

Health Related Effects of Social Media on Students of Khyber Medical College, Peshawar

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Abstract

Background: social media consists of many applications like Facebook, WhatsApp, YouTube and many more through which people communicate with each other. Over the past few years, the use of social media has increased tremendously. Apart from its advantages in our lives, increased use of social media has many health-related adverse effects like vision problems, sleep problems, depression and anxiety. This study aims to find the relationship between increased use of social media and its various health related adverse effects on the students of Khyber Medical College.

Study type, settings & duration: This cross-sectional study conducted at Khyber Medical College, Peshawar from January to June 2020.

Methodology: A sample size of 412 calculated using the WHO calculator for sample size and the sampling technique employed was a random sampling technique. The tool used to collect the data was questionnaire based; representative of each class group from first year to final year. SPSS Microsoft for Windows was used to analyze the data quantitatively.

Results: Each variable was quantitatively weighed with a total of 63.8% of the study population exceeding 2 hours of recommended screen time. Of the various variables evaluated; depression, anxiety, disturbed sleep and vision problems showed a positive relationship with prolonged social media usage whereas use of sleep-inducing drugs were not related to prolonged social media usage.

Conclusion: We were able to conclude from the comparison with previously conducted studies that health related problems have been on the rise due to increased utilization of social media apps which should be addressed.

Key words: Social media sites, whatsapp, youtube, snapchat, facebook, health effects, vision problems, psychological effects, sleep pattern disturbances.

Introduction

Social media is a network of websites and applications that allows users to distribute various forms of content with each other as part of a networking process.¹ Over the years social media has altered our interactions, the way we make friends and communicate. Although we have benefited a great deal from its advent, there are

certain risks pertaining to its excessive usage.² Three billion people – around 40% of the world's population – actively take part in social networking either commenting, liking, subscribing or just updating their accounts and maintaining a social media presence.³ Not surprisingly, this amounts to five hundred thousand tweets and snapchat photos shared per minute. Concomitantly, children are spending more and more time on social media apps such as TikTok. It is estimated that in 2010–11, 8.6% of children (aged 0-15 years) were reported to have spent over three hours online on a weekday, rising to 12.8% of children in 2015-16.⁴ With the continuous rise and positive trend of social media usage, people are subjected to its adverse effects among which are anxiety, depression, sleep problems, eye problems, self-esteem issues and a feeling of isolation or loneliness.⁵

Most people who find themselves using social media excessively experience sleep problems. It has been postulated that artificial lighting interferes with the body's formation and

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MS, NS, SF & AAK conceptualized the project. did the data collection, the literature search and performed the statistical analysis. Drafting, revision & writing of manuscript were done by MS.

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secretion of the hormone melatonin, that is produced to facilitate sleep – and blue light, a light smart phones and laptop screens display, is said to be one of the main causes.⁶ With prolonged use of social media, people are exposed to blue light which is a of greater energy than other light frequencies thus causing damage the tissues of the retina and, moreover, diminished vision. A 2015 report from The Vision Council reported 61 percent of Americans (nearly 2 out of 3 persons) had experienced eye strain after prolonged use of digital devices such as smartphones while scrolling through various social media platforms.⁶

Excessive use of social media also provokes general anxiety characterized by a sense of agitation, worry, trouble sleeping and focusing. Studies have shown that those individuals who use greater than seven social platforms had higher levels of anxiety and general anxiety symptoms versus those that used 0-2 platforms.⁷ According to one particular study carried out in 2016 which included 1700 people, people were found to be three times more prone to depression characterized by a sense of hopelessness, mood changes, irritability, lack of interest in their surroundings, weight changes, psychomotor agitation or retardation, and fatigue among those individuals spending a larger amount of time on social media. Reasons for this, they suggested, were pertaining to users comparing their lives to those online and thus having an altered view of reality, being bullied online and overall feeling like time could have been spent more productively.⁷ Studies have also found that individuals who find themselves using social media more were twice as likely to experience a sense of social isolation, which can include a feeling of decreased belonging in the society, troubles engaging and maintaining relationships. As the time spent on social media increases, physical interactions could be replaced causing people to feel isolated.⁷

Part of the reason social media causes people to feel depressed is the comparison factor. People fall into a trap of comparing themselves to others as they view their timelines ultimately creating a sense of insecurity and depression.⁸ This study aims to assess the amount of social media usage and its related adverse effects in students of Khyber Medical Peshawar.

Methodology

It was a cross-sectional descriptive study of students at Khyber Medical College, Peshawar to explore the health-related effects of social media on the students. The participants were analyzed for 7

months after approval of the synopsis. The sample size was calculated according to the WHO sample size calculator, taking the prevalence as 384 (true population mean of 50%) using the first step in the sample size calculator, that is, $n = (3.8416 * (0.5 * (1 - 0.5))) / (0.05 * 0.05)$. The resulting sample size calculated amounted to 412. Cases were selected through a non-probability convenient sampling technique.

Data was collected through structured questionnaires from the students. A 4-item scale developed by the Patient-Reported Outcomes Measurement Information System (PROMIS) was used to evaluate depression and anxiety. Data was analyzed through SPSS software for windows. Frequencies and percentages were calculated for each variable. Chi square test was applied to find out the relationship of health-related adverse effects with the amount of social media usage.

The ethical approval was obtained from the Institutional Review Ethical Board of Khyber Medical College, Peshawar vide letter no. 423/DME/KMC.

Results

The 412 individuals responded with 50.2% (f=207) being males and 49.8% (f=205) being females. 30.3% (f=125) respondents were of 1st year MBBS, 18.7% (f=77) were of 2nd year MBBS, 16.3% (f=67) of 3rd year MBBS, 27.9% (f=115) of 4th year MBBS and 6.8% (f=28) of final year MBBS.

The respondents were asked to mention whether they use social media or not, out of 412 students, 99.8% (f=411) students were found to use social media.

The respondents were asked to mention the number of hours they spend daily on social media. 16.7% (f=69) spend 1 hour per day, 19.4% (f=80) spend 2 hours per day, 28.4% (f=117) spend 3 hours per day, 18.7% (f=77) spend 5 hours per day and 16.7% (f=69) spend more than this.

Regarding facing depression or anxiety, 13.6% (f=56) students were suffering from mild depression, 35.2% (f=145) students had moderate degree of depression and 51.2% (f=211) had severe depression. The percentages of the students suffering from anxiety are as follows: 13.6% (f=56) students had mild anxiety, 31.6% (f=130) students reported moderate anxiety and 54.9% (f=226) were suffering from severe anxiety.

With respect to eye related symptoms, 66% (f=272) students complained of having a burning or scratching sensations in their eyes while 67% (f=276) students complained of having eye strain, headache and blurred vision. 35.7% (f=147)

respondents also complained of having red eyes after prolonged phone usage.

The students were also asked whether excessive social media usage affected their sleeping habits or not, 32.3% (f=133) students faced trouble falling asleep and 25% (f=103) students were having trouble staying asleep. 11.9% (f=49) subjects were using drugs for sleep.

We performed Chi square tests to determine the relationship between social media usage and different variables under study. It was found that the *p*-value for following variables were less than 0.05: depression, anxiety, eye strain, headache. (Table-1 & 2)

Table 1: Table depicting the association between depression and the use of social media.

	Value	Degree of Freedom	<i>p</i> -value
Pearson chi-square	24.467*	8	0.002
Likelihood ratio	24.644	8	0.002
Linear-by-linear association	9.712	1	0.002
N. of valid cases	412		

*0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.38

Table 2. Table depicting the association between anxiety and the use of social media.

	Value	Degree of Freedom	<i>p</i> -value
Pearson chi-square	18.937*	8	0.015
Likelihood ratio	18.757	8	0.016
Linear-by-linear association	12.742	1	0.000
N. of valid cases	412		

*0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.38.

Whereas the *p*-values for remaining variables were greater than 0.05, those variables are as follows: participation in social and recreational activities, burning or scratchy sensation in the eyes and usage of drugs for sleep.

Discussion

The result of our study shows that almost all of the students use social media. Three out of five (60%) students use social media more than 2 hours per day while, according to a research study done in University of Zambia, 3 out of 25 students use social media more than 2 hours per day.

Previous research done to evaluate the adverse effects of social media on humans did not

evaluate which platform of social media people use more. According to our study's results, most students primarily used Facebook, followed by Instagram, WhatsApp, YouTube, Snapchat and finally other platforms.

A research study done at the University of Zambia concluded that the reasons for using social media by people included gaining knowledge, socializing with friends and family, sharing pictures, documents and other forms of media. These results are similar to the results of our study which showed that the majority of students use social media for watching movies and dramas while some also use social media for chatting, educational purposes and political reasons.⁹

A study done on the Saudi population concluded that excessive use of social media apps can cause visual symptoms including burning, dryness, tear film instability and oxidative stress. The results of our study also showed that excessive social media is related to eye strain, blurred vision, and red eyes but we were unable to find out significant relation between social media use and a burning or scratchy sensation in the eyes.¹⁰

Research conducted between 2005 and 2016 concluded people using social media especially those with a negative approach are prone to depression and anxiety. These results are similar to our study's results which showed that the majority of the students using social media were experiencing moderate to severe symptoms of depression and anxiety.¹¹

A study conducted in the US concluded that excessive use of social media has a negative impact on sleep. They found out that people using social apps have a prolonged sleep latency and thus difficulty falling asleep, they reported getting less than 7 hours of sleep per night causing them to wake up feeling tired causing impairment in day to day activities. These results are similar to the results of our study which showed that 32.3% students faced trouble falling asleep and 25% students were having trouble staying asleep, 11.9% of subjects were found to be using pharmaceutical drugs to sleep.¹²

The duration of social media use by 63.8% (f=263) of students exceeded the recommended screen time which is 2 hours per day. Application of chi square test showed that depression, anxiety, eye strain, headache, blurred vision, red eyes, trouble falling asleep and trouble staying asleep had a significant relationship with the duration of social media usage, while participation in social and recreational activities, burning or scratchy sensation in the eyes and usage of drugs for sleep had no significant relationship with the duration of social

media usage. In light of the aforementioned findings, awareness should be spread amongst the public, especially medical students and students in general regarding the ill effects of social media on health to reduce its excessive use among people.

Conflict of interest: None declared.

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