
A cross-sectional study of the association of social media use during the pandemic to the psychological well-being status of medical students in a private tertiary institution

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Abstract

Introduction Lockdowns and quarantine measures during the pandemic have led to increased media consumption among students worldwide. This study aimed to determine the association between the status of the psychological well-being of medical students in a private tertiary institution and social media use during the pandemic.

Methods This is cross-sectional analytical study which included medical students in a private tertiary institution. SONTUS was used to measure social media usage, while Ryff's Scales of Psychological Well-Being was used to assess the psychological well-being. PRR and Chi-square test were used for data analysis.

Results There were 317 respondents in the study. Based on the results of SONTUS, there are 114 respondents who have high usage. For the Ryff's scale, there were 76 respondents who have low well-being scores. The computed Pearson Chi-square has an associated probability (p-value) of 0.855 which is more than the set significance level of 0.05. For the PRR, the computed value was 1.04.

Conclusion There was no association found between the psychological well-being status of medical students in a private tertiary institution and social media use during the pandemic.

Key words: social media use, well-being, pandemic

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Humanity has used the internet for a wide range of purposes since its inception. It has been used as a tool to help individual with various needs in their daily lives. The popularity of social media sites is clear, as it has permeated our daily lives to the point where it is now pre-installed in mobile phones.¹ The COVID-19 pandemic has disrupted many people's lives and brought the world to a halt. This has resulted in an increase in media consumption among students worldwide.² Problematic use of social media can be an indicator of low well-being as it can lead to psychological distress and maladaptive coping mechanisms.^{3,4} During the COVID-19 pandemic,

students learned online using video conferencing apps such as Zoom, Google Meet, and others. As a source of entertainment and a way to connect with others, social media usage has skyrocketed during the pandemic. Thus, this raises the question of whether there is a link between social media usage and student's well-being .

The extended lockdown period has led to worsening psychological and learning behaviors of medical students.⁵ Some studies reported a slightly lower average quality of life due to the lockdown and increased perception of stress notably due to changes brought by the pandemic, leading to worsening health habits and a sedentary lifestyle.⁶ During the start of the pandemic, the need for mandatory lockdown and self-isolation has changed people's way of socializing, including, the increase in the use of social media.⁷ Other studies have suggested that time spent on social media increased symptoms of anxiety and depressed mood.⁸ Frequent social media use was also determined to be a risk factor for loneliness and low well-being qualities among adolescents which subsequently reduces school performance.³ Currently, the increasing awareness of mental health in the community has prompted investigations into the factors influencing individual well-being. It is pertinent to examine the relationship between social media use and well-being, particularly in the context of the ongoing pandemic experience. It has been a considerable duration since the lockdown began, and its impact has been felt by everyone involved.

This study examined the potential impact of social media on the psychological well-being of medical students during the pandemic. By providing data on these issues among students, effective policy implementation can be achieved to alleviate their challenges, leading to a more supportive online learning environment for all stakeholders. Specifically, this research aimed to assess the association between social media use during the pandemic and the psychological well-being of medical students at a private tertiary institution.

The study evaluated the psychological well-being status of medical students using Ryff's Scales of Psychological Well-Being, considering dimensions such as autonomy, positive relations with others, personal growth, self-acceptance, environmental mastery, and purpose in life. Additionally, the prevalence risk ratio of well-being status was calculated and analyzed

concerning the use of social media, including variables such as frequency and duration of use, alongside the scores on Ryff's Scales of Psychological Well-Being for first to fourth year medical students.

Methods

This study utilized a cross-sectional analytical research design to assess the strength of the association between social media use and the low psychological well-being of the first year to fourth year medical students in a private tertiary institution who were currently enrolled in the Academic Year 2022-2023. This study was approved by the UERMMMCI Research Institute for Health Sciences Ethics Review Committee.

The data were collected using Google Forms and distributed to the selected participants through a randomization process based on their class numbers. The study utilized two questionnaires which are Ryff's Scales of Psychological Well-Being and the Social Networking Time Use Scale (SONTUS).

The Ryff's Scales of Psychological Well-Being, an 18-item questionnaire, was used to measure the state of psychological well-being of medical students.⁹ The composite scores were calculated from the six individual scales of Ryff's scales. The answers in the test were summed up and compiled to get the percentiles. Individuals in the 25th percentile were categorized as having low well-being, while those in the 50th and 75th percentile were grouped together and interpreted as having a high well-being score. The Social Networking Time Use Scale (SONTUS), a 29-item questionnaire, was divided into five factors: relaxation and free periods, academic-related periods, public-places-related, stress-related periods, and motives for use.¹⁰ In this study, the global SONTUS scores were interpreted as follows:

- Low user of social media is defined as the results with a SONTUS score of 5 to 9. A score of 10 to 14 indicates an average user of social media. A high user of social media is defined as results with a SONTUS score of 15 and 19. A SONTUS score of more than 19 indicates an extremely high user of social media.
- The term low usage of social media in this study refers to actual low and average SONTUS scores grouped.
- The term high usage of social media as used in this study refers to the actual SONTUS

scores with high use and extremely high use classified together.

A Chi-square test was performed to assess the association between social media use and psychological well-being. Additionally, to further quantify the relationship between the variables, the prevalence risk ratio was calculated.

Results

This study comprised a total of 317 respondents. The average age of the participants was 23 years old, and the majority were female (68.77%; n=218). Among the 317 respondents, 98 (31%) were freshmen, 81 (26%) were sophomores, 83 (26%) were juniors, and 55 (17%) were seniors (Table 1). Stratified random sampling was employed to achieve the necessary minimum number of respondents for each year level. Specifically, 94 students were required for year level one, 46 students for year level two, 79 students for year level three, and 82 students for year level four (Table 2).

However, among the 82 fourth-year students required, only 55 responses were obtained, while 27 students did not respond. This results in a non-response rate of 8.97%.

Table 1. Demographics of the study respondents (n=317).

Characteristics	n (317)	%
Gender		
Male	942	9.65%
Female	218	68.77%
Prefer not to say	5	0.016%
Year Level in College of Medicine		
1st year level	98	31%
2nd year level	81	26%
3rd year level	83	26%
4th year level	55	17%

Table 2. Breakdown of needed respondents per year level.

Year Level	Total No. of Students	Number of Students Needed
I	424	94
II	209	46
III	359	79
IV	374	82

Social Networking Time Use Scale (SONTUS)

Facebook emerged as the most utilized social media platform among the respondents, with 309 (97.47%) participants using it. The usage of other platforms was as follows: Instagram (89.59%), Twitter (65.30%), Pinterest (32.17%), WhatsApp (4.73%), Myspace (0.31%), and other unspecified social media platforms (8.20%) (Table 3).

Table 3. Social media platforms used by medical students.

Social Media Platforms	Respondents	%
Facebook	309	97.47%
Instagram	284	89.59%
Twitter	207	65.30%
Pinterest	102	32.17%
WhatsApp	15	4.73%
Myspace	1	0.31%
Other	26	8.20%

Additionally, the study measured the preferred social media platforms among the respondents. Facebook was the most preferred platform, chosen by 47.6% of the participants, followed by Instagram (31.2%), Twitter (12.3%), other social media platforms (8.2%), and lastly, Pinterest (0.6%) (Table 4).

Table 4. Most used social media platforms used by medical students.

	Frequency	Valid Percent	Valid Percent	Cumulative Percent
Facebook	151	47.6	47.6	47.6
Instagram	99	31.2	31.2	78.9
Twitter	39	12.3	12.3	91.2
Other	26	8.2	8.2	99.4
Pinterest	2	0.6	0.6	100.0
Total	317	100.0	100.0	

The distribution of medical students based on the time spent on social media per year level is depicted in Figure 1. Among the first-year respondents, 63 were categorized as average users of social media, while 35 were classified as high users of social media. For second-year respondents, 55 were considered average

users, and 26 were considered high users. In the third-year group, 54 were identified as average users, and 29 were classified as high users. Lastly, among fourth-year respondents, 31 were categorized as average users, and 24 were classified as high users of social media. In the research, a total of 203 respondents were identified as having low usage of social media based on their SONTUS global score. This indicates that they use social media less frequently and for shorter durations. On the other hand, 114 respondents were classified as having high usage of social media based on their SONTUS global score (Figure 2). This suggests that they use social media more frequently and for longer durations.

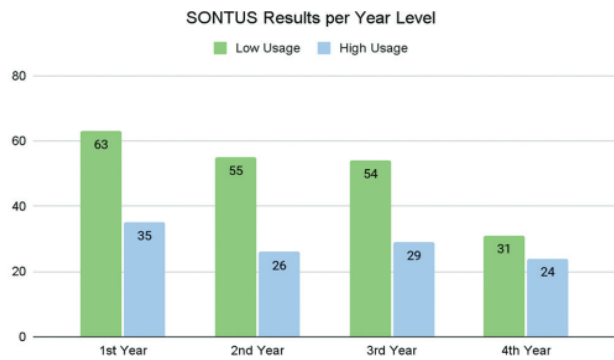


Figure 1. Distribution of medical students based on the time spent using social media per year level (SONTUS).

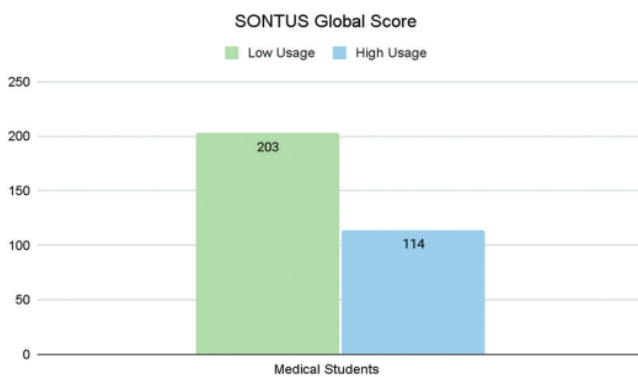


Figure 2. Distribution of the total number of medical students based on the time spent using social media.

Ryff's Scale of Psychological Well-being

The average raw scores of the respondents in the different domains were as follows: For autonomy,

students scored 4.19, for environmental history, the average score was 3.82, for personal growth, the mean score was 5.16, for positive relations with others, the score was 3.67, for purpose in life, the score was 4.17, and finally, for self-acceptance, the mean score was 4.33. Remarkably, the domain of personal growth obtained the highest average raw score, implying that respondents may experience a sense of ongoing development and self-improvement (Figure 3).

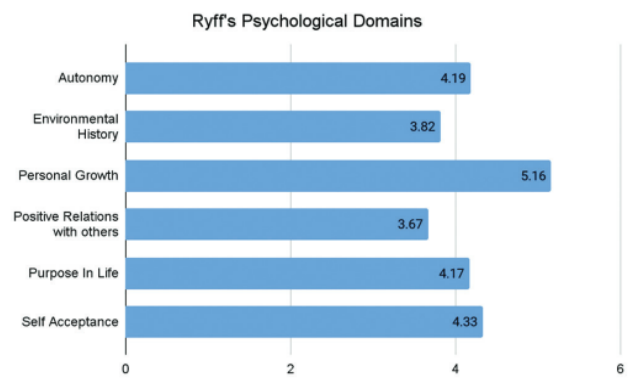


Figure 3. Mean scores of Ryff's Scale of Psychological Well-being per domain.

To provide a comprehensive understanding of the respondents' well-being scores, the well-being scores of different year levels were depicted in Figure 4. Among the freshmen, 74 were shown to have high well-being, while 24 were considered to have low well-being. For sophomores, 64 respondents demonstrated high well-being, while 17 were categorized as having low well-being. Among juniors, 60 exhibited high well-being, while 23 were identified as having low well-being. Lastly, there were 43 senior students with high well-being and 12 with low well-being scores.

The average global score of all respondents was 76, with a median score of 76 as well. The fact that the mean and median are the same suggests an even distribution, as indicated by the histogram (Figure 5).

The compiled global scores of the respondents revealed that the 25th percentile was 70, the 50th percentile was 76, and the 75th percentile was 83 (Table 5). With the 25th percentile set at 70, global scores lower than 70 were classified as low well-being, while scores greater than or equal to 70 were considered indicative of high well-being.

In this study, 241 respondents were categorized as having high well-being, as their global scores were equal to or above 70. Conversely, there were 76 respondents with global scores below 70, indicating that they were classified as individuals with low well-being.

Table 5. Global score computation of Ryff's Psychological Well-being Scale.

Mean	Median	Std. Deviation	Percentiles	
76.0883	76.0883	76.0883	25	70.0
			50	76.0
			75	83.0

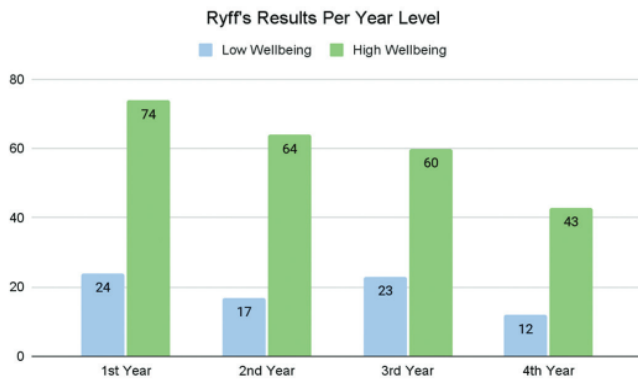


Figure 4. Mean scores of Ryff's Scale of Psychological Well-being per year level.

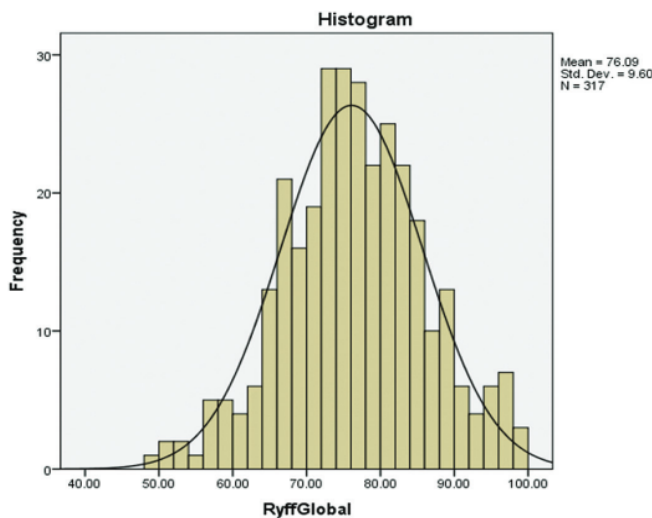


Figure 5. Distribution of respondents according to their global scores.

Chi-Square Test and Prevalence Risk Ratio

In the context of the prevalence risk ratio, the calculated value was 1.04 (Table 6). Given that the PRR value is proximate to 1.0, it can be inferred that there is no significant association between the development of low psychological well-being and high social media exposure.

Furthermore, among the respondents who are high users of social media, 24.5% of respondents have low well-being while 75.44% have high well-being. For the low users of social media, 76.35% have high well-being.

Discussion and Conclusion

With the increasingly prominent role of social media in the lives of medical students during the pandemic, understanding the effects of social media on their psychological well-being is crucial.¹¹ In this study, there was no association found between the psychological well-being status of medical students and social media use during the pandemic. This was contradictory to the results gathered by a study that students with higher social media addiction scores had a greater risk of experiencing mild depression.¹² The slight increase in the prevalence risk ratio may be indicative of the possible risk of low psychological well-being with high exposure to social media – suggesting that the relationship between the two variables cannot be completely dismissed.

In addition, twenty-eight medical students who have high social media use were found to have low-

Table 6. Distribution of respondents with low and high well-being scores based on their social media use.

Social Media Use	Low Well-being		High Well-being		Total
	No.	%	No.	%	
High User	28	24.56%	86	75.44%	114
Low User	48	23.65%	155	76.35%	203

being scores. Previous studies have provided evidence that high social media use may be harmful to mental health.^{5,6} For instance, a recent study in Wuhan suggests that frequent social media exposure has been positively associated with a high prevalence of mental health problems.¹³ Another study further corroborates this finding stating that university students in Indonesia tend to have a greater risk of experiencing mild depression.¹²

Social media use can also be a source of stress. Stressful content can easily have a negative effect on the social media user as observed during the start of the pandemic when uncertainties about the future are reported and an increase in fake news, and hoaxes also present.^{3,12} Seeing this information can have possibly taken a toll on the psychological well-being of medical students.

Another common feature of social media is social envy and bitterness.¹² Social envy has also been observed in research which suggests that Facebook use has led to a decrease in subjective well-being as exhibited by respondents who negatively compare themselves to their Facebook friends. Concurrent to the findings in this study, seventy-two medical students, who have chosen Facebook as their most used application and who have low to high social media use, have also exhibited low well-being scores (Table 2).

While excessive or problematic use of social media has been associated with a negative impact on psychological well-being, studies have also shown evidence of social media use as a coping mechanism and a source of social support.³ In a similar study done on students in Mexico, they determined that social media use is a significant influencing factor in bonding social capital.¹⁴ This implies that, during a pandemic, social media enables students to continue their close relationships with family members, friends, and those with whom they have close ties.

In a similar experimental research, respondents who were allowed to use Facebook after being presented with a stressful situation reported lower levels of psychosocial and physical stress.¹¹ Similarly, university students use Facebook as a self-disclosure tool in stressful situations as well as a source of social support.¹⁵ Consistent with these findings, 86 medical students in this study were high users of social media and have high well-being scores suggesting the use as a coping mechanism and possible stress-buffer effect from online social support.

The limitations of this study should also be acknowledged. First, the survey, although convenient, was not personally supervised by the researchers to address the respondents' minor technical problems or questions. Hence, respondents may become weary when answering the survey questions which may affect the quality of their responses.¹⁶ Second, some respondent bias might also arise. Inaccurate reporting of social media use such as users reporting lower amounts of activity as excessive is seen as largely undesirable.¹⁴ Third, survey satisficing where respondents select the first reasonably acceptable option and do not take time to fully consider the entire set of options that may have been present.¹⁷ SONTUS' questionnaire has an 11-point Likert scale requiring more time to consider and recall the other options. Fourth, the timing at which the questionnaire was administered and answered could have resulted in respondents' inattention. Respondents who are busy or who have been under academic stress (e.g., upcoming examinations) could have easily chosen the most acceptable option for faster completion of the survey. Lastly, this study did not perform verification on the prevalence of existing psychological conditions in the randomized sample to assess their current well-being. This might have possibly intervened with the dependent variable. The confounding variables of this study include clinically diagnosed depression and/or anxiety, personality, and temperament. However, restrictions in the design phase (e.g., exclusion criteria) were not implemented. Psychological assessment was not feasible due to the researchers' limited expertise, and so as not to promote bias against those with undiagnosed and diagnosed mental illnesses that were stable.

In conclusion, the study showed that there is a low risk of producing negative effects on the psychological well-being of medical students through high usage of social media; however, it is important to note that no significant relationship between social media use and overall well-being was found in the study.

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