

The effect of social media usage on the mental well-being of medical college students in Bangalore, Karnataka

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ABSTRACT

Background and Objectives: Social media offers a platform for its users to share information and spread awareness regarding various issues including mental health problems. In some previous studies it was found that people suffering from mental health issues benefited from social media. However, the use of social media is also significantly associated with increased depression, mood and anxiety disorders in adolescents. Furthermore, it was found that the prevalence of poor mental health was high in medical students. With this background, this study was taken up to contribute to the scarce literature about the impact social media has on the mental well-being of medical students. **Methods:** The setting was a medical college and research centre, situated in the metropolitan city of Bengaluru in Karnataka. A pretested and predesigned questionnaire was self-administered anonymously by 318 students. The data was analyzed using appropriate statistics. **Results:** A statistically significant relationship was found between the amount of time spent on social media and the mental well-being score, according to the Sell and Nagpal scale, of students. In participants with scores of < 90.8, (30.2%) of them used social media for 4 hrs or more, as opposed to those with scores ≥ to 90.8, (35.6%) of them spent between 1 and 2 hrs a day on social media, 90.8 being the mean well-being score in India. **Conclusions:** Students need to monitor their screen time. There is a need to go back to old times of establishing human connections and, families and friendships should be nurtured.

Keywords: Medical students, mental well-being, screen time, social media, social networking sites

Introduction

There is no universally accepted definition of mental well-being, as it is a subjective term. Multiple factors play a role in maintaining an optimal well-being status in an individual. The WHO's regional office for South East Asia has given a few concepts of mental well-being around which a definition can be loosely woven. These concepts include, resilience, positive psychology, salutogenic perspective of mental health, social capital and quality of life.^[1]

The initial study period in a medical career often tends to be very stressful and affects the mental health of students negatively. In a study conducted on a class of medical students, it was found that the Beck's Depression Inventory (BDI)^[2] scores of the students increased over time, multiplying nearly by three folds during the first two years.^[3] In a previously conducted cross sectional study it was found that the prevalence of poor mental health was high in medical students.^[4] These grim results could be attributed to the fact that medical students are subjected to high levels of academic pressure and stress. Balancing their personal, social and academic lives further puts a strain on their mental health. It has also been suggested that the factors responsible for the high BDI scores during the medical training period are anxiety traits, medicine choice factors, relationship patterns and academic burnout.^[5]

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In this age of changing technology, social media has taken up one of the most influential positions in a person's life. This has scaled extents where even a day spent without one's smartphone has become imperceptible. The term "social media" generally refers to Internet-based tools that allow individuals and communities to gather and communicate; to share information, ideas, personal messages, images, and other content; and, in some cases, to collaborate with other users in real time.^[6] Social media is said to have both negative and positive impacts on humanity. In a study conducted on young adults in the US, it was found that use of social media was significantly associated with increased depression.^[7] According to another study conducted in schools in Leicester and London (UK), social media use was believed to cause mood and anxiety disorders in adolescents.^[8] Despite these challenges and risks posed by social media, it does have an upside. It offers a platform for its users to share information and spread awareness regarding various issues including mental health problems. In a previous study it was found that people suffering from mental health issues benefited from social media as it increased interaction with peers online and helped form a feeling of social connectedness as they shared personal stories which helped them to cope with their issues.^[9]

With this background, this study was taken up to contribute to the scarce literature about the impact social media has on the mental well-being of medical students, since they are the future workforce of the healthcare sector. Their manner of practice of medicine will largely be determined by their sense of well-being in their formative years. Eventually, such data could be used to devise methods for the optimal usage of social media and derive maximum benefits from the same with minimal negative impact on health, so that they become responsible clinicians and content individuals. For instance, adding a question about patient's screen time in the history taking process would be significant. As per numerous studies conducted,^[10-14] increased screen time seems to have a negative association with not just mental health but also general health. Thus educating the general population about the harms of increased use of social media and prolonged screen time is an important step in the primary prevention against many health issues such as depression, anxiety, insulin resistance, obesity, dry eyes, etc., Thus, this knowledge of the use of well-being scales could be incorporated into the practice of primary care.

Materials and Methods

This cross-sectional study was conducted at Vydehi Institute of Medical Sciences and Research Centre, Whitefield, Bangalore. It was done among medical students studying in years one to four. The study was conducted between March, 2019 to December 2019, with an objective to assess the duration and quality of content accessed on social media and their subsequent effect on the mental well-being of medical students. After consulting a clinical psychologist in the college, a study proposal was drawn up. Ethical clearance was sought from the ethics committee at Date of approval: 30/07/2019 VIMS and RC after submitting the study proposal.

A pilot study with 15 participants was first conducted to estimate the sample size. After results were obtained, a sample size of 350 was decided upon. The inclusion criteria as per our proposal, included undergraduate medical students with access to social networking sites and participants willing to provide consent to partake in the study. Exclusion criteria specified that students suffering from mental illnesses and those on medication for the same will not be considered.

The Sell and Nagpal subjective well-being scale^[15] was used to collect data. This scale is standardized and grades each of the options with scores of 0, 1, 2, 3. There are a set of negative and positive questions. The final score is calculated by tallying the score for each of the questions. In India, 90.8 is found to be the mean score based on previous literature.^[15] The data collection form was made, after reviewing and resorting to various literature relevant to the topic studied, to collect both quantitative and qualitative data regarding the use of social media and its subsequent effect on the mental well-being of medical college students. The data collection forms were distributed to students of years one to four, gender no bar. Around 320 forms were received. The study subjects were all aged between 18 and 26 years.

Next, all the collected data was entered onto a spreadsheet. The questions were tabulated as columns and each of the responses were recorded in the rows below. Our responses were graded as per the instructions of the Sell and Nagpal scale and tabulated in the same spreadsheet. The statistician's help was sought in analyzing the data. The qualitative data was analyzed after dividing the study group into three categories. Category one included the use of messaging and feed apps such as WhatsApp, Instagram, Snapchat, Facebook, Twitter, Pinterest, etc., Category two included the use of search engines and video streaming apps such as Google, Safari, YouTube, Netflix, Hotstar, Prime video, etc., Category three consisted of use of all music, gaming and miscellaneous apps such as Spotify, Saavn, PUBG, etc., The data en masse was then analyzed using the Chi square test.

Results

The results obtained as part of the statistical analysis of the data findings have been organized in correspondence to each of the study objectives. The results have been categorized into tables after performing appropriate statistical studies using Pearson Chi square test, through the SPSS software version 19, as deemed necessary and they represent the responses of the participants to the questions provided in the data collection form. Further, graphs of the responses to a few questions from the Sell and Nagpal questionnaire have been furnished.

A total of 320 students participated in this study but close to ten forms were excluded from the study since the participants claimed to have been suffering from mental conditions warranting the use of medication for the same. Hence, data from 311 study subjects

was finally analyzed. The age of participants ranged from 18 to 26 years, with a mean age of 22 years, gender no bar.

The effect of duration spent on time spent on social media, on the mental well-being of medical students

Based on the time that students spend on social networking sites and their mental well-being scores it was found that, of 311 students, 57 (18.3%) spent one hour or less per day browsing through SNSs, and an almost equal 58 (18.6%) participants spent four hours or more each day. A majority of the students, however, i.e., 100 (32.2%) of them spent between two to four hours each day on social media. The participants were divided into two groups, those with mental well-being scores of ≥ 90.8 and those with scores < 90.8 , since 90.8 is found to be the mean score in India, based on previous literature.^[15] 162 (52.5%) of the 311 participants had mental well-being scores of ≥ 90.8 and around 149 (47.9%) of the participants had scores of < 90.8 . Of those with scores of ≥ 90.8 , only 19 (12.8%) participants spent four hours or more browsing through social media. However, of those with a score of < 90.8 , 39 (24.1%) of them spent four hours or more on social media. Further, a majority of the participants with scores of ≥ 90.8 , i.e., 53 (35.6%) of them, spent only between 1-2 hours a day on social media, but a majority of those with scores of < 90.8 , i.e., 49 (30.2%) of the participants, spent between two to four hours a day on social media. [Table 1]

Effect of the quality of content browsed on social media on the mental well-being of medical students

When the quality of content browsed was assessed and the responses recorded, it was inferred that participants had access to a varied number of these social networking sites. After tabulating all the 311 responses, these sites were categorized into 3 groups, namely, category 1, 2 and 3. The participants were once again divided into groups of those with mental well-being scores of ≥ 90.8 and < 90.8 . The responses as tabulated in Table 2, indicated the following. Of the 311 participants, 156 (96.3%) of the participants with mental well-being scores of < 90.8 , belonged to category 1, which means that they mostly used messaging and feed apps. But an almost equal number of participants with scores of ≥ 90.8 , i.e., 140 (94%) of them, also belonged to category 1, using messaging and feed apps most commonly. It was found that 108 (66.7%) of the participants with scores < 90.8 , and 93 (62.4%) of participants with scores of ≥ 90.8 , belonged to category 2. This indicates the use of search engines and video streaming apps. Further, 100 (61.7%) of the participants with scores of < 90.8 and 83 (55.7%) of the participants with scores of ≥ 90.8 , belong to category 3, accessing various music, gaming and miscellaneous apps. [Table 2]

Other findings

Question number 8 of the Sell and Nagpal scale, assessed the self-confidence of the participants. Of the 311 participants, 170 (54.7%) of them opted for the second option, i.e., self-confident to some extent. Only 31 (9.9%) participants were found to be not very confident in themselves. Question number

22 assessed the attachment to family members. It was positively found that 193 (62.1%) participants were very much attached to their family members. However, about 32 (10.3%) participants were not so attached to their family members. Question number 33 assessed the close friendships that the participants shared. Of the 311 participants, 175 (56.3%) participants mentioned that they did share very close friendships. The other 136 (43.7%) of the participants however, either didn't have very close friends or shared close friendship only to a certain extent. [Figure 1]

Question number 19 was based on the anxiety levels of the participants, it was found that a majority of them, i.e., 180 (57.8%) participants had anxiety sometimes. Only 42 (13.6%) of them hardly ever had anxiety. Question number 39 from the Sell and Nagpal questionnaire assessed the sleep pattern of the participants. It was found that 40 (12.9%) of them had disturbed sleep most of the time, and 162 (52.1%) of them hardly ever experienced disturbed sleep. [Figure 2]

Discussion

The purpose of this study was to assess the effect of the duration spent on, and the quality of social networking sites on the mental well-being of medical students. Data for this study was collected from students attending Vydehi institute of medical sciences and research centre.

In our study it was found that a majority of the students i.e., 196 (63.1%) of them used social networking sites moderately,

Table 1: Distribution of study subjects based on the time spent on social media for mental well-being scores of < 90.8 and ≥ 90.8

Time spent on social media	Well-being scores		Total
	< 90.8	≥ 90.8	
≤ 1 h	19.1% (31)	17.4% (26)	18.3% (57)
1-2 h	26.5% (43)	35.6% (53)	30.9% (96)
2-4 h	30.2% (49)	34.2% (51)	32.2% (100)
≥ 4 h	24.1% (39)	12.8% (19)	18.6% (58)
Total	52.1% (162)	47.9% (149)	100% (311)

n=311, *P* (as determined from Pearson Chi-Square) = 0.048. Here, *P*<0.05

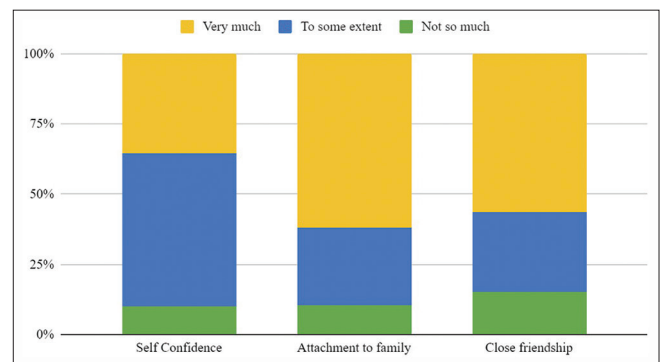


Figure 1: Students experiencing feelings of self confidence, attachment to family and friendship

Table 2: Distribution of study subjects based on the quality of content browsed on social media, i.e., category 1, 2 and 3, for mental well-being scores of <90.8 and ≥90.8

Total well-being score	Category 1 (messaging and feed apps)		Category 2 (search engines and video streaming apps)		Category 3 (music, gaming and miscellaneous apps)		Total
	No	Yes	No	Yes	No	Yes	
<90.8	3.7% (6)	96.3% (156)	33.3% (54)	66.7% (108)	38.3% (62)	61.7% (100)	52.1% (162)
≥90.8	6% (9)	94% (140)	37.6% (56)	62.4% (93)	44.3% (66)	55.7% (83)	47% (149)
Total n=311	4.8% (15)	95.2% (296)	35.4% (110)	64.6% (201)	41.2% (128)	58.8% (183)	100% (311)
	P=0.337 Here, P>0.05		P=0.433 Here, P>0.05		P=0.281 Here, P>0.05		

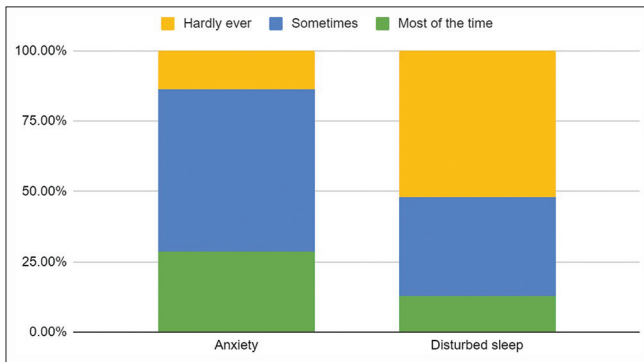


Figure 2: Students experiencing anxiety and disturbed sleep

between one to four hours. However, in a study conducted in Siliguri, West Bengal, India, it was found that 338 (87.1%) students, out of 388 participants used social networking sites and spent an increased amount of time on these networks, and addiction was seen in 70.7%.^[16] In another scoping review, on social media use, and mental health and well-being, it was found that the focus on the potential association between social media use and positive well-being outcomes seem to be rare in the 79 articles that were reviewed.^[17] Similarly, in our study we found that students with better mental well-being scores, i.e., ≥ 90.8, used messaging and feed apps, search engines and video streaming apps, and music, gaming and miscellaneous apps, less frequently compared to those with mental well-being scores of <90.8, which is the mean Indian score. Another study on the influence of mass and social media on psychobehavioral responses among medical students in China concluded that, out of 2086 completed responses received, findings on anxiety levels revealed that 795, (38.1%) of respondents reported moderate-to-severe anxiety.^[18] Similarly, in our study, 180 (57.8%) of the 311 students who had access to social media at all times, experienced anxiety sometimes. In a study conducted on determinants of subjective poor sleep quality in social media users among freshman college students, it was found that out of the 842 participants, 75.4% experienced poor sleep quality.^[19] However, in our study, it was found that 162 (52.1%) of the 311 students who had access to social media at all times, hardly ever experienced disturbed sleep.

Conclusion and Recommendations

It is concluded that there exists a statistically significant association between the number of hours spent on social media with the mental well-being scores of the participants. Those with

lower scores spent a significantly greater number of hours on social media, while those with high scores spent a considerably lesser number of hours on these social media. There was no statistically significant relationship that was established between the quality of content browsed on social media and the mental well-being scores of participants. But, participants with lower scores did show a higher consumption of content on social media as opposed to those with higher scores. A statistically significant relationship was failed to be established probably due to the limitation of the sample size. Furthermore, when the mental well-being of participants was analyzed in isolation, it was found that a greater number of participants, 162 of them (n = 311) had a total score of < 90.8. A majority of the participants, thus seem to fall short of being adequately well, mentally.

It has thus been established that while the growth of technology has benefited the human race by keeping people connected with each other, and keeping them informed about the world that they live in, it has also resulted in a greater number of people seeking happiness from these digital platforms. These social networking sites have resulted in people having erratic sleep patterns and therefore, negative mental states. The emphasis on maintaining human connections has shifted from effectively communicating with each other in physical presence, to maintaining these connections with an online presence. This is not a very promising trend since it can lead to feelings of isolation and loneliness, especially among students who are already burdened with the stress of academics and societal expectations. As a solution to this shifting pattern, the need to go back to old times of establishing human connections should be understood. Families and friendships should be nurtured.

From the current study we see that there seems to be a relation between the mental well-being of a person and their screen time. During consultation with a patient, history taking is an important aspect that helps the physician come up with relevant differential diagnosis. Hence, adding a question about their screen time in the history taking process would be of significance as it would help the physician steer the diagnosis and treatment process in the right direction.

The focus on the mental well-being of medical college students is of specific importance since the future of the healthcare sector lies in their hands. Their practice of medicine will be a direct reflection of their well-being in the prime years of medical

training. Hence, concerted efforts need to be made towards making progress to a happier and mentally healthier society, with content individuals.

- Statistically significant association has been established between the number of hours spent on social media and mental well-being scores of the participants, where students who spent more time on social media showed lower mental well-being scores.
- Knowledge regarding the role of social media on the mental well-being of people can play a significant role in the primary prevention of many mental health issues prevalent among them.
- Further studies are required to establish a conclusive relationship between usage of social media and the mental well-being status.

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Conflicts of interest

There are no conflicts of interest.

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