scores for depression, anxiety and stress were calculated separately and categorized as normal, mild, moderate, severe and extremely severe.⁷

2.8. Statistical analysis

Statistical Package for Social Sciences (SPSS), version 25.0 was used to perform statistical analysis

Descriptive statistics: Socio-demographic and other study variables were analysed using number and percentage for categorical variables, mean and standard deviation for continuous variables.

Inferential statistics: Pearson product moment correlation was used to find the correlation between study variables.

2.9. Ethical approval

The study was conducted after approval by the institutional ethical committee.(SSMC/MED/IEC-135/July-2022)Written informed consent was obtained from the study participant. Confidentiality of all the subjects was maintained.

3. Results

Among the 620 study participants, majority were females. Mean age was 20.14 ± 1.281 . 4.7% of the subjects had family history of psychiatric illness. Majority (48.2%) were using social networking sites for 5-8 hours with acquaintance to them mostly by friends (57.9%).48.2% and 46.9% of study participants started using internet at the age of 11-15 years and 16-20 years respectively.70.3% used internet up to 5 hours for academic purpose and 46.1% used internet for 5-10 hours non-academically.41.3% used internet to watch movies and videos and 39.2% for social media. Most frequently used app was Instagram and 52.7% had logged in permanently. According to DASS-21 scale, 85.6% had depression. Majority (59.4%) had moderate depression. 98.4% were having anxiety. 11.3%, 45%, 30.2% and 11.9% had mild, moderate, severe and extremely severe anxiety respectively.

Figure 1 depict the distribution of sample based on SNUQ-academic scores. SNUQ-academic scores were higher in 70% (n=434) subjects and lower in 30% (n=186) of the participants.

Figure 2 illustrates the distribution of sample based on SNUQ- socialisation scores. Of the 620 participants, majority (64.7%, n=401) had higher SNUQ-socialisation scores and 35.3% (n=219) had lower SNUQ-socialisation scores.

Figure 3 depicts the distribution of sample based on SNUQ- entertainment scores. Of the 620 participants, majority (61.1%, n=379) had higher SNUQ-entertainment scores and 38.9% (n=241) had lower SNUQ-entertainment

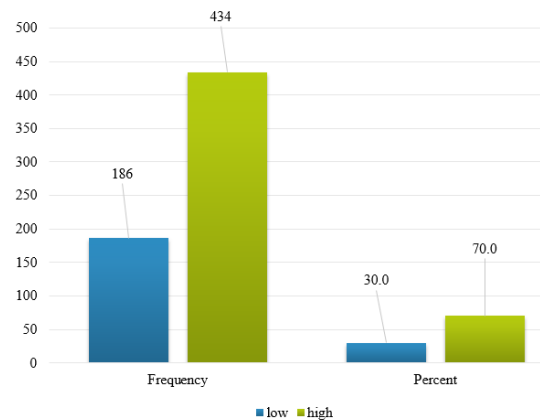


Figure 1: Academic scores

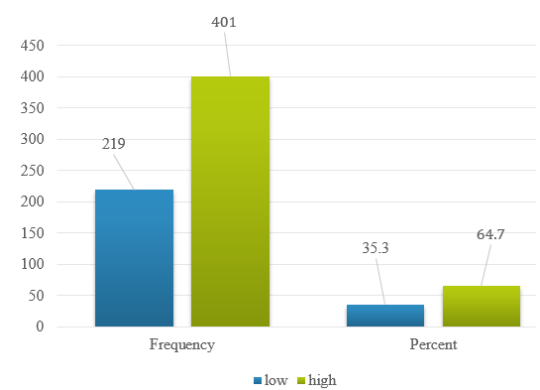


Figure 2: Socialisation scores

scores.

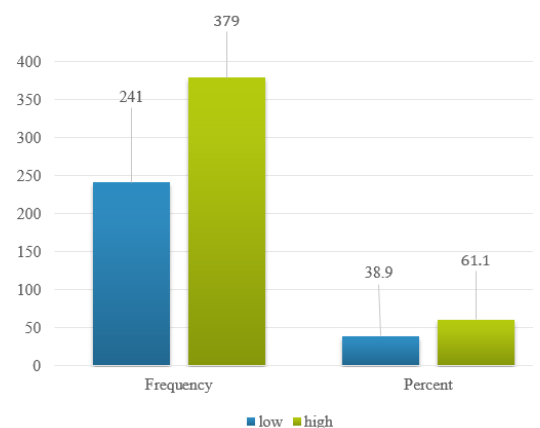


Figure 3: Entertainment scores

Figure 4 depicts the distribution of sample based on SNUQ- informativeness scores. SNUQ-Informativeness score was higher in 57.9% (n=359) subjects and lower in 42.1% (n=261) of the participants.

Table 1: Distribution of sample based on DASS-21 Depression sub-scale scores Depression.

DASS Depression Score	Frequency	Percent
Absent	89	14.4
Present	531	85.6
Total	620	100.0

Table 2: Distribution of sample based on DASS-21 Depression sub-scale severityscores Depression.

DASS Depression Score	Frequency	Percent
Normal	89	14.4
Mild	125	20.2
Moderate	368	59.4
Severe	34	5.5
Extremely Severe	4	0.6
Total	620	100.0

Table 3: Distribution of sample based on DASS-21 Anxiety sub-scale scores

DASS Anxiety Score	Frequency	Percent
Absent	10	1.6
Present	610	98.4
Total	620	100

Table 4: Distribution of sample based on DASS-21 Anxiety sub-scale severity scores

DASS Anxiety Score	Frequency	Percent
Normal	10	1.6
Mild	70	11.3
Moderate	279	45
Severe	187	30.2
Extremely Severe	74	11.9
Total	620	100

Table 5: Mean and Standard deviation of DASS-21 subscale scores

	DASS-Depression Scores	DASS- Anxiety Scores
Mean	14.79	14.21
Std. Deviation	4.156	4.161

Table 6: Pearson correlation between different study variables

Study Variables		R #	p-value
SNUQ-Academic Score	DASS-Depression Score	0.06	0.126
	DASS-Anxiety Score	0.124	0.002*
SNUQ-Socialisation Score	DASS-Depression Score	0.045	0.27
	DASS-Anxiety Score	0.025	0.53
SNUQ-Entertainment Score	DASS-Depression Score	0.087	0.03*
	DASS-Anxiety Score	0.015	0.7
SNUQ-Informativeness Score	DASS-Depression Score	0.018	0.66
	DASS-Anxiety Score	0.063	0.12
SNUQ Total Score	DASS-Depression Score	0.09	0.02*
	DASS-Anxiety Score	0.08	0.046*

#R- Pearson’s product-moment coefficient

*p value < 0.05

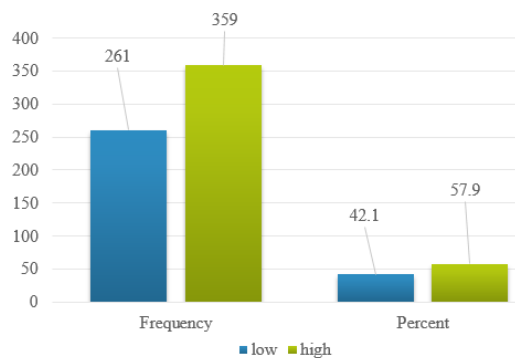


Figure 4: Informativeness score

Pearson correlation of SNUQ-academic score and DASS-anxiety score was positive which was statistically significant.

4. Discussion

In India, there were 751.5 million internet users at the beginning of 2024, with a 52.4 percent internet penetration rate.⁸ Social networking sites (SNSs) are web-based services that allow individuals to

(a) Construct a public or semi- public profile within a bounded system.

(b) Articulate a list of other users with whom they share a connection .

(c) View and traverse their list of connection and those made by others within the system. Some SNSs facilitate connections between strangers based on common interests, experiences, viewpoints, ideas, and activities, the majority of SNSs promote the upkeep of pre-existing social networks and links.⁹

In the study group comprising of 620 undergraduate students, majority of the participants were females (74%) who gave their consent to be the part of the study /their numbers were high as compared to the opposite gender. This finding was also similar to Berryman et al which had 72% of females in the study however it was in contrast with Ohja et al and Barman et al.^{9–11} The reason might be that more number of females had taken up admission in medical, dental and nursing courses. Mean age of the sample was 20.14 ± 1.28 years. This finding was similar to Ohja et al, Rasmussen et al and Barman et al who used undergraduate students as study population similar to our study.^{10,12,13} The majority of the students from the various institutes those who were studying MBBS comprised of 50.5%, 18.4% belonged to GNM course, 16.6% were studying B. Sc and the other 14.5% were studying BDS. Data collection was done in lectures and was based on attendance of students. The possible reason for the above finding could be that all the above are undergraduate courses in India, which students get enrolled around the same age.

48.2% were using social networking sites for 5-8 hrs, 42.3% were using social networking sites for up to 4 hrs, 8.9% and 0.6% were using social networking sites for 9-12 hrs and > 12 hrs respectively. Mean duration of social networking site usage/year was 5.17 ± 2.34 . This finding suggests frequent and higher usage of internet among the participants consistent with Barman et al.¹⁰

48.2% of the subjects started using social media at the age of 11-15 years and 46.9% started using social media at the age of 16-20 years. This increase in social media usage during adolescence is due to easy accessibility of internet and mobile phone in this era. Emergence of COVID-19 resulted in social isolation and schools were closed. Remote teaching was employed with online classes taking the forefront. Young school going children to adolescents were all forced to resort to mobile phones and laptops. It is important to note that adolescence is a time of change that is conducive to the establishment of many addictions.¹⁴

Participants primarily learned about social networking sites from friends (57.9%) This finding can be explained with a fact that people try to share novel things in their life with peers. While 70.3% used the internet for academic purposes up to 5 hours, 46.1% used it for 5-10 hours for non-academic purposes. The most popular online activities were watching movies, videos, and songs (41.3%) and using social media (39.2%). Instagram was the most frequently used social networking site (56.5%), followed by WhatsApp (30.5%). The findings were in contrast to Barman et al, Masthi et al and Hall et al which were done in earlier years when Facebook was the most popular and trending social media site to connect with others.^{10,15,16}

A significant portion (50.3%) of participants used social media at night, followed by 30.2% in the evening. Additionally, 11.3% used it in the late night and 8.2% during the day. This pattern, similar to Barman et al.'s findings where 18.0% frequently stayed up late or woke up early for social media, suggests a strong urge to use social media, potentially leading to problematic internet use (PIU) and social media addiction and rising concerns of insomnia.¹⁰

Majority used social networking sites for academics and socialization followed by entertainment and information. Mean and standard deviation of SNUQ scores is 55.48 and 9.04 respectively. Following the COVID-19 pandemic, a growing number of students are utilizing virtual classrooms and social media for academic purposes, as well as to electronically connect with others. Similar findings were noticed in Hama amin et al where the mean and standard deviation were 53.92 and 10.28 indicating moderate use of social media.¹⁷

Majority (85.6%) had depression according to depression sub-scale. 20.2% and 59.4% had mild and moderate depression. 5.5% and 0.6% had severe and extremely severe depression respectively. The findings were in contrast with Višnjić et al where 58.9% were normal which used DASS-

42 scale.¹⁸

In a study done by Barman and colleagues, 20% had mild-to-moderate depression and 4.0% had severe depression based on Becks Depression Inventory scores[31]98.4% were having anxiety according to anxiety sub-scale. 11.3%, 45%, 30.2% and 11.9% had mild, moderate, severe and extremely severe anxiety respectively. In a study done by Barman and colleagues, at the time of evaluation, 59.0% of respondents experienced moderate anxiety, and 9.5% had severe anxiety, according to their results on the State and Trait Anxiety Inventory-State (STAI-S).⁹The findings were in contrast with Višnjić et al where 55.9% were normal which used DASS-42 scale.¹⁷The study found weak but statistically significant positive correlations between SNUQ scores (academic, entertainment, and total) and DASS scores (anxiety, depression). Hama amin and colleagues in their study showed a statistically significant positive correlation between depression and social networking use. Analogous findings were observed about the positive correlation between social networking usage and anxiety. The findings also demonstrated a favourable correlation between socializing and entertainment aspects of social networking use and anxiety, and depression.¹⁷

5. Conclusion

This study demonstrates increase in social networking usage among students both for academic and non-academic purposes. Social networking usage was associated with negative mental health outcomes such as stress, anxiety and depression. Mixed results were found when compared with other studies. This initiates and encourages the need for furthermore research in the same field involving larger population.

6. Source of Funding

None.

7. Conflict of Interest

No conflict of interest

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