

A Comparative Study on Social Media Usage and Health Status among Students Studying in Pre-University Colleges of Urban Bengaluru

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Abstract

Introduction: Social Media usage is a “global consumer phenomenon” with an exponential rise within the past few years. The use of social media websites is among the common activity for today’s adolescents, they are sometimes overused/misused, which may lead to social media addiction. **Objectives:** The objective of this study was to assess and compare the prevalence of social media addiction between Government and Private Pre-University (PU) college study subjects, to assess the health problems related to social media usage among the study subjects, and to assess the various factors associated with social media addiction. **Materials and Methods:** This cross-sectional study was conducted in Government and Private PU colleges situated in a selected ward of urban Bengaluru city through multistage sampling. A total of 1870 study subjects were recruited. A scale was developed to assess social media addiction. **Results:** The prevalence of social media addiction was 36.9% among users, distributed equally among private and Government PUs. The most common health problem identified was strain on eyes (38.4%), anger (25.5%), and sleep disturbance (26.1%). Being a male, the habit of smoking, alcohol, and tobacco, consumption of junk food, having ringxiety and selfitis were found to be significant risk factors for social media addiction. **Conclusion:** Social media addiction was found in over one-thirds of subjects and majority had mild addiction.

Keywords: Addiction, behavioral changes, physical problems, psychological changes, social media

INTRODUCTION

Globally, about 3.77 billion people are using the Internet through modern gadgets such as smartphones and computers with coverage of 81% of the population in the developed world and 41% of the population in the developing world. Nearly, 71% of the world Internet users are constituted by young people aged 15–24.^[1,2] The most common use of the Internet is to share and learn new information through work, Google, g-mail, apps, online payments, social media, etc. Today, among all these, social media is close to becoming an integral part of the day-to-day lives of most people. Active social media users were 197 million (14% of the population) in India.^[3] The launch of many free/low-cost data packages in 2016/2017 has put India on the global map for large-scale consumption of mobile data leading to exponential usage of social media.^[4] For adolescents, phone-based communication is an important way to maintain their social relationships, and the use of social media websites is one of the most common activities. However, anything in excess is bad

and may lead to social media addiction.^[5] Nowadays, irrespective of their socioeconomic background, adolescents have greater exposure to electronic gadgets like smartphones at a much younger age, and hence, more prone to social media overuse or addiction.

One can get addicted to social media such as alcohol, tobacco, and injectable and noninjectable substances because of proffered reward.^[6] Social media addiction may have a deleterious effect on the physical health, psychological health, and behavioral problems for users in their formative years. Off late, blue whale has emerged as a dangerous social media

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tool which is being blamed for deaths of adolescents and endangered the lives of teenagers.

Internet addiction test is one of the most trusted tools available to assess the prevalence of Internet addiction.^[7] However, for social media addiction, there is no gold standard scale available. As social media addiction is becoming a major issue among the youth, developing a scale to measure social media usage among adolescents seems necessary.^[8]

Social media addiction is an emerging health problem in India, especially among the young population. Overall, the research on this topic is in its infancy and needs further exploration.^[9]

Hence, it was found necessary to study the pattern of social media usage and associated physical and mental health issues among Pre-University (PU) college students as they are the vulnerable group. A novel social media addiction scale was developed and used. The objectives of the study were to assess and compare the prevalence of social media addiction between Government and Private PU college study subjects, to assess the health problems related to social media usage among the study subjects, to assess the prevalence of selfitis and ringxiety, and to assess the various factors associated with social media addiction.

MATERIALS AND METHODS

This cross-sectional study was conducted in Government and Private PU colleges situated in a selected ward of Urban Bengaluru city, Karnataka, India, during July to December 2016. In the selected ward, all PU colleges who gave consent to conduct the study were line listed. Subsequently, PU colleges were selected through simple random sampling using computer-generated a random number (random between function). From the selected PU colleges, first and second PU students who fulfilled the inclusion criteria (present on the day of study and who gave consent) were included in the study. The sample size was 1870 based on the pilot study prevalence of 32%. A total of 1870 (935 in each arm) study participants were recruited from both Government and Private PU colleges. To meet the required sample size of 935 in each arm, 15 PU colleges were visited, of which five were from the private sector and 10 from the Government sector. More number of Government PU Colleges had to be visited as the number of subjects available here were comparatively less.

Each study participant was administered a pretested and semi-structured questionnaire as the study tool. The study tool had two parts. Part A consisted of personal interview on subject's demographic profile, their social media usage and associated health problems. Part B consisted of a self-administered novel social media addiction scale developed, field-tested and validated with a sensitivity of 98.1%, specificity of 80.8%, and Cronbach's alpha 0.75. The scale was linguistically validated in the local language (Kannada). They were also instructed to read each question carefully and answer honestly assuring them that the confidentiality will be maintained.

They were asked to answer about the nonacademic usage of social media. Scale comprised 10 questions, each given a score ranging from 0 to 4 (0-never, 1-seldom, 2-occasionally, 3-often, and 4-always), with a minimum score of 0 and a maximum score of 40. Participants were classified based on the scores as: Normal (<12), mild addiction (13–20), moderate addiction (21–32) and severe addiction (≥ 33). The scoring cutoff was based on the young's Internet addiction test (IAT).^[7]

Operational definitions

Social media user – Subject who had used social media for at least 2 months in the past for nonacademic or nonjob related purposes. Social media nonuser – Subject who had not used social media even once. Borderline Selfitis: Taking photos of one's self at least three times a day but not posting them on social media. Acute Selfitis: Taking photos of one's self at least three times a day and posting each of the photos on Social media. Chronic Selfitis: Uncontrollable urge to take photos of one's self round the clock and posting the photos on social media more than six times a day.^[10] Ringxiety: A sensation and the false belief that one can hear his/her mobile phone ringing or feel it vibrating when in reality it is not.^[11]

Statistical analysis

Social media addiction was diagnosed using a scoring scale. Mann–Whitney U-test was applied for comparison of medians. To measure the association between social media addiction and background variables Chi-square test, Z-test, univariate, and binomial logistic regression was done. Odds ratios and confidence intervals were computed.

Ethics approval and consent to participate

The ethical clearance was obtained before the start of the study. Consent of the PU colleges and students was taken. Confidentiality of the PU colleges and study participants was ensured.

RESULTS

Among 1870 study subjects, 1389 (74.2%) were Social Media Users and 481 (25.8%) were Social Media Nonusers., The median duration of usage with interquartile range (IQR) was 3 (2, 4) years. The median expenditure with IQR of study subjects was Rs. 200 (100, 600) per month and median time spent on social media was 14 (7, 21) hours/week. Among 1389 Social media Users, 1216 (87.5%) consumed junk food. 921 (66.4%) of Social Media Users were males and 468 (33.6%) were females.

Overall social media addiction was observed in 27.4% of the study subjects, 24.0% in government and 30.8% in private colleges ($Z = 3.26$, $P = 0.001$). However, the prevalence of social media addiction among social media users (1389) was 36.9%. The prevalence of mild addiction was high. Table 1 describes the grading of social media addiction.

Among social media addicts most commonly used social media was Facebook (38.9%) whereas, among social media

nonaddicts it was Whatsapp (41.2%). The most common social media used was Internet Gaming (31%), and Facebook (57.3%) among social media addicts in Government and Private colleges, respectively. About 10.1% of social media Addicts had habits of smoking, alcohol, and chewable tobacco.

The most common physical symptom observed in social media addicts was strain on eyes, i.e., 38.4% followed by neck pain, i.e., 30.7% and least was gastritis, i.e., 1.9%. The most common psychological change observed was Anger, i.e., 25.5% and behavioural change observed was sleep disturbance 26.1%. 339 (66%) of social media addicts had Ringxiety of whom 177 (52.2%) and 162 (47.8%) were from Government and Private PU colleges, respectively ($\chi^2 = 28.31$, $P < 0.0001$). Out of 1389 social media users, 315 (22.6%) had borderline selfitis, 76 (5.4%) had acute selfitis and 150 (10.7%) had chronic selfitis. A statistically significant difference was observed among acute ($Z = 3.67$, $P < 0.001$) and chronic selfitis ($Z = 4.93$, $P < 0.001$) between the government and private PU colleges subjects.

To assess the overall effect of various variables on social media addiction, the multivariate logistic regression model was applied. From the final model obtained in Table 2, gender, Ringxiety, personal habits (smoking, alcohol and tobacco chewing), junk food consumption, and selfitis were statistically significant and may be considered as independent risk factors for developing social media addiction.

There was a statistically significant association between social media addiction and physical symptoms (2.21 [1.77–2.76], $P < 0.0001$), psychological changes (1.96 [1.57–2.44], $P < 0.0001$) and behavioral changes (2.63 [2.06–3.35], $P < 0.0001$) by applying univariate logistic regression.

DISCUSSION

The meteoric rise of the Internet usage and emergence of various social media platforms has left many young Indians socially isolated and lonely. There is a large growth in the use of mobile phones, especially among the youth which is followed by rapid growth in the use of online Social Media sites.^[12] Two-third of the study subjects had used social media in the present study, whereas globally half of the population are social media users.^[13] Young's IAT is one of the most commonly used scales to measure problematic Internet use.^[14] To measure social media addiction, a novel social media addiction scale was developed and validated based on the IAT scale. The reliability of the scale developed was comparable to social media addiction scale with 14 items adapted from the IAT.^[15] The novel scale used to measure social media addiction was easy to use because of its simplicity, local language, and fewer questions and can be used as a screening tool for social media addiction among PU college students.

Most of the studies on social media addiction are on individual social media platforms (like Facebook, Internet Gaming, Mobile phone), unlike the present study where the combined

Table 1: Distribution of study subjects according to grading of social media addiction (n=513)

Grading	Government*	Private*	Total*	Z-test, P
Mild	182 (80.8)	191 (66.3)	373 (72.7)	0.93, 0.33
Moderate	39 (17.3)	93 (32.2)	132 (25.7)	
Severe	4 (1.9)	4 (1.5)	8 (1.6)	
Total	225 (100)	288 (100)	513 (100)	

*Figures in parenthesis indicate percentages

Table 2: Association between individual variable and social media addiction by multivariate logistic regression (n=1389)

Variables	Adjusted odds ratio (95% CI)	Standard error	Z	P
Gender				
Female	-	-	-	-
Male	1.54 (1.20-1.97)	0.19	3.45	<0.0001
Ringxiety				
No	-	-	-	-
Yes	1.53 (1.21-1.92)	0.17	3.19	<0.0001
Personal habits				
No	-	-	-	-
Yes	2.72 (1.54-4.82)	0.76	3.24	0.001
Junk food				
No	-	-	-	-
Yes	2.03 (1.40-2.95)	0.38	3.64	<0.0001
Selfitis				
No	-	-	-	-
Borderline	1.73 (1.31-2.27)	0.24	3.94	<0.0001
Acute	1.95 (1.42-3.01)	0.29	3.99	0.00012
Chronic	2.11 (1.46-3.03)	0.39	4.04	<0.001

effects of all types of social media have been taken, to measure the burden of Social Media Addiction. In the current study, the overall prevalence of social media addiction was high and may be explained due to the scale used which had high sensitivity. There was no difference in the prevalence of Social Media Addiction between Government and Private PU college study subjects contrary to the assumption that Private college subjects will be more prone to social media addiction due to higher social status, and purchasing capacity. We do believe after the introduction and availability of free data packages, prevalence could be much higher comparatively. Nonetheless, Mild Addiction observed was mainly accountable for the higher prevalence and was comparable to Marahatta *et al.* study of 39.6%.^[16] This was a good sign, as he/she is an average social media user and has control over the usage without any problematic symptoms and at a stage which is reversible with timely counseling. PU college students are being exposed to social media overuse/abuse at a younger age, leading to the hazardous use of technology. This is taking a toll on their physical and family health. Males in comparison to females were significantly more likely to be addicted in concordance with studies of Müller *et al.*, Goel *et al.*^[17,18]

Among the Social Media Addicts, Facebook was most commonly visited social media in Government PU college subjects comparable with estimates where Facebook was most commonly used, whereas Whatsapp was most common among Private PU college study subjects.^[19]

The median duration of usage, monthly expenditure on data packages and hours spent on Social media per week was found to be more in social media addicts compared to social media Nonaddicts similar to Goel *et al.* study, where Addicts averaged 38.5 h/week and Nonaddicts averaged 4.9 h/week on the computer.^[18] The students reported spending Rs. 300/-(200, 500) per month on social media in Subba *et al.* study, comparable to the present study finding.^[20] Pornography browsed by the social media addicts was significant in Private college than Government in concordance with other study.^[16] Subjects with the habit of smoking, alcohol and chewable tobacco are more prone to get addicted to social media.^[21]

Social media addicts are 2.21 times more likely to have physical symptoms compared to Nonaddicts in the current study. The Physical symptoms observed among social media Addicts, like backache, headache, neck pain, shoulder pain, wrist pain, strain of eyes, neck problems, myopia, etc., observed were in concordance with other studies.^[22] Social media addicts were 1.6 times more vulnerable to having psychological changes in comparison with nonaddicts. Psychological changes like anger, anxiety, tension, irritability, stress, etc., were more among addicts similar to Subba *et al.* study.^[2] Those who are addicted to Social media are 2.63 times more prone to behavioral changes compared to Nonaddicts in this study. Behavioral changes like sleep disturbance, neglect personnel hygiene and failure to eat regularly observed were more among Social Media addicts similar to other studies.^[22,23]

Borderline selfitis (1.73 times), Acute selfitis (1.95 times) and Chronic selfitis (2.11 times) are more prone to getting addicted to Social Media. No studies on Selfitis is available from India for comparison purpose as it is a recently observed phenomenon. Similarly, Social media Users who had Ringxiety were prone to get addicted to Social Media. Subjects having Ringxiety was similar compared to 64% in Masthi *et al.* study (64%).^[11]

Social media addiction is an emerging health problem in India. The parents should be proactively involved in the child's upbringing in preventing the excessive use of social media and consequently the development of adverse health effects.

Limitations

Information on details of Social Media usage, money spent, symptoms described are based on the history revealed by study subjects. Other factors such as psychosocial characteristics of the subjects, personality traits, etc., which may have a direct or indirect influence are beyond the scope of the study. A larger study covering a wide geographical area should be done using the Social Media Addiction scale for generalization and acceptance.

CONCLUSION

Social media addiction was observed in over one third of the subjects, almost equally distributed and majority had mild addiction.

Recommendation

Counseling regarding healthy use of technology for Social Media users is the need of the hour. The scale can be used as a screening tool for Social Media Addiction. The study points towards the need for legislative action like considering having an age limit for use of Social Media just as we have for cigarette smoking and alcohol.

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Conflicts of interest

There are no conflicts of interest.

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