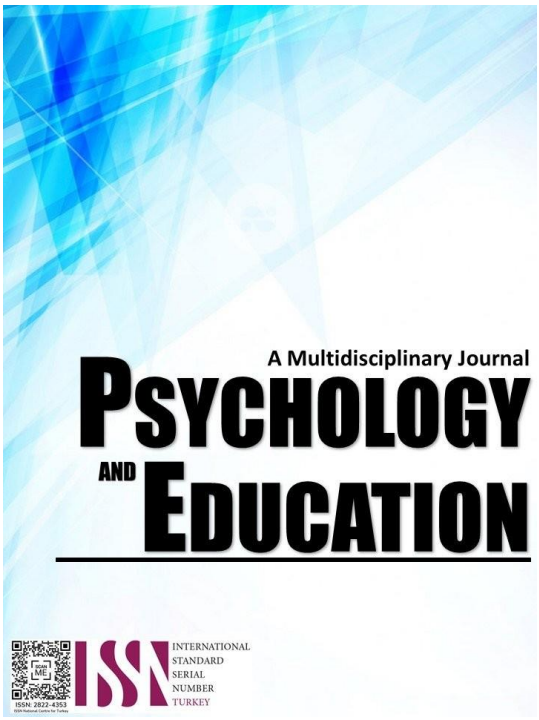
# EFFECTS OF EXCESSIVE USE OF SMARTPHONE TO THE HEALTH AND WELL BEING OF SELECTED SENIOR HIGH SCHOOL STUDENT IN A PRIVATE SCHOOL IN GUMACA, QUEZON

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Research Article

# Effects of Excessive Use of Smartphone to the Health and Well Being of Selected Senior High School Student in a Private School in Gumaca, Quezon

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## Abstract

This research study is entitled "Effects of excessive use of gadgets to the health and wellbeing of selected senior high school students in a private school in Gumaca, Quezon.". A descriptive design of study was utilized in identifying the effects of excessive use of smartphone in terms of social health, emotional health, mental health, and physical health. A survey questionnaire was used as the main data gathering instrument. The study employed 80 Senior High School Students as respondents. The study made use of proportionate random sampling technique in selecting its respondents. Frequency, percentage, mean, ranking and Kruskal Wallis H-test were used for the statistical treatment of data. Based on the findings, typically, the respondents composed of 15-16 years old, and majority was female. The majority of respondents agreed on the effects of excessive smartphone use on the health and well-being of senior high school students. The average mean of 3.68, interpreted as Moderately Agree, indicated agreement on social health. Similarly, the average mean of 4.26, interpreted as Strongly Agree, indicated agreement on emotional health. The average mean of 4.08, interpreted as Moderately Agree, indicated agreement on mental health. Lastly, the average mean of 4.08, interpreted as Moderately Agree, indicated agreement on physical health. Based on the results of the Kruskal Wallis H-test all the null hypothesis of age and sex are not accepted which means that there is a significant difference on the perceived effects of excessive use of smartphone when the respondents are grouped according to profile.

**Keywords:** *emotional health, mental health, physical health, social health, wellbeing*

## Introduction

With the continuous advancement of technology in the world, everything is changing and the things we see and use in our daily lives are becoming more innovative. This has made our tasks easier and more convenient for many people, as it saves time and requires less effort through the use of technology. However, there are circumstances that we experience, such as excessive use of technology, where people tend to abuse its usage. This is particularly evident in the excessive use of smartphones among students, which not only affects their health but also their overall well-being. It leads to addiction among young individuals who cannot cease their constant engagement with these technological devices.

According to a recent study conducted in Pakistan (Islam et al., 2021), the findings emphasize that the effects of mobile phone usage can differ based on specific ways in which they are used. The study highlights several negative consequences associated with excessive mobile device use, including addiction, physical and mental health issues, impaired short-term memory due to lack of sleep, physical fatigue, and difficulties in social interactions. Individual who excessively use smartphones may develop addictive behaviors, experiencing a strong dependency on their devices.

In conclusion, conducting this study on the effects of excessive use of smartphones and its impact on the health and well-being of senior high school students is of great interest due to its potential implications. The widespread use of smartphones among students and the addictive nature of these devices raises concern about the potential negative effects on their overall well-being. Understanding the relationship between excessive smartphone use and its impact on students' well-being can provide valuable insights for teachers, parents, students in developing strategies to promote healthy technology habits and mitigate the potential risks associated with excessive smartphone use. By addressing these issues, we can strive to create a balanced and healthy digital environment for students, ensuring their overall well-being and academic success.

### Research Questions

This study determined the effects of excessive use of smartphones to the health and well-being of selected senior high school students in a private school in Gumaca, Quezon S.Y 2023-2024. Specifically, it sought to answer the following questions:

1. What is the profile of the respondents in terms of:
    1.1. sex; and
    1.2. age?
2. What are the effects of excessive use of gadgets to the health and well-being of senior high school students in terms of:
    2.1. social health;
    2.2. emotional health;
    2.3. mental health; and
    2.4. physical health?
3. Is there a significant difference between the effects of excessive use of smartphones to the health and well-being of senior

high school students in Gumaca, Quezon when the respondents are grouped according to profile?

## Methodology

### Research Design

This study used the descriptive survey method to collect data on measuring the excessive use of gadgets and its effect on the health and well-being of senior high school students at Eastern Quezon College in Gumaca, Quezon. A survey questionnaire was employed as the research instrument. Based on the survey results, the researcher determined the details of the study.

According to Williams (2007), Descriptive research is research design used to examine the situation involving identification of attributes of a particular phenomenon based on an observational basis.

### Respondents

The researcher selected 80 senior high school students through proportionate random sampling who are enrolled in Eastern Quezon College in the S.Y 2023-2024 and the effects of excessive use of smartphones to the health and well-being of senior high school students was the focus of the study. The respondents were composed of 30 male and 50 female students with the total of 80 students. According to Hayes (2023) Proportionate random sampling takes each stratum in the sample as population size of the stratum.

### Instrument

The researcher prepared a researcher-made questionnaire in which were validated by two experts. Part I of the questionnaire included the profile of the respondents. Part II of the questionnaire consisted of the effects of excessive use of gadgets using Liker scale of; 5 – Strongly Agree (SA), 4 – Agree (A), 3 – Moderately Agree (MA), 2 – Disagree (D) and 1 – Strongly Disagree (SD) as perceived by the senior high school learners in Gumaca, Quezon.

To test the internal consistency of the questionnaire using Cronbach's Alpha, a pilot testing was conducted at Eastern Tayabas College with 12 respondents.

After the computation, the result was 0.70 and above which is interpreted as acceptable. This means that there is an internal consistency in the prepared research instrument.

### Procedure

Prior to the conduct of the study, the researcher sent a letter to the principal and adviser of the school. Upon approval, the researcher administered the instrument to the target respondents.

The survey questionnaires were distributed to the respondents of this study. After the distribution of the survey questionnaires, the retrieval, collection and gathering process followed for the purpose of analysis and interpretation of the gathered data.

### Data Analysis

In this study, the researcher used statistical measure to treat the collected data. All the data were carefully read and examined for analysis. The data were gathered through the questionnaires were organized and interpreted through the use of Percentage and Frequency in interpreting the profile of the respondents. To test the significant difference of three or more means, the researcher used the Kruskal-Wallis for non -parametric test.

## Results and Discussion

This section deals with the analysis and interpretation of the data. All the data gathered were presented here in tabulated form with corresponding interpretation. The first part described the profile of the respondents in terms of age and sex. The second part is the effects of excessive use of smartphones to the health and well-being of senior high school students in a private school in Gumaca, Quezon.

Table 1. *Frequency and Percentage Distribution of the Respondents According to Age*

| *Age* | *Frequency* | *Percentage (%)* |
|---|---|---|
| 15-16 years old | 38 | 47 |
| 17-18 years old | 36 | 45 |
| 19 years old and above | 6 | 8 |
| Total | 80 | 100 |

Table 1 presents the frequency and percentage distribution of respondents based on their age, indicating that the majority of participants are 15-16 years old, accounting for 47%. Meanwhile, 45% are 17-18 years old, and 8% are 19 years old and above, suggesting that there are fewer respondents in the latter age group.

As mentioned by akhateeb et al. (2020) most of the participants from the data gathered started using smartphones when they were less

than 18 years old. High frequent usage with prolonged duration of smartphones has been found to be associated with a high risk of addiction, particularly among individuals in their adolescent and young adult years. These results are in line with the findings presented in Table 1, as senior high school students typically fall within the age range of 18 and below, where a significant number of them are already using smartphones.

Based on the result from the data presented in Table 1, showing that the majority of respondents are in the 15-16 age group with a high percentage of smartphone usage before the age of 18, raises significant concerns about the potential implications of early smartphone exposure among adolescents.

Table 2. *Frequency and Percentage Distribution of the Respondents According to Sex*

| *Sex* | *Frequency* | *Percentage (%)* |
|---|---|---|
| Male | 37 | 46 |
| Female | 43 | 54 |
| Total | 80 | 100 |

Table 2 presents the frequency and percentage distribution of respondents based on their sex, revealing that the majority of senior high school participants are female, accounting for 54%. Meanwhile, 46% are male, indicating that there are fewer male respondents compared to female respondents.

Table 2 displays the proportion and distribution of male and female respondents in the study, with females representing the majority at 54%, while males comprised 46% of the total. This is consistent with previous research conducted by Domoff et al. (2020) in a similar context, which also found a higher proportion of female participants compared to males. Similarly, as stated by Alkhateeb et al. (2020) the findings that the smartphone addiction scale scores of females were significantly higher than those of males.

The higher percentage of female participants in senior high school, along with research indicating females have higher smartphone addiction scores than males, suggests a gender disparity in smartphone usage and addiction risks. This, coupled with the observation that there are more females enrolled in the research locale, underscores the importance of tailored interventions and research to address gender-specific vulnerabilities and promote healthy digital habits among adolescents.

Table 3. *Respondents Assessments of the Perceived Effects of Excessive Use of Smartphone to the Health and Well-being of Senior High School Students in terms of Social Health*

| *Indicator*<br>*Because of excessive use of smartphone…* | *Mean* | *Verbal Interpretation* |
|---|---|---|
| 1. affects my ability in socializing with other people. | 3.92 | Moderately Agree |
| 2. makes me want to stay in my room every day. | 3.83 | Moderately Agree |
| 3. triggers the feeling of loneliness in me. | 3.52 | Moderately Agree |
| 4. makes me feel unmotivated to engage in activities outside. | 3.67 | Moderately Agree |
| 5. creates me a sense of disconnection to others. | 3.41 | Moderately Agree |
| Grand Mean | 3.68 | Moderately Agree |

*Legend; Strongly Disagree (1.00-1.80), Disagree (1.81-2.60), Agree (2.61-3.40), Moderately Agree (3.41-4.20), Strongly Agree (4.21-5.00)*

Table 3 shows the Impacts of excessive use of smartphones in terms of social health. The high gain of mean is indicator number 1, affects my ability in socializing with other people with the average of 3.92 Moderately Agree. The lowest mean is indicator number 5 creates me a sense of disconnection to to others with the average of 3.41 Moderately Agree.

Research by Mulyono (2021) supports this result highlighting how students use the internet to broaden their scope and make friends from anywhere. However, there are negative effects as well. Students sometimes prioritize their devices over face-to-face interactions, disrupting the social interaction process.

Additionally, students may rely on smartphones as companions when feeling lonely, leading lack of concern for the environment. Studies by Subagio and Hidayati (2017) and Muflih (2018) demonstrates a connection between loneliness, smartphone addiction, and impaired social interactions.

The results from Table 3 reveal the impacts of excessive smartphone use on social health, indicating that individuals perceive a hindrance in their ability to socialize with others while also experiencing a sense of disconnection from those around them. This suggests potential challenges in interpersonal relationships and communication skills, as well as feelings of isolation and detachment from real-world connections.

Research by Mulyono (2021) supports these findings by highlighting how students may prioritize devices over face-to-face interactions, leading to disruptions in the social interaction process.

Additionally, studies by Subagio and Hidayati (2017) and Muflih (2018) demonstrate a link between loneliness, smartphone addiction, and impaired social interactions. These implications emphasize the need for interventions that promote balanced smartphone use, encourage meaningful offline interactions, and address the negative effects of excessive smartphone dependency on social relationships and overall well-being.

Table 4. *Respondents Assessments of the Perceived Effects of Excessive Use of Smartphone to the Health and Well-being of Senior High School Students in terms of Emotional Health*

| *Indicator*<br>*Because of excessive use of smartphone…* | *Mean* | *Verbal Interpretation* |
|---|---|---|
| 1. exposes me to negative news and causes my emotion to become unstable. | 3.83 | Moderately Agree |
| 2. increases my stress and anxiety level, and a fear of missing out on trends. | 3.86 | Moderately Agree |
| 3. affects my emotions, which leads to mood swings like irritation and frustration. | 4.03 | Moderately Agree |
| 4. leads me to feel guilty when I prioritize screen time over responsibilities such as schoolwork. | 3.96 | Moderately Agree |
| 5. makes me less sad because of applications that reduce my boredom. | 4.26 | Strongly Agree |
| Grand Mean | 3.98 | Moderately Agree |

*Legend; Strongly Disagree (1.00-1.80), Disagree (1.81-2.60), Agree (2.61-3.40), Moderately Agree (3.41-4.20), Strongly Agree (4.21-5.00)*

Table 4 shows the Impacts of excessive use of smartphones in terms of Emotional Health. The high gain of mean is indicator number 5, makes me less sad because of applications that reduce my boredom with the average of 4.26 Strongly Agree. The lowest mean is indicator number 1 exposes me to negative news and causes my emotion to become unstable with the average of 3.83 Moderately Agree.

Putchavayala (2022) reported that the excessive use of smartphones has a negative impact on people's behavior. When the desire is not fulfilled, it can lead to anger. From anger, delusion arises, followed by a loss of memory, ultimately resulting in the deterioration of intellect and a weakened mind.

Similarly with the study of Samah & Singh (2018) the use of smartphone is seen as an important part of people lives because of its advanced features. Students use their smartphones to accomplish their various daily tasks. Smartphones provide a wide range of entertainment options, including games, videos, social media, and streaming services. Engaging in enjoyable activities and entertainment can help divert attention from negative emotions and provide emotions and provide temporary relief from sadness.

The results from Table 4 indicate that excessive smartphone use can impact emotional health. Individuals may rely on smartphone apps for emotional relief, but this dependency raises concerns about emotional regulation. Exposure to negative news can also weaken emotions. Research emphasize the behavioral consequences of excessive use, emphasizing the need for balanced smartphone use and healthy coping strategies to mitigate emotional well-being.

Table 5. *Respondents Assessments of the Perceived Effects of Excessive Use of Smartphone to the Health and Well-being of Senior High School Students in terms of Mental Health*

| *Indicator*<br>*Because of excessive use of smartphone…* | *Mean* | *Verbal Interpretation* |
|---|---|---|
| 1. distracts my concentration due to constant notifications from different applications. | 4.05 | Moderately Agree |
| 2. leads me to sleep deprivation that causes short term memory. | 4.01 | Moderately Agree |
| 3. makes it difficult for me to retain and recall information. | 3.9 | Agree |
| 4. makes it challenging for me to think independently. | 3.9 | Agree |
| 5. hinders my ability to think and blocks my mind from generating any thoughts. | 3.91 | Moderately Agree |
| Grand Mean | 4.00 | Moderately Agree |

*Legend; Strongly Disagree (1.00-1.80), Disagree (1.81-2.60), Agree (2.61-3.40), Moderately Agree (3.41-4.20), Strongly Agree (4.21-5.00)*

Table 5 shows the Impacts of excessive use of smartphones in terms of Mental Health. The high gain of mean is indicator number 1, distracts my concentration due to constant notifications from different applications with the average of 4.05 Moderately Agree. The lowest mean is indicator number 3 makes it difficult for me to retain and recall information with the average of 3.9 Agree and indicator number 4 makes it challenging for me to think independently with the average of 3.9 Agree.

Using electronic gadgets excessively can be distracting during learning activities, diverting students' attention, and making it difficult for them to focus (Martinez, 2021). This can have a negative impact on their academic performance and learning outcomes. Moreover, excessive gadget use can lead to limited understanding and reduced ability to remember information, as students may rely too much on quick access to information without fully understanding it. Poor time management is another consequence, as excessive gadget use can cause students to neglect important academic tasks, leading to rushed work and increased stress.

Excessive smartphone use can disrupt concentration and cognitive functions, impacting mental well-being. Challenges in information retention and independent thinking underscore the need for balanced technology use to mitigate distractions and enhance cognitive skills. Strategies to manage smartphone notifications and promote critical thinking are essential for maintaining mental health.

Table 6 shows the Impacts of excessive use of smartphones in terms of Physical Health. The high gain of mean is indicator number 5 strains my eyes, making them uncomfortable and dry with the average of 4.21 Moderately Agree. The lowest mean is indicator number 3 makes me physically active, resulting in changes in body weight with the average of 3.74 Moderately Agree.

It affirms that a significant number of students are experiencing vision-related issues as a result of smartphone and gadget usage. Many students frequently or often experience blurred vision and glare when viewing lights at night. Some students also notice a decline in

their vision at night.

Table 6. *Respondents Assessments of the Perceived Effects of Excessive Use of Smartphone to the Health and Well-being of Senior High School Students in terms of Physical Health*

| *Indicator*<br>*Because of excessive use of smartphone…* | | *Mean* | *Verbal Interpretation* |
|---|---|---|---|
| 1. | leads me to body fatigue and headaches. | 4.19 | Moderately Agree |
| 2. | can adopt bad postures like putting strain on my neck. | 4.08 | Moderately Agree |
| 3. | makes me physically active, resulting in changes in body weight. | 3.74 | Moderately Agree |
| 4. | leads to chest and back pain due to prolonged screen use. | 4.19 | Moderately Agree |
| 5. | strains my eyes, making them uncomfortable and dry. | 4.21 | Strongly Agree |
| | Grand Mean | 4.08 | Moderately Agree |

*Legend; Strongly Disagree (1.00-1.80), Disagree (1.81-2.60), Agree (2.61-3.40), Moderately Agree (3.41-4.20), Strongly Agree (4.21-5.00)*

Additionally, the study emphasize the effects of smartphone and gadget use on students' hearing, with some students consistently experiencing headaches and symptoms like hot ears, itchy ears, and hearing impairment. Furthermore, a portion of students always or often experience prolonged headaches, discomfort, or feelings of depression (Putchavayala, 2022). These findings indicate the potential negative impact of smartphone and gadget use on students' vision and hearing, highlighting the need for awareness and preventive measures.

In recent years, there has been a significant increase in the use of screen-based media across different age groups. However, the unregulated and excessive use of technological devices such as smartphones has resulted in various health issues. One particular concern is the rise of vision problems among youth and children (Yunus, Pinar & Fatma, 2018).

Table 7. *Summary Table on the perceived Impacts of Excessive Use of Smartphone to the Health and Well-being of Senior High School Students*

| | *Average Mean* | *Verbal Interpretation* |
|---|---|---|
| Social | 3.68 | Moderately Agree |
| Emotional | 3.98 | Moderately Agree |
| Mental | 4.00 | Moderately Agree |
| Physical | 4.08 | Moderately Agree |
| Grand Mean | 3.94 | Moderately Agree |

*Legend; Strongly Disagree (1.00-1.80), Disagree (1.81-2.60), Agree (2.61-3.40), Moderately Agree (3.41-4.20), Strongly Agree (4.21-5.00)*

Table 7 summarizes the effects of excessive use of smartphones by providing the average mean and corresponding verbal interpretation for four variables: social health, emotional health, mental health, and physical health. The mean for social health was 3.68, indicating agreement, while the mean for emotional health was 3.98, the mean for mental health was 4. and the mean for physical health was 4.08. These results suggest that using smartphones has the greatest effect on the student's physical health compared to their social health.

One related study that supports these findings is a research article by Nuraliyah et al. (2022), which examined the effects of excessive use of smartphones to the health and overall well-being of students. The study found that excessive use of smartphones had a negative effect on students physical, emotional, and mental health. The results suggest that excessive use of smartphones can pose a threat to the physical, emotional, and mental health of the students but may not have enough effect on their social health, but despite the effect on social health appearing to be relatively minimal, it is important to recognize that smartphone usage can still have some influence on social interactions and relationships among students.

Table 8. *Significant difference on the perceived impact of excessive use of smartphone when the respondents are grouped according to age*

| *Groups* | *N* | *Median* | *df* | *P - value* | *Significant Level* | *Decision* |
|---|---|---|---|---|---|---|
| 15-16 y/o | 38 | 4.08 | 2 | 0.01 | 0.05 | Reject Ho |
| 17-18 y/o | 36 | 4.18 | | | | |
| 19 y/o | 6 | 4.48 | | | | |

Table 8 displays that the calculated P-value is 0.01. At a significance level of 0.05 and 2 degrees of freedom, the critical value is 5.991. As the calculated H-value is higher than the critical value, the null hypothesis is rejected. Therefore, there is noteworthy difference in the responses of students when classified according to age. indicating that students aged 15-16, 17-18, and 19 years old have a different perception of the effect of excessive use of smartphones in terms of age.

The research findings align with the study conducted by Csibiet et al. (2021) that there are significant differences in the perception of the respondents in terms of age and smartphone use. The significant differences observed in problematic smartphone use based on age groups suggest that individuals of different age groups have distinct patterns of perception regarding smartphone use. These differences may be influenced by factors such as digital skills, social norms, and developmental stages. It is likely that younger age groups exhibit different perceptions and levels of addiction in their smartphone usage compared to older age groups.

These studies suggest that age can be a significant factor in determining students' perceptions of the effects of excessive use of smartphones. However, it is important to note that the results may vary depending on the context and methodology of the studies.

Table 9. *Significant difference on the perceived impact of excessive use of smartphone when the respondents are grouped according to sex*

| *Groups* | *N* | *Median* | *df* | *P - value* | *Significant Level* | *Decision* |
|---|---|---|---|---|---|---|
| Male | 30 | 4.00 | 1 | 0.002 | 0.05 | Reject Ho |
| Female | 50 | 4.23 | | | | |

According to Table 9, the calculated P-value is 0.002. At a significance level of 0.05 and 1 degrees of freedom, the critical value is 3.841. As the calculated H-value is higher than the critical value. Therefore, the null hypothesis is rejected, when a P- value of 0.002 indicating that there is a significant difference between the responses of male and female senior high school students.

The results of the independent samples t-tests revealed that there were statistically significant differences in smartphone addiction based on the respondents' gender and access to social media. The p-values for both variables were found to be less than the alpha level indicating that the differences observed in smartphone addiction based on gender and access to social media were unlikely to have occurred by chance. (Hashemi et al., 2021)

Overall, these findings emphasize the influence of gender on smartphone addiction. They suggest that these factors play a significant role in shaping individuals' levels of addiction to smartphones.

## Conclusions

Based on the findings, the following conclusions are derived:

Most of the respondents are female.

The researcher concluded that the student-respondents were not fully aware of the consequences of excessive use of smartphones.

The student-respondents did not have adequate control over their smartphone usage in their everyday lives. The effects excessive use of smartphones as perceived by students is moderately agree.

The demographic factors have a significant influence on students' perception of using smartphones in terms of age and sex. The perception of the respondents when grouped according to profile does vary.

Based on the findings and conclusion the researcher made the following recommendations:

To the School Administrators, they may implement different strategies to engage senior high school students and promote their well-being regarding smartphone use. This can include organizing educational workshops, implementing policies that encourage responsible smartphone use, and raising awareness about the potential risks associated with excessive smartphone use.

To the Parents, they may continue to guide their children on using smartphones in moderation and maintaining a healthy balance between screen time and other activities. They should foster open communication about the potential negative effects of excessive smartphone use and provide support in setting boundaries and limits.

To the Teachers, they may consider conducting further research to examine the impacts of excessive smartphone use on the health and well-being of senior high school students. This research can explore the effects on social interactions, and mental health. Additionally, teachers should provide guidance and education on responsible smartphone use to students.

To the Students, they may develop strategies to manage screen time, such as setting limits, taking regular breaks, and engaging in offline activities. Seeking support from parents, teachers, and school counselors can be beneficial if needed.

To the Future researchers, they may conduct similar studies to gain a deeper understanding of the effects of excessive smartphone use on the health and well-being of senior high school students. Exploring different variables, such as duration of smartphone use, specific activities engaged in, and the impact on various aspects of well-being will contribute to the development of effective approach.

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