Listen to Me; Here's an Analysis of Social Media Impact on Mental Health of Medical Students

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ABSTRACT

Introduction: Social network sites are extensively being used worldwide. There is hypothesis that problematic or excessive use of digital media may influence the behavior or mental effects of end-users particularly the young population.

Objectives. Our study aims to analyze and explore patterns of mental health issues due to social media abuse among medical students.

Method: This cross-sectional study was conducted in Shahida Islam Medical Complex Lodhran from 15th of November till 15th of December 2023. A total of 100 medical students who had access to social media, were distributed with a hard copy of the questionnaire and the results were analyzed.

Results: The research revealed that participants most frequently visited Instagram (56.8%) followed by WhatsApp. 41 % reported mood disorder of minor or severe depression and 11% had thoughts of deliberate self-harm or suicide directly linked to digital media abuse. 69 percent had sleep- wake disturbances.

Conclusion: Social media abuse had a variable degree of overall influence on mental health.

Keywords: Social Networking Sites; Medical Students; Mental Health Effects

Introduction

Social network site (SNS) is an umbrella term that encompasses a variety of online platforms, with over one billion monthly active users for each: Facebook (core platform). WhatsApp, YouTube, and Instagram. It can also be defined as an access point used for many reasons such as collaborative projects, Enterprise Networks (SN), forums, micro blogs, photo and video sharing, social bookmarking, fun and gaming, and virtual worlds. Over the past twenty years, there has been a remarkable expansion in computer networks [1]. These networks have become an essential tool in various environments. Organizations are constructing larger networks than ever before, and connectivity with the global internet has become crucial. This trend has led to a surge in the use of computer networks and unauthorized access as well. It has been estimated that the number of SNS users globally has increased from 4.62 billion in January 2022 to 4.72 billion in January 2023 [1,2].

Over one third of the world's population uses internet services. Globally, online addiction has become a public health concern that involves compulsive engagement in social network platforms and disrupts functioning in important life domains. Moreover, the corona virus outbreak has caused in-home media consumption to increase in countries across the globe [3]. Digital media, encompassing both the internet and social media system, has become an integral part of adolescents' lives, raising concerns about its potential influence on mental health [4]. Recent studies has investigated these bidirectional relationships of digital media abuse and different mental health issues in contemporary society [5,6]. The significant factor provoking multiple mental health problems is cyber bullying, defined as sending hurt-

ful, abusive or threatening messages, images or videos via messaging platforms [7]. Recently, Centers for Disease Control and Prevention data showed that 14.9 percent of adolescents have been cyber bullied and 13.6 percent of adolescents have made a serious suicide attempt [8]. Broadly the effects can be described as: Poor sleep quality aggression, appetite abnormalities, depression and possible alcohol abuse. Young adults (age 18 to 25) have the highest incidence of mental illness of any adult age group: 25.8% compared to 22.2% for ages 26 to 49, and 13.8% for ages 50 [9]. Medical students, in particular, face unique challenges and stressors throughout their rigorous academic and clinical training [10]. Around 63 percent of Pakistani population comprises young from age 15 to 33years and need special concern [11] So far most epidemiological trials have focused above mentioned issues among developed countries and such data related to lower income countries is lacking. This study aims at evaluating the extent of social media use and influence on affective disorders, self-harm and sleep wake pattern among the medical students of South Punjab, Pakistan.

Objective of Study

Our study aims to analyze and explore patterns of mental health issues due to social media abuse among medical students.

Study Design and Location

It was a prospective type of cross-sectional cohort study conducted in Shahida Islam Medical Complex, Lodhran.

Methodology

Sampling Technique

- Printed copies of questionnaire covering all the questions were provided to participants and filled answers were collected from participants.

Inclusion Criteria

100 Students of Shahida Islam Medical Complex (MBBS, BDS, DPT) Lodhran, having access to SNS, were enrolled for study.

Exclusion Criteria

All unwilling students/ who had no access to SNS.

Data Collection and Analysis

Data was collected by distribution of questionnaires among students and the quantitative variables were analyzed through SPSS software. Mental disorders (mood and sleep–wake disorders, self-harm) were categorized according to Young's Internet Addiction Test (YIAT) [12], and Beck's Depression Inventory (BDI) [13], both are internationally recognized and reliable. The percentages were calculated for qualitative variables and quantitative variables. Pie- graphs and bar charts were plotted and tables were made. Bivariate analysis included the use of Chi-squared test and the Pearson correlation test, for categorical variables. The chi square test was applied to the relationship between the time duration of social media use and thoughts of self-harm. The level of confidence was kept at 0.05.

Results

According to our study, smart phone was the frequently opted device to access Social Network Site (SNS) and the easily accessible SNS was WhatsApp. The most frequently visited website for longer duration was Instagram (56.8%) followed by WhatsApp (21.6%) as shown in Table 1. The Figure 1 shows that the maximum time spent on SNS was 5-6 hours in 29 % of individuals while 25 % of subjects spent 7-8 hours on average. The p- value, obtained by Pearson chi square evaluation test, was 0.630 and found to be insignificant. The negative impacts of digital use was depressive disorders in 41% of participants while 11% (usual) and 15% (often) reported thoughts of self-harm or suicide as highlighted in (Figures 2-4) reflects that 36 % encountered lack of sleep/insomnia while 25 %were sleeping more than 9 hours per day.

Table 1: Dominant social media sites by usage duration.

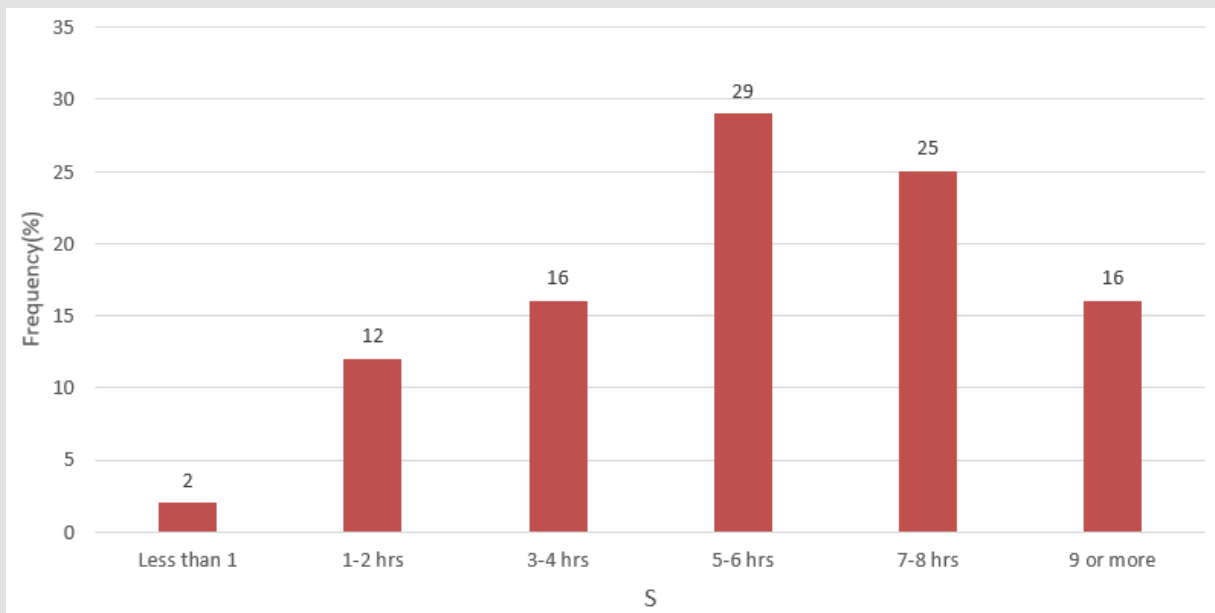|		Average time	Percent
Most Time-Consuming Social Media Site	Facebook	8	6.40%
	Twitter	9	7.20%
	TikTok	6	4.80%
	Instagram	71	56.80%
	WhatsApp	27	21.60%
	Others[a]	4	3.20%
Total		125	100.00%

Note: a=Reddit, Discord, YouTube

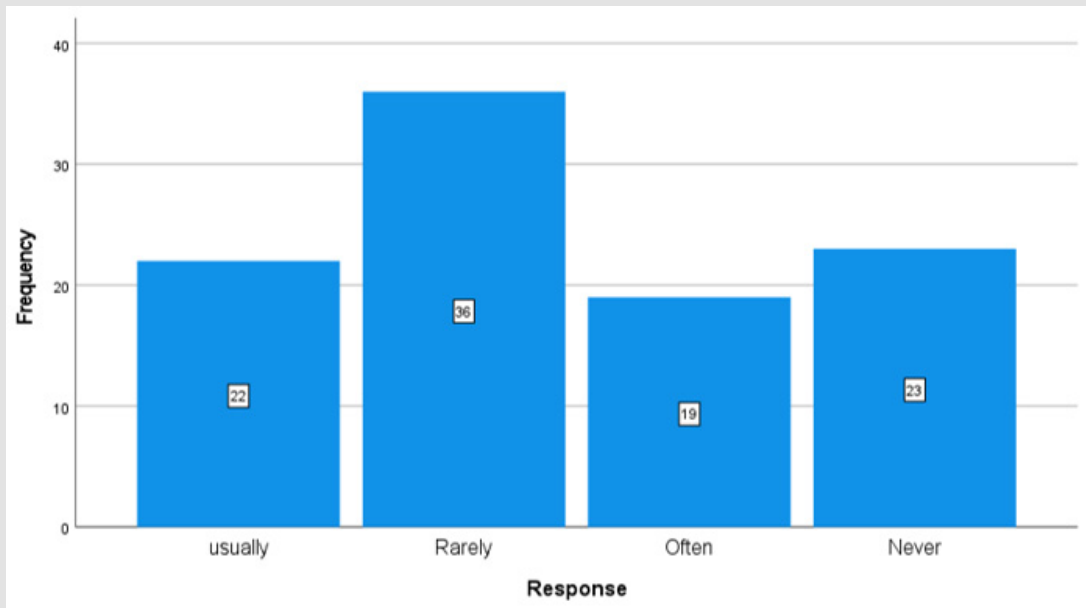**Figure 1:** Time spent on social media altogether.

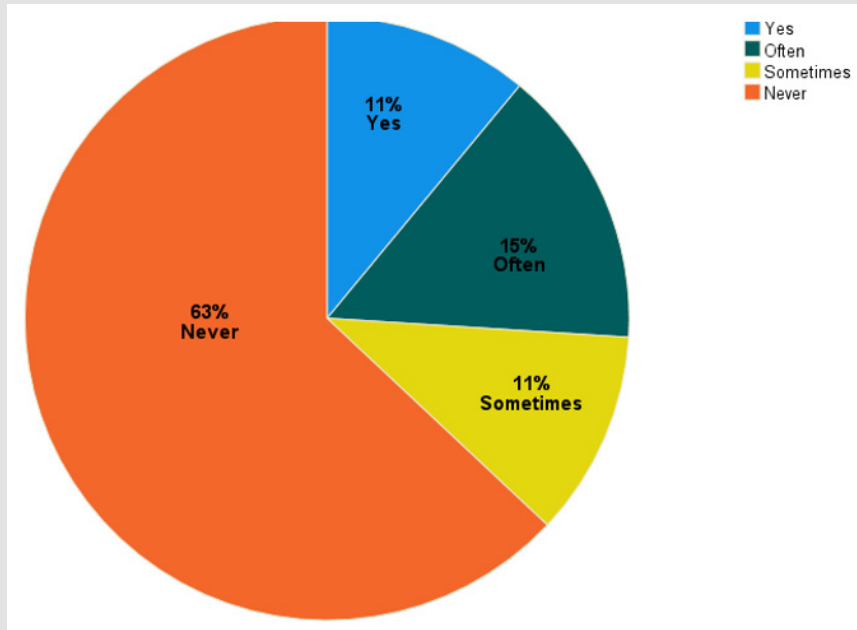**Figure 2:** Unraveling the threads: Depression arising from SNS abuse.

Figure 3: Exploring the relationship between SNS abuse and suicidal thoughts.
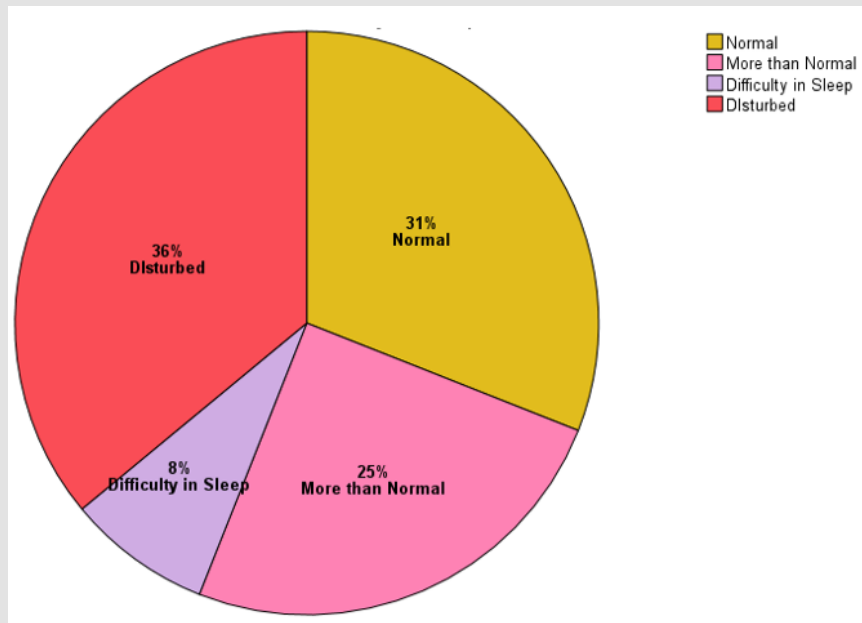

Figure 4: Examining the impact of SNS abuse on sleep pattern.

Discussion

The pervasive use of social media has become an integral aspect of contemporary society, offering unprecedented connectivity and access to information. Most of the world's adolescents are living in Asia [14] and may face unique racial, social, geographical and psychological issues in his particularly among younger population. The recent existing research suggests that medical students can also be at increased risk for psychological distress, including depressive and anxiety symptoms and information overload may negatively affect certain behavior aspects as they are in learning phase [15,16]. Our study was aimed to investigate this paradigm. Our results suggest that the majority of the respondents (89.1 %) used social media on daily bases and most preferred easily accessible choice was WhatsApp followed by Instagram and Facebook. The most frequently visited website for longer duration was Instagram (56.8%) followed by WhatsApp. Some of our results are comparable to a large Pakistani survey which estimated that WhatsApp was their most commonly used site (87.3%), followed by YouTube (63.3%), Facebook (62.7%), and Twitter (26.6%) [17]. About 93.1% of their participants used WhatsApp several times a day, whereas 58% said they use Facebook and YouTube several times a day. Concerning average duration of time spent online, our results revealed that 25% of our subjects spent 7-8 hours on average while 29 % spent 5-6 hours online. It is in accordance to Nadia and J Maryam et al. They reported that 28.2% of their people spend 6 hours while 23.1% spent 10 hours daily on their phone/laptop. Up to 42% of their subjects preferred to use WhatsApp the most on a daily basis. 20% of their participants were spending 10 hours or more each day for the WhatsApp with the proportion being 5.8%, 4.6%, and 2.8% for YouTube, Face book, and Twitter, respectively [18].

The obvious reason for greater online engagement might be due to Covid pandemic as most individuals were confined indoor and working online. The significant finding of our study was collectively feelings of depression related to digital era. This is in accordance to multiple trials. A recent study by Jonathan S serunkuuma et al revealed that 19 % of their 269 medical students at a Ugandan public university, had usual and 11% had very often episodes of depression attributed to SNS. Among their subjects, 16.73% had moderate to severe depression symptoms [19]. A cross-sectional study was conducted among 200 undergraduate students of a medical college in Kolkata. Nearly 24% reported depression and 68.5% had state anxiety. STAI and BDI scores were significantly (P < 0.05) higher among students who used SNSs for 4 h or more [20]. Contrary results were obtained by Tajjamul, S and the majority of their respondent said that they do not have any mental health issues with heavy use of social media. 43.7% of their subjects had unusual, disturbed sleep time [21]. The worrying result of our research survey was deliberate self-harm or suicidal thoughts in 11% of our subjects. Same results were obtained by Canadian research that identified the 11% of their participants between ages 15

and 24, were having behavior commonly associated with depression and involved in suicide attempts attributed to social media [22] Ansar Farrkh reported that frequency of depression (mild-severe) was 59.74% (95%CI=53.11-66.12), profound and slight addiction to the Internet was found in 9.09% (95%CI=5.71-13.56) and 41.99% (95%CI=35.55-48.64) of students, respectively [23].

As concerning depression related to digital abuse, our results are in close approximation to Turkish investigation which reported that prevalence of depression was 39% in their study population [24]. Another international study also reported a statistically significant association between Internet addiction and depression with OR = 1.9 (95% CI= 1.3–2.7[25]. Consistently thoughts of committing self-harm with another 11% saying that suicidal thoughts were frequent, highlights the dark side of this digital revolution Our findings are also in accordance with information from a meta-analysis of 24 studies in 15 countries, reported that the overall pooled crude prevalence of suicidal ideation was 11.1% [26] The study also indicates a strong correlation between excessive social media use and deteriorating mental health with 42% people saying that they consistently feel bad about themselves. There may be an independent association between problematic use of social media/internet and suicide attempts in young people [27]. However, the direction of causality, if any, remains unclear. Moreover, the addictive nature of social media disrupts essential aspects of daily life, included disrupted sleep patterns which was clearly indicated when our data was analyzed and 20 % of the subjects saying that they had less sleep rhythm or insomnia and another 23% saying that they slept for more than 9 hours both indicating abnormal sleep patterns.

The constant exposure to curate content, cyber bullying, and the pressure to conform to societal expectations online contribute to increased levels of aggression with 23% of the people saying that they usually get agitated when someone asks them to limit social media use. A similar devastating impact was also when it came to appetite with 36% of the people saying that they had the problem of overeating and another 11% people said that they ate less than normal. As concerning sleep wake disturbances, our results are comparable to Al Suwayri, Saad who revealed that 72.9% and 63.5% of their subjects (during the week or at the weekend, respectively) had poor quality sleep and social media addiction (27.1% addicted to three or more platforms) [28]. A sample of 569 Chinese social media users showed a significantly higher level of suicidal ideation (t563.64=5.04; P<.001; two-tailed) and more suicide-related social media use behaviors, which included attending to suicide information (t567=1.94; P=.05; two-tailed), commenting on or reposting suicide information (t567=2.12; P=.03; two-tailed), or talking about suicide [29]. Another research, particularly focused during the COVID-19 pandemic, revealed that social-media addiction was in 22.3%, poor sleep quality in 80.8%, eating disorder risk in 4.9%, game addiction in 4.5%, and moderate-to-high stress in 71.4% [30].

Concerning sleep pattern, among 2749 participants of the questionnaire, 67.6% scored above 30 in the IAT, suggesting the presence of an internet addiction, and 73.5% scored equal and above 5 in the PSQI, suggesting poor sleep quality [31]. Internet addiction was found to be significant predictors of poor sleep quality. In another study, participants are students of MNR Homeopathic Medical College of age group 18-26; the purpose of this study was to examine the usage of social media and its impact on sleep quality. The questionnaire was formulated by using Pittsburgh Sleep Quality Index Scale {PSQI}. The regression analysis was done, $R2 = 0.0344$, $F (1,211) = 7.528$, $p = 0.0065$ ($p < 0.05$), which shows a statistical relationship between hours spent online and sleep quality [32], but only short period of one month was studied. Most of above-mentioned research studies have verified our results and reported the multifaceted impact on mental health, appetite, sleep, along with urgent need for understanding intricate relationship between social media use and well-being, calling for proactive interventions and awareness campaigns to mitigate the adverse consequences of SNS abuse. Every time a person performs a certain pleasurable activity, our brain is wired to perform such action against all odds since higher dopamine levels created a sense of fulfillment and happiness.

The person performs such activities repeatedly until a person makes such habit a part of their life and he enters a state of no return [33]. It takes almost 90 days for a person's brain to rewire itself to normal dopamine levels in the absence of pleasurable external stimuli. During this time, the person will face mood swings, irritability, and a constant urge to get back to the addictive substance.

Conclusion

In conclusion, this research has illuminated the untoward and inappropriate impact of excessive SNS use on crucial aspects of adolescents' mental well-being in this vulnerable demographic. The constant exposure to curate images and unrealistic standards on social media may contribute negative effects on their cognitive function, emotional regulation, and overall resilience. Moreover, the prevalence of depression among teens cannot be overstated and it is influenced by a complex interplay of multiple factors, with social media emerging as a significant contributor. The limitation of study is that it was single centered. Other factors or life stressors leading to depression or sleep disturbances could not be sorted out. Insomnia can also be a marker of depression and anxiety as well.

Recommendations

1.   Encourage medical students to set specific time limits for social media usage and establish designated "offline" periods to promote uninterrupted sleep and relaxation [34].

2.   Integrate mindfulness and relaxation training into the medical curriculum to help students manage stress, improve sleep quality, and enhance overall well-being and also promote the use of relaxation apps or techniques that can aid in winding down before bedtime [35].

3.   Provide guidance on creating a conductive sleep environment and maintaining a consistent sleep schedule by minimizing screen exposure before bedtime.

4.   Integrate exercise opportunities into the medical school schedule, such as fitness classes or designated workout spaces along with regular physical activity.

5.   Making imperative for parents, educators, and policymakers to collaborate on effective strategies to incorporate routine mental health check-ins as part of the academic calendar, to identify and address emerging issues promptly.

Dedication

This research endeavor is acknowledged to the accolades of knowledge, years of effort and grooming by my parents for the cause and that have paved the way for a deeper understanding of the medical subject.

Conflict of Interest

We hereby confirm that no conflict of any interest exist among authors.

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