



Mental Health Problems and Social Media Exposure amid the COVID-19 Pandemic

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Abstract

The motive behind this survey was to investigate the association between social media exposure (SME) and mental health issues of students such as anxiety and depression amid the COVID-19 pandemic. Data was collected from 567 Pakistani students aged 16-30 through an online survey. Contradictory to some of the recent similar studies, evidence from the analysis indicates that mental health issues like depression and anxiety were not related to SME amid the COVID-19 pandemic. The prevalence rates of anxiety and depression were found to be 46.4% and 61% respectively. The high percentage of depression and anxiety found in surveyed students indicated that the government needs to pay special attention to mental health problems like depression and anxiety amid the COVID-19 pandemic.

Keywords: COVID-19; Mental health; Social media exposure; Depression; Anxiety

Introduction

The outbreak of Coronavirus disease (COVID-19) was first identified in the Wuhan province of China, in December 2019 [1]. WHO received further information about the virus from NHC China on January 11, 2020. Within a few weeks of its outbreak, the COVID-19 pandemic was declared as a public health emergency of international concern [2]. Consequently, most countries temporarily closed their businesses and academic institutions to suppress the spread of COVID-19 pandemic [3]. The worldwide closures of educational institutions impacted 60% of the world's student population. Even when governments around the world have now started to open educational institutions, more than 1.3 billion students are still affected by the closures of academic institutions across the world [4].

The COVID-19 pandemic has affected more than 209 countries including Pakistan and being the fifth populous

country of the world, Pakistan is at the highest risk of the pandemic [5]. As of June 29, the number of confirmed infections cases in Pakistan has risen to 206,512 [6]. The federal government has estimated that the total number of confirmed infections cases could reach up to 1.2 million by the end of July 2020 [7]. The government of Pakistan initially closed all main sectors including educational institutions and governmental offices. Later, the government introduced the concept of specific smart lockdowns in the infected hotspots of the country.

We are living in a technology-driven world, where there are various means of acquiring information including online social media platforms that hold unbelievable rapidity, reach, and diffusion. Worldwide, over 3.80 billion people utilize social media sites on a daily basis, and mostly for a longer period [8]. In the time of health emergencies, people greatly rely on online digital platforms to stay informed and acquire accurate and timely information so that they can make informed decisions about their health and well-being. As educational institutions are still closed across the country, social media platforms have noticed a surge in the number of users from Pakistan [9]. During such critical time, the un-availability of trustworthy information can influence the attitudes and behaviors of people regarding the pandemic [10].

The Covid-19 pandemic has not only resulted in a high rate of mortalities around the world but has caused psychological unrest and mental health issues [11]. Information and controversial theories about COVID-19 are constantly evolving and are causing panic among the general public regarding the outbreak. In the days of the pandemic, media can play an important role by providing accurate and timely information; provide emotional and mental support to make people feel connected [12-14]. Media content is usually full of fear and trauma and can have harmful consequences for consumers who are not able to differentiate between true and false information [15]. Since the last two decades, social media has gained popularity and has replaced traditional media [16]. The different forms of online social networking platforms are helpful sources of information during emergencies. However,

intense exposure to social media content can create harmful psychological issues [17].

In today's world, where social media platforms are widely used by the general public, they are also perceived as the major sources of fake news and information [18]. People are constantly searching for online information to better understand the situation of their surroundings but on the other side more exposure to online content is creating mental health issues. Within few days of the outbreak in China, a wave of panic was noticed on social media platforms as false news was travelling faster than the Coronavirus itself [19,20]. Social media platforms have been flooded with false and unauthentic news about the COVID-19 and that resulted in baseless fears among the general public [21]. The uncertainty of situation, negative and fake information on social media about Covid-19, has created detrimental mental health issues like fear, stress, depression, and anxiety [22].

The substantial amount of fake news and information coming from various online sources related to COVID-19 has exposed individuals to high anxiety and depression [23]. This bombardment of misinformation can create stress and anxiety in individuals [24] and can lead to serious mental health issues [25]. As students are already deprived of campus socialization and face-to-face engagement with instructors and class fellows [26], most of them are exposed to intense social media exposure (SME). Studies have reported that the high prevalence of anxiety and depression amid COVID-19 is positively correlated with SME [27]. According to the WHO regional office for Europe, stress and anxiety are the main psychological impacts of COVID-19 (WHO, 2020). Furthermore, the use of drugs, loneliness, harmful alcohol, self-harm, and suicidal behaviors are also expected to rise. Limited studies have been conducted to find out the association between SME and mental health issues amid COVID-19. To the best of our knowledge, no research studies have examined the relationship between anxiety, depression, and SME amid the COVID-19 pandemic in Pakistan. The study aimed to find out the association between SME and mental health problems of students like anxiety and depression amid the COVID-19 pandemic.

Materials and Methods

Design and participants

The study was conducted online from June 24 to June 26, 2020, 119 days after the first confirmed COVID-19 case was reported from Pakistan. In total, 567 Pakistani students aged 16-30 participated in the survey. A survey study with a sample size of over 500 has a 5% margin of error and a 95% confidence level [28]. The participants included 386 (66.9%) female as well as 190 (32.9%) male students. 14% (n=81) of intermediate (12th grade), 59.1% (n=341) of bachelor, and 26.9% (n=155) of master students participated in the online

survey. The participants of the study were invited to participate in the survey-based study through Google Forms.

Measurements

Depression: Depression level of students was measured through the Urdu version of the WHO-Five Well-Being Index (WHO-5). Since its publication in 1998, WHO-5 is the most widely used questionnaire evaluating psychological well-being. The index is a reasonably valid depression screening tool and has been widely applied as a standardized well-being scale in a wide range of research fields [29]. The index includes five worded items (positive). The total score of index ranges from 0 to 25, 0 represents worst and 25 represents the best quality of life. A total score below 13 is a sign for testing for depression under ICD-10.

Anxiety: Anxiety levels of students were measured through the translated form of the generalized anxiety disorder scale (GAD-7). GAD is among the most prevalent mental illnesses as reported in outpatient practice [30]. GAD includes seven worded items (negative). The total score ranges from 0 to 21, a summed score of 10 or greater indicates a reasonable cut point for identifying cases of anxiety [27].

Social media exposure (SME): SME of students was measured by questioning how frequently study participants have been subjected to news and information about COVID-19 over the past two weeks on social media platforms, such as Facebook, Twitter, WhatsApp, YouTube, etc. Response options for the participants were "very often", "often", "sometimes", "once in a while" and "never". To better understand the impact of SME on depression and anxiety and due to less proportion of "never" and "once in a while", SME variable was divided into high SME (often" and "very often") and low SME ("never", "once in a while" and "sometimes").

Analysis

The data collected from students were analyzed through SPSS. Spearman's correlation coefficient and one-way MANOVA test were used to find the association between SME, anxiety, and depression.

Results

The results of the analysis confirmed that out of 577 participants, 72.5% (n=419) were intensely exposed to news and information about COVID-19 on social media ("Often" and "Very Often"). According to the parameters set WHO-5, the survey found that about 61% of surveyed students were suffering from serious depression, whereas about 46.4% of students were suffering from anxiety (GAD-7).

The above **Table 1** shows the mean and standard deviation of depression and anxiety in case of low and high social media exposure (SME). The mean of depression in case of low SME is greater than in the case of high SME, whereas the mean of

anxiety in case of high SME is slightly greater than in case of low SME.

Table 1: Descriptive statistics.

SME		Mean	Std. Deviation	N
Depression	Low SME	12.0696	6.48380	158
	High SME	10.8854	5.95367	419
	Total	11.2097	6.12055	577
Anxiety	Low SME	8.7848	5.99824	158
	High SME	9.4893	5.59235	419
	Total	9.2964	5.70975	577

The coefficient of correlation as shown in **Table 2** between SME and Depression is $-.135$, indicating that both the variables are weakly negatively correlated. Similarly, the value of $r = .117$ shows that there is a weak or somehow negligible positive

correlation between SME and anxiety. Thus, it can be concluded that there is no strong association between social media exposure of students and their mental health issues like anxiety and depression.

Table 2: Correlations.

			SME	Anxiety	Depression
Spearman's rho	SME	Correlation Coefficient	1.000	.117**	-.135**
		Sig. (2-tailed)		.005	.001
		N	577	577	577
	Anxiety	Correlation Coefficient	.117**	1.000	-.540**
		Sig. (2-tailed)	.005		.000
		N	577	577	577
	Depression	Correlation Coefficient	-.135**	-.540**	1.000
		Sig. (2-tailed)	.001	.000	
		N	577	577	577

**Correlation is significant at the 0.01 level (2-tailed).

As mentioned earlier 61% of surveyed students were suffering from serious depression, whereas about 46.4% of students were suffering from anxiety. People excessively use social and digital media sources for news and information amid COVID-19. Although, various other factors can contribute to anxiety and depression amid COVID-19 such as social distancing that can make people feel isolated and lonely. Fear and worry about your health and the health of your loved ones, changes in sleep or eating patterns, your financial

situation or job, loss of support services you rely on, increased use of alcohol, and other harmful substances can also contribute to stress and anxiety.

One-way MANOVA test was run to cross-check the results of the data. As we can see from **Table 3**, the "Sig." value (Wilks' Lambda row) of $.114$, which means $p > .0005$. Therefore, we can conclude that depression and anxiety are not dependent on social media exposure ($p > .0005$).

Table 3: Multivariate Tests.

Effect		Value	F	Hypothesis is df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^c
SME	Pillai's Trace	.008	2.183	2.000	574.000	.114	.008	4.365	.446
	Wilk's Lambda	.992	2.183	2.000	574.000	.114	.008	4.365	.446
	Hotelling's Trace	.008	2.183	2.000	574.000	.114	.008	4.365	.446

	Roy's Root	Largest	.008	2.183	2.000	574.000	.114	.008	4.365	.446
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Discussion

In the present study, we investigated the relationship between SME and mental health-related issues of students like anxiety and depression amid the COVID-19 pandemic. The findings of the study suggest that exposure to news and information about COVID-19 through social media is not associated with increased symptoms of depression and anxiety. The rapid spread of the COVID-19 virus throughout Pakistan and its quick transmission in many other countries were unprecedented and extraordinary. Although the majority of the surveyed students were exposed to the high intensity of social media, spearman's correlation coefficient and one-way MANOVA test suggested that the exposure was not affecting the depression and anxiety levels of students.

As mentioned earlier various other factors can contribute to anxiety and depression amid COVID-19. Factors such as social isolation can cause feelings of loneliness and can contribute to anxiety and depression [31,32].

Limitations and Recommendations

As data were collected through self-report questionnaires, the main limitation of the study is the possibility of providing invalid answers by students. Respondents usually avoid answering sensitive questions truthfully due to social desirability bias. We have only used one variable (SME), as the predictor of depression and anxiety amid COVID-19. Future studies should investigate the association of depression and anxiety with other important factors such as mainstream media exposure, lack of campus socialization, loneliness, and pressure of online learning during the COVID-19 pandemic. The results of the study are based on the opinion of students mostly from urban areas, future studies should also include students from rural areas.

Conclusion

In conclusion, our findings suggested that there is a high prevalence of depression and anxiety among Pakistani students, however, these mental health issues were not related to SME amid the COVID-19 pandemic. Spearman's correlation coefficient shows that there is a weak or somehow negligible positive correlation between SME and anxiety, whereas a weak negative correlation was found between SME and anxiety ($r = -.135$). One-way MANOVA test also confirmed that depression and anxiety are not dependent on social media exposure amid COVID-19 pandemic ($p > .0005$). The high percentage of depression and anxiety found in surveyed students indicated that governments around the world need to pay special attention to mental health problems like depression and anxiety amid the COVID-19 pandemic.

Conflicts of Interests

The author(s) declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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