

# Unveiling the Link between Facebook Addiction and Loneliness during COVID-19 Pandemic

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**Abstract:-** The pervasive use of Facebook and excessive engagement with the platform contribute to increased feelings of loneliness among individuals, as the addictive nature of Facebook fosters shallow online connections, reduces real-life social interactions, and perpetuates a sense of social isolation, ultimately undermining personal well-being and mental health especially amidst COVID-19 pandemic. Thus, this study intends to provide empirical evidence on the influence of Facebook addiction on the loneliness levels of senior high school students at San Agustin Institute of Technology, facilitating a better understanding of the interplay between technology and mental health among adolescents. The research employed a quantitative, non-experimental research design utilizing the descriptive-correlational technique. The sample consisted of 163 randomly selected senior high school students out of a total population of 460. Data analysis involved the use of frequency count, percentage, mean, standard deviation, Pearson product-moment correlation, and simple linear regression. The demographic profile analysis revealed that the majority of the respondents were females aged between 17-18 years old. Additionally, the study found that the levels of Facebook addiction and loneliness among the respondents were moderate. The test of relationship indicated a significant association between Facebook addiction and loneliness. Moreover, the regression analysis demonstrated that Facebook addiction has an influencing effect on students' loneliness. These results suggest that excessive and uncontrolled use of Facebook by the students can contribute to their feeling of loneliness.

**Keywords:-** Facebook addiction; loneliness; COVID-19; Philippines.

## I. INTRODUCTION

Loneliness has emerged as a significant mental health issue, particularly among youngsters and teenagers in modern society [1]. The World Health Organization (WHO) has recognized it as a global crisis in public health, with potential links to morbidity, suicide, and mortality [2]. Recent meta-analyses and systematic reviews have revealed the prevalence of loneliness in various countries and regions, particularly among adolescents in South-East Asia and the Eastern Mediterranean [3]. Furthermore, the COVID-19 pandemic has exacerbated the problem of loneliness, as preventive measures such as lockdowns and social distancing

have led to increased isolation and mental health problems [4].

When the World Health Organization (WHO) declared the emergence of the devastating COVID-19, countries worldwide implemented preventive measures to counter the rapidly increasing cases and mortality rates. These measures included boundary restrictions, public lockdowns, community quarantine, and strict social distancing [5]. However, such preventive measures have resulted in various psychological adverse effects, including loneliness, isolation, and mental health problems, particularly among adolescents and young adults [3][6][7].

In response to the COVID-19 pandemic, people have increasingly relied on information communication technology (ICT), including computers, smartphones, and social media, to combat loneliness and isolation [8][9][10]. However, contrary to expectations, the use of these technologies has resulted in adverse effects and increased addiction problems, such as Facebook addiction disorder (FAD) [1][8][9][11]. Researchers have found a link between FAD and higher levels of loneliness, as well as negative impacts on study habits [10], academic performance [9][12][13], eating disorders [8] sleep quality [4][14], and mental health issues [8][15][16][17].

Social media has increasingly become popular among Filipinos. Global studies report of "Hootsuite and We Are Social" that the Philippines topped in 6<sup>th</sup> straight year as the most spent time in internet and social media usage worldwide. Further, Filipinos spent an average of 10 hours and 8 minutes in 2020, which increased to 10 hours and 56 minutes in 2021. Moreover, Filipinos also top rank in 2021 in terms of social media usage averaging 4 hours and 15 minutes which doubled the average worldwide time spent [18]. The result concurred with the report of the [19] that 73.9% of Filipinos aged 10 to 64 were exposed to the internet for social media usage in 2019. No wonder the Philippines has been dubbed the "social media capital of the world" [18][20]. The results indeed were alarming enough to be addressed since the majority of the users are teenagers (12-17) and millennials (18-34). In this age bracket, several researchers posited there is a large increase in the possibility of developing Facebook addiction disorders [9][21]. Indisputably, millennials who spend more than 2 hours daily using social media are more likely to report issues on mental health such as anxiety and depression [22]. Thus, the valid observation becomes a core basis for the researchers to conduct this study since the

context respondents (senior high school students of San Agustin Institute of Technology) have a high level of internet access. At the same time, they are heavy internet and social media users.

#### A. Facebook Addiction

The overwhelming developments of technology, such as the internet, computers, smartphones, and other advanced technologies in this era, make people's lives live in easier and more productive in many ways compared to before generations. Technology enables factories to be more productive in their productions, and science laboratories discover more beyond human comprehension, more space, and astronomical discoveries, and even unlock a new level of convenience, specifically at the home, office, and schools [13]. One of the technological discoveries that have impacted the many lives of individuals nowadays is the use of the internet. As the internet became widely used around the world, heavy usage of social media was followed. According to Statista, 4.26 billion individuals are already using social media globally, and increasing significantly every year, with an approximate projected increase to 6 billion in the year 2017 [25]. One of these well-known social media is Facebook.

Facebook is a social media platform created by Mark Zuckerberg in 2004 with the aim of connecting people across the globe. This social media is freely accessed that produces different alluring features and entertainment, such as communicating with family and friends, and sharing photos, videos, blogs, games, and others [14]. According to recent data from Statista, in January 2022 that Facebook was the most popular social network globally, with approximately 2.9 billion active users compared with the other social network platform [26]. Furthermore, India, United States, Indonesia, Brazil, Mexico, Philippines, Vietnam, Thailand, Egypt, and Bangladesh are among the rank ten leading countries using Facebook social media platforms [27].

With the popularity of Facebook, several researchers have discovered that Facebook helps students improve their cognitive abilities and social competencies, raises positive attitudes toward learning, and develops communication with teachers outside the classroom. Using Facebook can help university students become more knowledgeable, socially accepted, and supported, which can improve self-esteem and life satisfaction [9]. Using Facebook has a positive effect on the social life of individuals, such as maintaining, and improving friendship networks, sharing ideas, providing social support, forming new relationships, and facilitating learning [4]. However, aside from opportunities brought by the utilization of Facebook, various researchers likewise identified some adverse effects on the usage of this platform, especially in an excessive manner [9][23]. In other words, the excessive and uncontrolled usage of Facebook leads to addictions [1][8][9][1].

Facebook addiction is a behavioral disorder related to problematic social and internet use. Problematic Facebook use has been defined as a lack of control over website usage, which has significant negative effects on relationships, sleep, school, or work performance [14][24]. In a recent study by

Ho, [4] that Facebook addiction is associated with poor sleep quality and depression. They further explain that uncontrollable use of the internet or problematic use of Facebook leads to sleep deprivation, insomnia, late sleep habit, and sleep disturbance that cause poor sleep quality. Moreover, problems and overusing Facebook have a significant influence on the risk of developing depression through accumulating negative thoughts forms from jealousy, insecurities, and social competition.

In the same way, Facebook addiction likewise shows a significant impact on student's study habits and academic performance. Uncontrolled Facebook usage may lead students to waste their time instead of doing their scholastic work. Students may lose track of time which leads them to cram and rush things, indeed resulting in poor productivity in their academic activities outputs [10]. On the other hand, several authors posited that Facebook addiction and academic performance among students [11] [13] [28]. The authors further explain that students who use the internet, including social media, just for entertainment have impaired academic performance. When the students stay for long hours, it leads them to lack sleep and tiredness reason for not participating or attending school or feeling exhausted amidst the class session. As a result, it could have a detrimental effect on students' scholastic performance.

#### B. Loneliness

Loneliness is a person's reaction to a lack of social interactions or a lack of intimacy and sincerity in relationships while having a variety of social relationships [4]. Loneliness can occur when there is a disconnection between what an individual aspires to and their reality [9]. According to research, loneliness has a harmful impact on human health [8]. People who are lonely may lose touch with their surroundings, which can lead to difficulties in their lives. Individuals who are lonely avoid forming relationships with others because they believe they are unfit for such social interaction. Loneliness can contribute to both physical and emotional tiredness if it becomes chronic [11].

The study by [30] reveals that loneliness links with sleep disturbances, insomnia symptoms, sleep deprivation, and sleep satisfaction. Likewise, loneliness contributes to the increasing level of stress, anxiety experience, and depression symptoms [8][9][31]. Loneliness not only directly causes symptoms of depression but also indirectly affects depression through health, meaning that lonely people often experience poorer health and, in turn, lead to a risk of depression. Lonely individuals often lack social support, which in turn leads to a higher risk of experiencing depression. Therefore, loneliness threatens mental health resilience [4].

#### C. Correlation Between Measure

This section presents studies that focused on the same variables as the present study. These studies revealed that these variables are associated and found these variables have no significant difference.

The process of too much exposure to social media can turn into addiction after a while, and it makes users spend more and more time on social networking sites like

Facebook, which may lead to seclusion and a feeling of loneliness. Loneliness is considered one of the problems most evident in relations between persons to their peers, which can develop as a psychological problem at every stage in a person's life [32]. Moreover, loneliness can also lead to a negative impact on physical well-being [4][8][9].

Saleem et al. [11] tried to explore the influence of Facebook addiction on loneliness among students. The author found that several of their respondents are addicted to Facebook usage. As the test of influence has done, these authors conclusively discovered that Facebook addiction significantly leads to loneliness. They further explain that addiction to Facebook damages the sleeping habits, health, and interest of studies students and creates loneliness. Moreover, people who spend an excessive amount of time on Facebook are showing not only havoc time but also getting agitated from their real activities and which leads to their decline in productivity and social life and creates loneliness in the students.

Moreover, Shettar et al. [16] also testified to the significant association between Facebook and loneliness. The authors' findings showed that more than one-fourth of the respondents were considered Facebook addicts, and 33% had the risk of developing Facebook addiction. They stipulate that Facebook addiction was significantly associated with loneliness.

The above mention results concurred with the works of Chavez, G., and Chavez, F. [33]. Their study likewise testified that there is a significant correlation between Facebook addiction and the loneliness of the students. The authors further explain when a person becomes addicted to Facebook, it can be attributed to the lack of personal contact with real friends in the virtual environment because they feel lonely as they are detached from the physical world and the longing for company. This is reinforced by the loneliness survey results in which high school students do not want to be alone, and they want to be with their friends. Hence, the students use Facebook only to avoid life pressures such as problems, stress, and anything that bothers them.

Another recent result that exists was the findings of Ho et al. [9], Ho [4], and Ho, Huyuh, and Tran-Chi, [8]. Both studies aimed to discover the association between problematic use of Facebook, loneliness, sleep quality, and mental health. Equally, the finding showed that Facebook addiction leads to poor quality of sleep and contributes to increased levels of loneliness, stress, anxiety, and the risk of depression. They further explain that when individuals spend a lot of time on Facebook, they are more likely to experience social comparisons. This leads them to a feeling of insecurity and jealousy that is a pathway to low self-esteem and becoming pessimistic. When not addressed, this individual turns out to be an unfriendly reason for being lonely and becoming dependent on a virtual relationship. In the long run, it will be the pathway to increased stress, anxiety, and depression experiences that threaten mental resilience.

## II. METHODS

### A. Research Design

Quantitative, non-experimental research design utilizing the descriptive-correlational technique refers to a specific approach in research methodology that involves collecting and analyzing numerical data to describe and explore relationships between variables without manipulating them [34][35].

In this type of research design, researchers focus on observing and measuring variables as they naturally occur, without intervening or manipulating any factors. The descriptive aspect involves describing and summarizing the variables of interest, while the correlational aspect examines the relationships between variables to determine if there is a statistical association between them [34][35].

### B. Research Local and Participants

The study was conducted at San Agustin Institute of Technology (SAIT), Fr. Manlio Caroselli S.J. St., Poblacion, Valencia City, Bukidnon. The school is a private Catholic institution founded by an Italian missionary priest, Fr. Manlio Caroselli S.J., in 1960. The school has elementary, high school, and college departments. The study focused on senior high school students of San Agustin Institute of Technology. The researchers chose this group because they wanted to assess the level of Facebook addiction and loneliness specifically among this population. To determine the sample, probability sampling, also known as "random sampling," was employed. This sampling technique ensures that every item in the population has an equal chance of being included in the sample [5]. Using an online sample size calculator called Raosoft, the researchers randomly selected 163 respondents from a total population of 460.

### C. Research Instruments

In this study, a survey questionnaire adapted from the study conducted by Chavez and Chavez (2017) was administered to eligible respondents. The questionnaire was modified to align with the specific objectives of the current research, ensuring appropriateness, objectivity, and adequacy. The survey questionnaire consisted of three parts. The first part focuses on gathering demographic information, including age and gender. The second part aims to assess the level of Facebook addiction among the respondents. The third part intends to measure the respondents' experience of loneliness. To ensure the reliability of the questionnaire, the researchers conducted validation and reliability testing. The questionnaire achieved a Cronbach's alpha coefficient of 0.883, indicating a high level of reliability.

### D. Ethical Consideration

The researchers were diligent in adhering to ethical protocols throughout the research process. They obtained permission from the Dean of the College and the High School Principal, ensuring institutional approval. Additionally, they sought informed consent from the respondents, providing them with a clear understanding of the study's objectives and potential risks involved. While the researchers encouraged participation, they respected the respondents' autonomy, and their decision to decline participation was fully respected.

This ensured that all respondents who completed the questionnaires did so voluntarily.

The researchers placed a strong emphasis on maintaining the privacy and confidentiality of the respondents' personal information. They strictly avoided disclosing any identifiable information. Furthermore, the researchers maintained the integrity of the data, ensuring that no falsification or fabrication took place. They made a conscious effort to avoid any form of deceit throughout the study. To guarantee the originality of their work, the researchers utilized plagiarism detection software to examine their manuscripts, ensuring that all sources were appropriately cited and giving due credit to the respective authors. By strictly adhering to these ethical considerations, the researchers ensured the development of a high-quality

study that was conducted with integrity and in accordance with ethical standards.

### III. RESULTS

#### A. Demographic Profile

Table 1 displays the demographic profile of senior high school students of San Agustin Institute of Technology, focusing on age and gender. The findings reveal that majority of the students fall within the 17-18 years age range, accounting for 110 students or 67% of the total sample. Conversely, the age group of 21 years and above comprises the smallest proportion, with only 8 students or 13% of the total sample. Regarding gender, the study indicates that females constitute the majority, with 89 students or 55% of the total sample, while males account for 74 students or 45% of the total sample.

Table 1: Demographic Profile of the Respondents

Variables	N	%
Age		
16 years old and below	24	15
17-18 years old	110	67
19-20 years old	21	13
21 years old and above	8	5
<b>Total</b>	<b>163</b>	<b>100</b>
Gender		
Male	74	45
Female	89	55
<b>Total</b>	<b>163</b>	<b>100</b>

#### B. Level of Facebook Addiction

Table 2 presents the findings regarding the level of Facebook addiction among the students at San Agustin Institute of Technology. The results indicate that the overall level of Facebook addiction has a mean value of 2.96 (SD=1.21), indicating a moderate level of addiction. Specifically, the item statement, "I stay on Facebook more

than I think," obtained the highest mean score of 3.69 (SD=0.99), indicating that students often engage in this behavior. On the other hand, the item statement, "I prefer to spend time on Facebook instead of spending time with my friends," received the lowest mean score of 2.72 (SD=1.23), suggesting that students sometimes prioritize Facebook over face-to-face interactions with friends.

Table 2: Level of Facebook Addiction

Items Statements	Mean	SD	Interpretation
1. I stay on Facebook more than I think.	3.69	0.99	High
2. I embrace a protectionist and preservative personality when my friends warn me about the dangers of Facebook.	3.59	1.12	High
3. Before my responsibilities, I check my messages on Facebook.	3.42	0.96	High
4. People warn me about spending too much time on Facebook.	3.29	1.16	Moderate
5. By contacting Facebook, I think that I get out of my problems, stress, bothers, and bans.	3.20	1.1	Moderate
6. My academic performance is affected negatively because of Facebook.	3.17	1.16	Moderate
7. I form new relationships with Facebook members.	3.15	1.19	Moderate
8. I try not to open the application to reduce the time I spent on Facebook.	3.09	1.01	Moderate
9. When I spent time on Facebook, I talk to myself that these are my last minutes.	3.07	1.17	Moderate
10. I have a sleep disorder because of Facebook.	3.06	1.17	Moderate
11. I think that without Facebook, life is boring, meaningless, joyless, absent, and moody.	3.04	1.24	Moderate
12. I create new expectations when I re-enter my Facebook account.	2.99	0.96	Moderate
13. I tell lies to hide my spending too many times on Facebook.	2.96	1.21	Moderate
14. My grades and work at school are affected negatively because of time spent on Facebook.	2.95	1.14	Moderate
15. I block someone on Facebook when she/he bores me when I read writings on her wall.	2.94	1.31	Moderate
16. I freeze my Facebook account because of disputes opposite to my ideas.	2.9	1.1	Moderate
17. I prefer to entertain on Facebook instead of friends.	2.88	1.15	Moderate
18. I think the events on Facebook when I am offline.	2.88	1.17	Moderate
19. I prefer to spent time on Facebook instead of spending time with my friends.	2.72	1.23	Moderate
<b>Overall Mean</b>	<b>2.96</b>	<b>1.21</b>	<b>Moderate</b>



*C. Level of Loneliness*

Table 3 presents the level of loneliness among high school students at San Agustin Institute of Technology with an overall mean of 2.85 (SD=0.69), indicating a moderate level of loneliness. The statement, "I have nobody to talk to,"

obtained the highest mean score of 3.12 (SD=1.17), described as "sometimes," and interpreted as "moderate." On the other hand, the statement, "I am no longer close to anyone," received the lowest mean score of 2.63 (SD=1.09), described as "sometimes," and interpreted as "moderate."

Table 3: Level of loneliness

Items Statements	Mean	SD	Interpretation
1. I have nobody to talk to.	3.12	1.17	Moderate
2. I am unhappy doing so many things alone.	3.10	0.66	Moderate
3. I feel as if nobody really understands me.	2.98	1.02	Moderate
4. No one really knows me well.	2.98	1.12	Moderate
5. I feel shut out and excluded by others.	2.98	1.12	Moderate
6. My social relationships are superficial.	2.96	1.04	Moderate
7. I feel isolated from others.	2.92	1.07	Moderate
8. I cannot tolerate being so alone.	2.87	1.03	Moderate
9. I am unable to reach out and communicate with those around me.	2.83	1.10	Moderate
10. I feel starved for company.	2.82	1.06	Moderate
11. There is no one I can turn to.	2.80	1.06	Moderate
12. I lack companionship.	2.79	0.99	Moderate
13. I feel left out.	2.75	1.19	Moderate
14. I feel completely alone.	2.74	1.20	Moderate
15. I am unhappy being so withdrawn.	2.73	1.05	Moderate
16. It is difficult for me to make friends.	2.70	1.08	Moderate
17. I am no longer close to anyone.	2.63	1.09	Moderate
<b>Overall Mean</b>	<b>2.85</b>	<b>0.69</b>	<b>Moderate</b>

*D. Correlation Analysis Between Facebook Addiction and Loneliness*

Established in Table 4 is the correlation analysis between Facebook addiction and loneliness among high school students of San Agustin Institute of Technology. The finding reveals that Facebook addiction is associated with loneliness with a correlation coefficient of .418 with a p-value of 0.000,

lesser than 0.001 (2-tailed) level of significance. This simply means that there is a significant relationship between Facebook addiction and loneliness among senior high school students. Therefore, the first null hypothesis that states, "There is no significant relationship between Facebook addiction and loneliness," is rejected.

Table 4: Correlation Analysis between Facebook Addiction and Loneliness

Independent Variable	Dependent Variable: Loneliness		
	Correlation Coefficient	p-value	Interpretation
Facebook Addiction	.418**	0.000	Significant

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

*E. Regression Analysis Between Parental Influence, Peer Pressure, and Alcohol Use.*

Displayed in Table 5 is the result of the test of influence conducted between Facebook addiction and loneliness using simple regression analysis. The finding showed that the F-value is 34.172 and the p-value is 0.000, which is lesser than the 0.05 level of significance. The result denotes that Facebook addiction significantly influences student loneliness. Hence, the second null hypothesis that states, "The Facebook addiction does not influence loneliness," is rejected.

Loneliness obtained a beta coefficient of .238, which is the amount of increase in the Facebook addiction in every 1 level increase of loneliness. Based on the analysis, the obtained regression model is **Facebook addiction = 2.145 + .238\* loneliness**. Moreover, the R-square value is 0.418 implying that 41.8% of the variance among high school students' loneliness is attributed to Facebook addiction. This likewise signifies that 77.2% of the variance can be attributed to factors not covered in this study. Thus, the computed S-value of 0.630 is the measure of the accuracy of the prediction; the smaller its value, the better.

Table 5: Regression Analysis between Facebook Addiction and Loneliness

Indicators	Facebook Addiction			t-value	p-value	Interpretation
	Unstandardized Coefficients		Standardized Coefficients			
	Beta	Std. Error	Beta			
(Constant)	2.145	.130		16.467	.000	—————
Loneliness	.238	.0041	.418	5.846	.000	Significant
	R		.418 <sup>a</sup>	p		0.000 <sup>b</sup>
	R <sup>2</sup>		.175	S		0.630
	F		34.172			

\*p&lt;.05

#### IV. DISCUSSION AND PRACTICAL IMPLICATION

##### A. Demographic Profile

Based on the results gathered from the demographic profile in terms of age, majority of the students were 17–18 years old. The finding indicates that majority of the respondents are Grade 11 students. This implies that there is a higher number of students in the penultimate year of their secondary education compared to the final year. This situation could be due to several factors such as increase in enrolment among Grade 11 students. The COVID-19 pandemic had a significant impact on Grade 12 students, potentially resulting in a higher dropout rate or increased transfer and migration. As a result, there has been a decline in the enrollment of these students.

Moreover, the results likewise revealed that majority of the respondents are females. This implies that females value education and are more concerned about their future careers and professions than males. Thus, the result concurs with DiPrete and Buchmann [36] who mentioned that female students continue to outnumber their male equivalent in education. This incident happened because female students showed a higher level of interest in exploring different curricular activities than males.

##### B. Level of Facebook Addiction

The senior high school students of San Agustin Institute of Technology exhibit a moderate level of Facebook addiction indicating that they have an average dependency on Facebook as a platform. The findings also suggest that students sometimes prioritize Facebook over other activities, such as dealing with their problems and stress. Additionally, the students sometimes feel that their academic performance is negatively affected by their Facebook usage, and they experience sleep disorders as a result. Moreover, they occasionally experience feelings of boredom, meaninglessness, and joylessness when they are not using Facebook. This result is aligned with the proposition of several authors [10][11][14][16] who reported that excessive and problematic use of Facebook can lead to time mismanagement, poor sleep quality, and decreased academic engagement and productivity.

##### C. Level of Loneliness.

The result of the study indicates that the senior high students of San Agustin Institute of Technology experienced a moderate level of loneliness. The finding suggests that most students occasionally felt unhappy because they engaged in activities alone and perceived a lack of communication and understanding from others. Furthermore, they occasionally experienced feelings of isolation, being excluded, and a lack of connection or communication with others. Lastly, they occasionally expressed a desire for company and companionship, as they faced difficulties in making friends and felt detached from others. The result is aligned with the findings the well-known authors [4][9][14] who emphasized that lonely individuals lack social interaction, intimacy, sincerity, and emotional connections in their relationships. Lonely individuals may also become disconnected from their surroundings, leading to various challenges in their lives. Furthermore, individuals who feel lonely may avoid forming relationships with others because they believe they are not suitable for social interaction, as stated by Bais and Reyes [22].

##### D. Significant Relationship between Facebook Addiction and Loneliness

One of the main objectives of the study was to determine the significant relationship between Facebook addiction and loneliness among senior high school students of SAIT. The results of the correlation test revealed a significant relationship between Facebook addiction and loneliness. As a result, the first hypothesis, which states, **“There is no significant relationship between Facebook addiction and loneliness,” is rejected.** This finding is aligned with the propositions put forth by Shettar et al. [16] and Chavez, G. and Chavez, F. [33], who have previously discussed the association between Facebook addiction and loneliness. These authors explain that when individuals become addicted to Facebook, it can be attributed to their lack of personal contact with real friends in the virtual environment, which leads to feelings of loneliness. Furthermore, studies conducted by Ryan et al. (2014) and Saleem et al. (2016) have shown that Facebook addiction is linked to relationship problems and an increased sense of loneliness and social isolation. This suggests that excessive use of Facebook can result in decreased face-to-face social interaction, low self-esteem, a lack of relational skills, and difficulties in maintaining meaningful relationships, all of which contribute to the feelings of loneliness.

### E. Significant Influence of Facebook Addiction on Loneliness

Another main objective of this study was to determine the significant influence of Facebook addiction on loneliness among senior high school students of SAIT. The results of the regression analysis indicated that Facebook addiction does indeed have a significant influence on loneliness. Therefore, the second hypothesis, which states, **“There is no significant influence of Facebook addiction on loneliness,” is rejected.** This finding is supported by the proposition put forth by Saleem et al [11], who found that Facebook addiction has a significant influence on loneliness. The authors explained that addiction to Facebook can disrupt students' sleep patterns, affect their health and academic interests, and contribute to feelings of loneliness. Furthermore, individuals who spend excessive amounts of time on Facebook not only waste valuable time but also become disengaged from their real-life activities, leading to decreased productivity and social interactions, ultimately resulting in loneliness among students. Another relevant set of findings comes from the studies conducted by Ho [4], Ho et al. [9], and Ho et al. [14] which consistently demonstrated that Facebook addiction leads to poor sleep quality and contributes to increased levels of loneliness, stress, anxiety, and the risk of depression. The authors further explained that excessive time spent on Facebook often leads to social comparisons, which can foster feelings of insecurity and jealousy, subsequently leading to low self-esteem and pessimism. When left unaddressed, these factors contribute to loneliness and dependence on virtual relationships. Ultimately, this can lead to heightened levels of stress, anxiety, and depression, posing a threat to individuals' mental well-being.

## V. CONCLUSION AND RECOMMENDATION

The research findings indicate that the majority of the respondents in the demographic profile were 17-18 years old in terms of age and females in terms of gender. Furthermore, the study revealed that respondents experience a moderate to high level of Facebook addiction. Additionally, the overall level of loneliness among these students was found to be moderate, suggesting occasional feelings of isolation and lack of communication. The correlation analysis demonstrated a significant relationship between Facebook addiction and loneliness, indicating that increased time spent on Facebook is associated with higher levels of loneliness. Regression analysis further supported this relationship, showing that Facebook usage influences loneliness and negatively impacts productivity and social life.

Therefore, the results of the study validate the Attachment Theory of Bowlby (1907-1990), as cited by Simpsons and Beckes [37]. This theory emphasizes the significance of a strong emotional bond between an infant and their caregiver. It also serves as a precursor to contemporary theories of loneliness. According to this perspective, loneliness occurs when children with insecure attachment patterns exhibit behaviors that lead to rejection by their peers. These rejections hinder the development of their social skills and increase their mistrust of others, thereby fostering ongoing feelings of loneliness. Drawing from this theory, insecure attachment patterns can be linked to Facebook addiction through feelings of jealousy and insecurity resulting

from social comparison. These individuals may disconnect from their friends and peers due to low self-esteem and develop a pessimistic outlook, ultimately increasing their level of loneliness.

Further, the findings of the study likewise validate Behaviorism Theory of Watson (1913), as cited by Cherry [38]. Behaviorism is a theory of learning that posits that all behaviors are acquired through conditioning, which occurs through interactions with the environment. Behaviorists believe that individual actions and personality traits are shaped by environmental stimuli. In the context of loneliness, this behavioral approach suggests that certain personality traits associated with loneliness, such as social anxiety, shyness, sadness, hostility, distrust, and low self-esteem, contribute to and are influenced by harmful patterns of interpersonal interaction, such as excessive use of Facebook or Facebook addiction. Lonely individuals often struggle to form and maintain meaningful relationships, and they may be less inclined to share personal information with their peers, leading to a lack of intimacy. Consequently, they may turn to spending more time on social media platforms in an attempt to alleviate their feelings of loneliness resulting from the aforementioned factors.

As for recommendation, Schools may assess and intervene with senior high school students who are struggling with academic activities and facing difficulties in social interactions. The guidance office can play a proactive role by reaching out to students individually, particularly those experiencing academic stress. On the other hand, Parents may be vigilant in recognizing early signs and symptoms of loneliness in their children. They may create awareness at home and take the initiative to learn about and monitor their children's mental health conditions. Furthermore, Senior high school students may be encouraged to attend seminars or workshops focusing on topics such as loneliness, stress, and depression to increase their awareness and equip them with coping strategies. Lastly, Future researchers may use this study as a reference and guide for conducting similar research to further understanding and addressing the relationship between Facebook addiction, loneliness, and academic performance.

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