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Evaluating the Effects of Social Media on the Mental Health of DLSU-IS - Laguna Campus Grade 12 Students

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Abstract: Social media has become an integral part of the twenty-first century. Today, adolescents are one of the fastest-growing age groups for social media usage. Previous research has shown that mental health is one of the factors that is affected by the use of social media. Mental health is an individual's state of mind which includes their social, psychological, and emotional well-being. The purpose of this study is to determine if there is no difference in the mental health among social media users of Senior High School (SHS) students at De La Salle University - Integrated School (DLSU-IS) Laguna campus between male and female, STEM and non-STEM, below 18 and 18 and above, and social media usage. An online survey was administered containing the Mental Health Inventory (MHI-38) to attain a numerical score of the mental health of social media users, as well as a section to determine usage hours on social media platforms—Facebook, Instagram, and TikTok. Using T-Test, the researchers found no significant difference between males and females, STEM and non-STEM, and between below 18 and 18 and above social media users' mean MHI-38 scores. Furthermore, with the use of ANOVA, the researchers found no significant difference in the MHI-38 scores of social media users based on their Facebook, Instagram, and TikTok usage.

Keywords: mental health; social media; MHI-38; students; Philippines

1. INTRODUCTION

In an increasing world of technology, social media usage has taken individuals by storm. Social media refers to websites and online technologies that allow users to communicate with one another by allowing them to exchange information, ideas, and interests (Khan et al., 2014). Individuals use social media for various purposes, including entertainment, engagement, and information seeking (Twenge & Campbell, 2019). With this, it has changed how individuals engage, converse, and share information online, which has resulted in changes in news consumption, opinion expression, and connection development (Krasnova et al., 2019). Social media has grown in popularity, with the number of users predicted to be 3 billion by 2021 (Aarø et al., 2020). This indicates that individuals are immersed in using social media which causes them to feel its impact, specifically on their mental health. Mental health can be referred to as the lack of

mental illness or can also be defined as a state of being that encompasses the biological, psychological, or social factors of an individual that affect their mental state and capacity to perform in their environment (Bhugra et al., 2013).

Social media usage generally has negative and positive implications or effects on mental health. A relationship was found between social media use and mental health issues, with depression being the most frequently evaluated result (Keles et al., 2020). Researchers Eggermont and Frison (2015) and Jiang and Ngien (2020) discovered that Facebook, Instagram, and TikTok are associated with anxiety, negative body image, and self-harm. Similar researchers, Cambier et al. (2021) and Jaffar et al. (2019), also found that the three social media platforms are associated with harassment, social comparison, and abuse. On the other hand, researchers Lonborg and Rae (2015) and Olinski and Szamrowski (2021), found that Facebook,

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Instagram, and TikTok improve connection, help raise awareness, and spread body positivity. It is also discovered in the study of Baghbanzadeh et al. (2022) that Facebook, Instagram, and TikTok aid in boosting self-esteem and promoting mental health.

A recent study found that individuals who use social media for more than three hours a day could be more likely to experience mental health issues, especially internalizing issues (Riehm et al., 2019). In a descriptive study, it is also found that an individual's mental health, including despair and anxiety, is being impacted by increased use of social media and too much time spent on social networking sites (Rajesh & Priya, 2020). However, other studies claim that there is little to no effect on the time spent on social media and mental health issues. When looked at the individual level, research found that greater social media use was not linked to higher mental health problems across development (Coyne et al., 2020). Another study also found that increases in depression are slightly correlated with increased social media use (Brunborg & Andreas, 2019).

The study will be utilizing the Mental Health Inventory (MHI-38), developed by Veit and Ware in 1983. It is a tool designed to assess mental health conditions and includes six domains: Anxiety, Depression, Loss of Behavioral/Emotional Control, General Positive Affect, Emotional Ties, and Life Satisfaction (Al Mutair et al., 2018). The MHI-38 scale, which contains 38 items, can be used to calculate a single high-level summary score of a person's mental well-being, with higher scores indicating greater psychological well-being and less psychological distress. The study of Zainab et al. (2022) interpreted the MHI-38 scores into ranges through variables. For anxiety, the low range is 9-24, moderate is 25-39, and high is 40-54. For depression, the low range is 4-10, the moderate is 11-17, and the high range is 18-23. The low range for loss of control is 9-23, the moderate is 24-38, and the high is 39-53. The low range for emotional ties is 2-5, the moderate is 5-8, and the high is 8-12. For life satisfaction, the low range is 1-2, moderate is 2-4, and high is 4-6. The questionnaire has been used in previous studies and has demonstrated good internal consistency and acceptable reliability measures (Al Mutair et al., 2021). This research on the mental health of grade 12 students benefits from utilizing the MHI-38 as a research technique due to its focus on mental health.

The purpose of this study is to determine if there

are no differences in mental health among social media users of Senior High School (SHS) students at De La Salle University - Integrated School (DLSU-IS) Laguna campus between male and female, STEM and non-STEM, below 18 and 18 and above, and social media usage. With this, the researchers aim to: (1) compare the MHI-38 scores of social media users by sex, strand, and age, and (2) compare the MHI-38 scores of students between the time they spend on the mentioned social media platforms. The study addresses the potential impacts of social media usage on the mental health of grade 12 students between variables. The results of the study could aid future researchers who plan to explore and further understand the relationship between social media usage and mental health. Since the study looks into specific demographic variables, it provides insight into how each factor could be influenced by the possible differences in the relationship between mental health and social media usage. Additionally, the study's findings validate and add to previous research and what is already known and understood in this field.

2. METHODOLOGY

The study focuses on grade 12 students aged 17 to 19 from the De La Salle University Laguna campus. With 294 as the population size, the sample size of 170 was determined using Slovin's formula with a 95% confidence level and a 0.05 margin of error. Simple Random sampling was employed to select participants, allowing for generalizations about this specific demographic. The study employed a quantitative research design through a survey questionnaire to gather data. The questionnaire consisted of three sections: demographics, social media usage, and the Mental Health Inventory (MHI-38) scale. Data was collected using Google Forms, and the responses of the participants were collected and arranged in an Excel spreadsheet for analysis. Data on variables such as sex, strand, age, and social media usage were gathered while the MHI-38 questionnaire generates a numerical score to aid in measuring mental health. The researchers utilized T-Test, and ANOVA to evaluate the data. T-Test compared the means of MHI-38 scores for different groups, such as male and female, STEM and non-STEM strands, and below 18 and 18 and above social media users while ANOVA differentiated the MHI-38 scores based on varying amounts of time spent on social media. These statistical methods helped the researchers determine the differences among social media users between male and female, STEM and non-STEM, below 18 and 18

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and above, and social media usage. The study's limitations include limited generalizability, self-reported data bias, cross-sectional design limitations, and potentially different aspects of the relationship between social media usage and mental health outcomes. The sample size of 170 participants may not adequately represent the larger population, reducing validity. The study could potentially have biases due to several factors. The study used simple random sampling to choose participants. However, there might be a lack of interest among students to participate in the study, which could create bias as voluntary responses may be influenced by certain experiences and opinions. Additionally, response bias may happen as participants could give socially acceptable answers or inaccurate information regarding their use of social media or their state of mental health which could be another factor that could affect the reliability of the study.

3. RESULTS AND DISCUSSION

After the researchers conducted statistical analysis and compared the MHI-38 scores of various categories, it was discovered that there were no differences among social media users between male and female, STEM and non-STEM, below 18 and 18 and above, and social media usage. The respondents were categorized according to demographics. These demographics include sex, strand, and age. Regarding sex, there were 90 (52.6%) male and 75 (43.9%) female respondents while 6 (3.50%) respondents preferred not to state their sex. In terms of academic strand, STEM respondents accounted for 128 (74.9%), while non-STEM respondents accounted for 43 (25.1%). Moreover, among the 171 respondents, the most common age was 18, with a total of 112 (65.5%) out of 171 respondents while 49 (28.7%) respondents were aged 17, and 10 (5.8%) of them were aged 19. In summary, there were 49 (28.7%) respondents below the age of 18 and 122 (71.3%) respondents aged 18 and above. In regards to social media usage, 113 (66.1%) respondents were found to be using Facebook for less than an hour. Additionally, it was discovered that 85 (49.7%) respondents use Instagram mostly for 1 to less than 2 hours while 72 (42.1%) respondents reportedly use TikTok for less than an hour. Furthermore, the highest possible MHI-38 score an individual could attain from the questionnaire is 226 while the lowest score is 38, wherein higher scores on the Mental Health Inventory indicate greater psychological well-being and less psychological distress, as stated in the MHI-38 questionnaire scoring guide. The overall calculated average

MHI-38 score for all 171 respondents is 140 which is also the point estimate of the true mean with a standard deviation of 32.9, and 208 being the maximum and 64 being the minimum MHI-38 score.

Table 1
T-test for the difference of two mean MHI-38 scores by SEX

	Female	Male
Mean	134.76	144.7333333
Variance	980.292973	1140.107865
Hypothesized Mean Difference	0	
df	161	
t Stat	-1.965844853	
P(T<=t) two-tail	0.051036473	
t Critical two-tail	1.974808092	

The MHI-38 scores of male and female social media users among the respondents were compared using a T-test. After conducting the statistical test, the null hypothesis that there is no significant difference between the two groups' mean scores was not rejected ($t(161) = 1.9748$, $p > .05$). This implies that there is no significant difference between the MHI-38 scores of female and male social media users.

Table 2
T-test for the difference of two mean MHI-38 scores by STRAND

	STEM	non-STEM
Mean	139.0859375	143.0233
Variance	1101.68547	1044.071
Hypothesized	0	

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Mean Difference	
df	74
t Stat	-0.686569015
P(T<=t) two-tail	0.494500175
t Critical two-tail	1.992543495

The MHI-38 scores of STEM and non-STEM social media users among the respondents were compared using a T-test. After conducting the statistical test, the null hypothesis that there is no significant difference between the two groups' mean scores was not rejected ($t(74) = 1.9925, p > .05$). This implies that there is no significant difference between the MHI-38 scores of STEM and non-STEM social media users.

Table 3
T-test for the difference of two mean MHI-38 scores by AGE

	Below 18	18 and above
Mean	140.5625	139.418033
Variance	1414.8470	945.9643
Hypothesized Mean Difference	0	
df	73	
t Stat	0.187568	
P(T<=t) two-tail	0.851736	
t Critical two-tail	1.665996	

The MHI-38 scores of below 18 and 18 and above social media users among the respondents were compared using a T-test. After conducting the statistical test, the null hypothesis that there is no significant difference between the two groups' mean scores was not rejected ($t(73) = 1.6660, p > .05$). This implies that there is no significant

difference between the MHI-38 scores of below 18 and 18 and above social media users.

Table 4
One-way ANOVA of the MHI-38 scores between respondents' time spent on FACEBOOK

Source of Variation	Between Groups	Within Groups	Total
Sum of Squares	5019.263613	179244.7481	184264
df	3	167	170
Mean Square	1673.088	1073.322	
F	1.558794		
P-value	0.201336		
F crit	2.658723		

One-way ANOVA was used to compare the MHI-38 scores between respondents' time spent on Facebook. These groups fall under the headings 1 to less than 2 hours, 2 to less than 3 hours, 3 to less than 4 hours, and greater than 4 hours. After conducting the statistical test, the results showed that the null hypothesis, that there is no difference in the mean MHI-38 scores for all the groups, was not rejected ($F(3,167) = 1.5588, p > .05$). This suggests that the MHI-38 score of the social media users were not impacted by their Facebook usage.

Table 5
One-way ANOVA of the MHI-38 scores between respondents' time spent on INSTAGRAM

Source of Variation	Between Groups	Within Groups	Total
Sum of Squares	2472.672	161791.3	184264

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df	3	167	170
Mean Square	824.2239	1088.571	
F	0.757161		
P-value	0.519664		
F crit	2.658723		

One-way ANOVA was used to compare the MHI-38 scores between respondents' time spent on Instagram. These groups fall under the headings 1 to less than 2 hours, 2 to less than 3 hours, 3 to less than 4 hours, and greater than 4 hours. After conducting the statistical test, the results showed that the null hypothesis, that there is no difference in the mean MHI-38 scores for all the groups, was not rejected ($F(3, 167) = 0.7572, p > .05$). This suggests that the MHI-38 score of the social media users were not impacted by their Instagram usage.

Table 6
One-way ANOVA of the MHI-38 scores between respondents' time spent on TikTok

Source of Variation	Between Groups	Within Groups	Total
Sum of Squares	5132.637	179131.4	184264
df	3	167	170
Mean Square	1710.879	1072.643	
F	1.595013		
P-value	0.192521		
F crit	2.658723		

One-way ANOVA was used to compare the MHI-38 scores between respondents' time spent on TikTok. These groups fall under the headings 1 to less than 2 hours, 2 to less than 3 hours, 3 to less than 4 hours, and greater than 4 hours. After conducting the statistical test, the results showed that the null hypothesis, that there is no difference in the mean MHI-38 scores for all the groups, was not rejected ($F(3, 167) = 1.5950, p > .05$). This suggests that the MHI-38 score of the social media users were not impacted by their TikTok usage.

4. CONCLUSIONS

The results revealed that there is no difference in mental health among social media users of Senior High School (SHS) students at De La Salle University - Integrated School (DLSU-IS) Laguna campus between male and female, STEM and non-STEM, below 18 and 18 and above, and social media usage.

The researchers discovered that there were no significant differences in mental health between male and female social media users. It was also found that the same result was observed for STEM and non-STEM social media users, as well as for social media users below the age of 18 and those aged 18 and above. Lastly, the researchers explored the relationship between social media usage and mental health based on the time a social media user spends on Facebook, Instagram, and TikTok. The results indicated no significant differences in mental health scores among different time divisions for each of the platforms.

Future research could explore factors such as self-esteem, body image, loneliness, social support, social anxiety, and online harassment through qualitative research which could aid in better understanding the relationship between social media use and mental health. Additionally, researchers could look into using a different sampling method and consider a larger sample size, and a wider range of demographics, platforms, and age groups to gain more accurate, valid, and reliable results on the possible influences that social media usage could have on mental health across different variables.

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