

THE RELATIONSHIP BETWEEN SEDENTARY ACTIVITY AND SCREEN TIME ADDICTION AMONG ELEVENTH GRADERS

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ABSTRACT

In a digitally driven world, adolescents are exposed to the digital world, which has resulted in a rise in sedentary activity and screen time, raising serious concerns about their health and well-being. This study investigates the association between sedentary activity and screen time addiction among eleventh graders. Researchers gathered information through standardized questionnaires and interviews. The study used a sequential explanatory research design, combining quantitative and qualitative techniques. The researchers discovered that eleventh graders spend a significant amount of time engaged in sedentary behaviors, notably socializing and screen-related activities. Screen addiction occurs frequently in their habits, notably with the use of social media platforms. The statistical study shows a significant correlation ($T = 0.028411$) between sedentary behavior and screen time. Using thematic analysis, researchers identified the factors that contribute to screen time. The factors include screen addiction, pastime activity, enjoyment, stress reduction, and source of information and networking. To reduce the detrimental effects on their health, the researchers recommend establishing activities encouraging active socialization, balancing screen time, and limiting electronic device usage. Understanding these patterns is critical for fostering a better lifestyle and well-being among eleventh graders in a digitally connected society.

Keywords: Sedentary Activity, Screen Time Addiction & Sequential Explanatory Research.

Introduction

Adolescents are increasingly exposed to a digital environment that has a profound impact on their daily routines as they grow from infancy to maturity. Among these impacts, two distinct trends have emerged: the predominance of sedentary activity and screen time addiction. Understanding the complex relationship between these occurrences, especially among eleventh graders, is crucial as we try to address the health and well-being of this age group in a digitally driven environment. Sedentary activity, typified by prolonged periods of physical inactivity, is a growing issue among adolescents, with potential health and developmental effects. Simultaneously, screen time addiction has become increasingly prevalent, showing itself as excessive use of smartphones, tablets, laptop computers, and video games, raising concerns about its impact on mental and physical health. Eleventh graders, who are on the verge of maturity, are an important group to research since their habits and actions determine their future.

In today's digital world, sedentary activity, and screen time addiction among eleventh graders are on the rise. Many students spend extended periods in front of screens, whether for academic, social, or recreational objectives. Excessive screen time and sedentary activity are linked to not only physical health issues like obesity and bad posture but also to mental health issues including social isolation and sleep disruptions.

The following global and local related literature and studies are designed to aid understanding of the issues of sedentary activity and screen time addiction to adolescent well-being.

Sedentary Activity in Global Perspective

According to Jung et al. (2020), sedentary behavior is any waking conduct, such as sitting or reclining, that needs less than 1.5 metabolic equivalent tasks (MET). This definition was proposed by the Sedentary Behavior Research Network in 2012, and it is now the most widely used definition of sedentary behavior. It includes watching television, playing video games, using a computer, sitting at school or work, and sitting when traveling.

Furthermore, according to Pinto A. J. et al. (2023), sedentary habits are defined by decreased energy expenditure while sitting or reclining. Several experimental models can be utilized to gather findings that helped the researchers understand the physiology of SB. The physiological evidence for body weight and energy balance, intermediate metabolism, the circulatory and respiratory systems, the musculoskeletal system, the central nervous system, and immunological and inflammatory responses are all examined.

Similarly, in Salveira's investigation, E, A. et al. (2022) Sedentary Behavior is defined as

any activity that requires less than 1.5 metabolic equivalents (METs) of energy while sitting or lying down, such as watching television, spending more time on screen time, sleeping, and other activities that do not involve any motion or lying down.

According to Atkin, A. J., Gorely, T., Biddle, S. J., et al. (2008), the most common habits after school are technology-based sedentary behavior, schoolwork, and physical activity.

Physical activity decreases and sedentary behavior increases during adolescence. Sociocultural disparities in physical activity and sedentary behavior predict adult obesity and cardiovascular disease risk in adolescents. Since these behaviors are largely established by the age of 11-12 years, early intervention programs are needed to solve them (Brodersen NH, Steptoe A, & Boniface DR, et al. 2006).

Furthermore, studies on the correlates of sedentary behavior in adults found that time spent sedentary increased with age, full-time occupation, and higher education. There was an inverse link identified with TV time, which was reported more frequently by the least advantaged adults. In older people, sedentary behavior was associated with current co-morbidity and a sense of safety, as well as an inverse association with physical activity time. Sedentary behavior in children increased with age, was related to domestic factors such as parental regulation of screen time and the availability of a TV in the child's bedroom and showed an inverse association with sleep time and physical activity. A. E. Bauman, C. B. Petersen, and K. Blond, et al.

There is no evidence that physical activity and sedentary behavior increase the risk of gastrointestinal disease. They employed Mendelian randomization to analyze these relationships. The findings suggest that a sedentary lifestyle may have a role in the development of a variety of gastrointestinal illnesses (Chen J. et al., 2023).

Furthermore, Huerta-Urbe et al. (2023) discovered that low levels of physical activity and cardiorespiratory fitness, as well as prolonged sedentary behavior, may explain a portion of the variation in glyciated hemoglobin and a portion of the risk for poor hypoglycemic control in adolescents.

Sedentary behavior rises with affluence and urbanization, with women being more sedentary. One-third of adults and four-fifths of children do not meet recommended levels of physical activity. Increased screen time has a negative influence on health and is the fourth leading cause of death (Boek A. et al., 2019).

Screen Time Addiction in Global Perspective

The study's goal was to identify the link between screen time addiction, borderline personality disorder, and psychological discomfort in adults. This study focuses on the mental health effects of screen addiction habits, as well as their linkages to other mental health issues (Ahmed, A. 2022). According to Amir et al. (2022). The global impact of the COVID-19 pandemic resulted in lockdown, decreased physical activity, and increased screen time, which could lead to addiction and weariness. Monitoring screen time is essential for effective fatigue management. Excessive screen time is associated with poor sleep and risk factors for cardiovascular disease such as hypertension, obesity, low HDL cholesterol, poor stress management (high sympathetic arousal and cortisol dysregulation), and insulin resistance. Two more physical health consequences include impaired vision and decreased bone density (Gadi Lissak, 2018). In addition, increasing screen use has been linked to lower self-esteem, higher incidence and severity of mental health difficulties and addictions, delayed learning and acquisition, and an increased risk of premature cognitive decline (Neophytou E, Manwell L. A, & Eikelboom F., 2019).

Sedentary Activity in Local Perspective

According to research conducted in Cebu, 48% of Filipino adolescents spend two or more hours each day watching television, while 52% spend less than two hours. However, according to the 2015 GSHS, 31.9% of Filipino teenagers sit for three or more hours each day, indicating that their activity includes sedentary behavior (Cagas, J. Y., Mallari, M. T., Torre, B. A., Kang, et al., 2022).

For several years, obesity and toxic health behaviors such as sedentary lifestyle, high carbohydrate intake, low exercise, high levels of stress, and insufficient use of electronic devices such as smart phones and tablets, among others, have been directly and indirectly causing obesity and its impact and health disorders (Ramirez G. & Muoz B. L. 2023).

The findings of the survey revealed that the students have unhealthy drinking and smoking behaviors. They were physically active, but the intensity, duration, and frequency of their PA were insufficient to produce an aerobic benefit. The study's conclusions were influenced by substantial physiological and methodological difficulties. PA had no statistically meaningful effect on the learners' VS. Aerobic fitness, physical activities, and vital signs are also factors to consider (Dela Vega F. A., Buluran M. J., & Khademian S., 2008).

Aşut, Abuduxike, S. Acar-Vaizolu. & Cali S. (2019). used the Turkish variant of the A test for internet addiction to conduct the study, which revealed that 17.2% of participants were

overweight or obese, 18.1% had internet access, and 40.7% spent more over two hours of screen time every day. Buchtot, K. & Hee K., (2020), stated that one of the unhealthy habits that youths regularly indulge in. Indeed, their increasing access to and use of screen-based media devices such as mobile phones has a negative impact on their lifestyle choices, particularly their sleeping patterns.

Screen Time Addiction in Local perspective

Excessive screen time use in youths appears to be associated with mental health difficulties, according to Santos et al., (2023). Adolescents are heavily reliant on screens and regularly express concerns about their mental health. The study highlights the prevalence of adolescent screen use and its influence on mental health.

Related literature and studies underlined the harmful impact of sedentary activity including health hazards and mental issues. These practices, which are frequently coupled with activities such as screen time, have been related to a variety of negative effects, ranging from obesity and cardiovascular disease to mental health difficulties. The studies that followed are all about the detrimental impact and repercussions of sedentary activity and screen time addiction. This study only looks at the association between these two factors in eleventh graders and the causes behind their behavior. Thus, there is no previous study in One of the Secondary Public in Cluster I, Division of Pampanga, this is the first study to be undertaken here.

The goal of this study is to discover whether prolonged periods of inactivity and excessive screen use are related, and if so, to what extent and why. By collecting and analyzing data from eleventh graders without intervening in their natural settings, the study aims to provide valuable insights into the potential consequences of a sedentary lifestyle on screen time addiction in this specific age group, contributing to our understanding of adolescent health and behavior. This study will contribute to the body of knowledge about sedentary activity and screen time addiction by providing new and important information regarding the relationship between the two variables. This paper will help people to understand what a sedentary activity and screen time addiction are, and the reasons of learners why these two variables occur.

Conceptual Framework

The Input-Process-Output (IPO) paradigm, which depicts a system in three stages, process, and output- was used by the researchers. The first frame includes the sedentary lifestyle, screen time addiction, and the reasons behind these behaviors of Eleventh Graders. The second frame represents the process where the researchers' used questionnaires, statistical treatment, informal

interviews, thematic analysis, and data analysis to collect and analyze the data from the target respondents. The last frame shows the target results of the study in which variables are determined and analyzed.

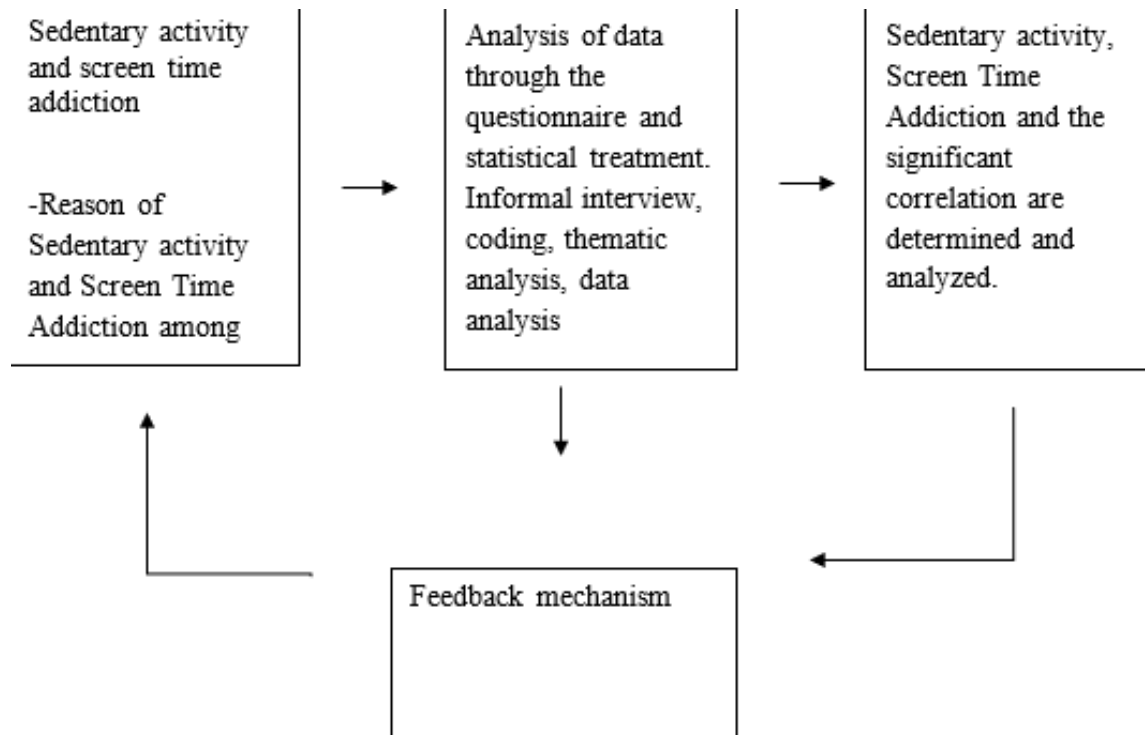


Figure 1: Paradigm of the Study

Statement of the Problem

The researchers aim to explore the relationship between sedentary activity and screen time addiction among Eleventh Graders in one of the Secondary Public Schools in Cluster I, Division of Pampanga during the school year 2023-2024.

1. How can the sedentary activity of the respondents be described?
2. How can the screen time addiction of the respondents be described?
3. Is there any significant relationship between sedentary activity and screen time addiction among Eleventh Graders?
4. What are the contributing factors behind the sedentary activity and screen time addiction of the participants?

Hypothesis

There is a significant relationship between sedentary activity and screen time addiction among Eleventh Graders.

Significance of the Study

This research is made to provide important information and knowledge about the relationship between sedentary activity and screen time addiction from the target respondents, recent studies, and related literature. This study holds significant importance as it addresses the potential health impacts of sedentary activity and screen time addiction among eleventh graders. Understanding these connections can help identify at-risk individuals and promote healthier habits.

The individuals that will benefit from this study are the following:

Learners. Learners must understand and be aware of their behaviors. This study will help them to comprehend the negative effects of the said behaviors on their health. By having a deeper understanding of these behaviors' students will be expected to reduce, prevent, and fix their activity.

Parents. This research will benefit the parents of the learners by providing crucial information on their child's activity and health. Furthermore, parents will understand how important it is to have a better activity for their children.

Teachers. The data that this study will gather will help teachers to have a better understanding of the learners' activity and health. Teachers can use this study to come up with a teaching technique to help learners be more active physically.

School Administrators. With this study school administrators will be more aware of the situations of the learners moreover school administrators might come up with intervention plans to promote better activity and reduce screen time among learners.

Future Researchers. This study will serve as a helpful reference for learners who intend to conduct a similar study. This study can also serve as a guide so that future researchers can conduct their studies more effectively.

Scope and Delimitation

The study only includes eleventh graders from one of Pampanga's Cluster 1 Division's secondary public schools. This demographic is a subset of the adolescent population. The study investigated the sedentary activity of the participants, including time spent sitting, lying down, or doing leisure activities. This study examined patterns of excessive screen use that are linked to other behaviors among the project's target participants. The primary purpose of the study is to look at the relationship and correlation between sedentary activity and screen time addiction.

Definition of Terms

Sedentary Activity. Sedentary activity is defined as any behavior that requires 1.5 metabolic equivalents (METs) of energy spent while sitting, reclining, or lying. Sedentary conduct is often defined as each time a person sits or lies down. Sedentary activities include watching television, playing video games, using computers (together known as "screen time"), traveling, and reading (Tremblay, M.S., Aubert, S., Barnes, J.D. et al. 2017).

Screen Time Addiction. Screen time refers to the "total amount of exposure to video-capable devices"; this includes "smartphones, tablets, PCs, televisions, and other similar gadgets," as well as video game consoles (Sanders et al., 2016).

Method

Research Design

The researchers collected the data and information for this investigation using the sequential explanatory research design. The quantitative phase builds statistical links to provide a broad perspective, whereas the qualitative phase delves into the student's experiences and attitudes. By combining numerical data with personal insights, researchers can build a more complete picture of the problem, leading to more valid and effective findings. The sequential explanatory design is made up of two distinct strands that are applied in the following order: a quantitative strand that collects and analyzes numerical data, followed by a qualitative strand that collects and analyzes textual data. A sequential explanatory design is widely used to explain or interpret numerical data, especially unexpected ones. Data for sequential explanatory study design are gathered in two phases throughout time. Therefore, the researchers must gather and analyze quantitative data first. The qualitative data are collected and compared to the quantitative results in the second part of the study (Ivankova, Creswell, & Stick, 2006).

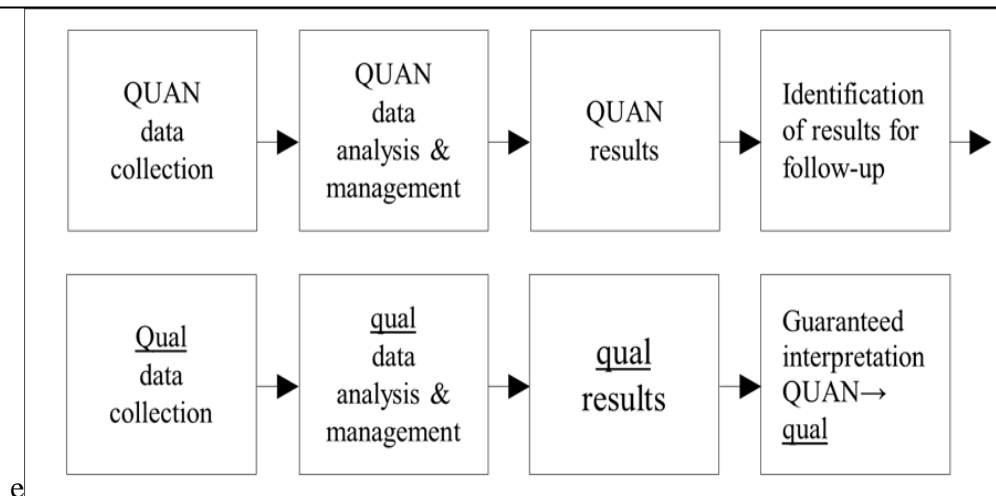


Figure 2: Model of Sequential Explanatory Design

Respondents/ Participants

The respondents in the quantitative portion of the study were eleventh-grade students from one of Pampanga's secondary public schools in the Cluster I Division. The respondents were chosen using a stratified random selection technique, and the study's target respondents were 100. These respondents completed standardized questionnaires about their sedentary behavior and screen time addiction.

The researcher used stratified random sampling to choose the study's target respondents. Researchers can use stratified random sampling to select a sample population that is representative of the entire population under study. Stratified random sampling is a sampling method in which a researcher divides the entire population into multiple homogeneous groups (strata) and then randomly selects final members for research from each stratum, resulting in lower costs and greater efficiency (Fleetwoods, 2023). Using the population analysis results to determine strata, this method selects individuals at random from each sub-population, ensuring that each sub-population is represented in the sample while keeping the same strata proportions (Stefan, 2021).

In the qualitative phase of the investigation, the participants are the outlier. Outliers are data points having extreme or high scores that deviate from the rest of the set (Bhandari, 2024). The participants were chosen using a homogenous random sampling technique. The study's goal number of participants is eight students.

During the qualitative part of the investigation, the researchers used a homogeneous sample technique. Homogeneous sampling is a form of purposive sampling method whose purpose is to

obtain a homogeneous sample, which is one in which all the units share the same qualities or traits. A homogenous sample is typically utilized when the research questions are relevant to the target group's features, which are then thoroughly studied (Lund Research, 2012). Researchers were able to deeply study and describe a specific population using homogeneous sampling approaches.

Instrument

Phase I Quantitative

This study used standardized questionnaires to obtain both quantitative and qualitative data. In the first phase of the study, the first phase is composed of two (2) parts. Part I is designed to investigate the sedentary activity of eleventh graders. This study employed the Adolescent Sedentary Activity Questionnaire (ASAQ) to investigate the sedentary activity of the target respondents. The Adolescent Sedentary Activity Questionnaire (ASAQ) created by Hardy et al. was used to assess the participants' sedentary activity levels. The previously established test-retest correlations were 0.70. The ASAQ assesses the amount of time spent each day engaging in 11 different sedentary habits. Screen time, education, travel and cultural activities, and social activities are the activity categories. The total time spent in each category is added together to calculate the overall sedentary time per weekday and weekend day. Sedentary behaviors 4 h per day are regarded high levels of sedentary activities in the ASAQ, whereas sedentary behaviors 4 h per day are considered modest levels of sedentary behaviors. This instrument was adopted from the study of Ahmad Bahathig, A., et. al (2021). For the part II the screen time activities were measured using the Questionnaire for Screen Time (QueST) It is a questionnaire consisting of the following items: 1) activities linked to studying and doing homework; 2) work/internship-related activities; 3) watching videos such as series, movies, news, and sports; 4) playing electronic games; and 5) utilizing social media or chat apps. There is one question in the questionnaire for each construct that asks, "How much time do you spend [studying, watching video lessons, reading, doing research or schoolwork] on your computer, television, tablet, cell phone, or other electronic device on a normal weekday/weekend day?" The response options were continuous (hours and minutes) and asked for both weekday and weekend days. In accordance with previous studies assessing the QueST characteristics, the volume in each ST was classified as less than 2 h (2 h), 2 h up to 3 h and 59 min (2 h to 4 h), and 4 h or more (4 h). The QueST revealed satisfactory content validity as certified by experts and teenagers using content validity index (CVI) analysis for clarity and representativeness. Gwet's AC2 agreement coefficients ranged from 0.54 to 0.82 for weekdays and 0.56 to 0.87 for

weekends in the same group as in the initial validation research. This instrument is adopted from the study of Knebel, M., Costa, B., Santos, P. dos, Sousa, A. C. de, & Silva, K. (2020).

Phase 2 Qualitative

In the qualitative phase, an interview protocol guide was designed based on the quantitative data acquired. Data was collected at a location agreed upon by both informants and researchers. The interview lasted for approximately 5-10 minutes. An individual designated as the Interviewer asks questions face to face with another person or persons, they are labeled as the Interviewee/s, who responds to the questions given. Interview refers to any one-on-one conversation between two or more people for a specified reason. Interviews provide in-depth information as well as clarifications and explanations to the problems or questions that are being addressed (Omar Ahmad, 2012). The interview began with establishing rapport, signing the consent form, and learning about the person's past. The interview provides specifics about the participant's experience by asking focused questions based on the results of the quantitative phase. The qualitative instruments were based on the findings gathered in the quantitative phase. The researchers provided the participants with the opportunity to elaborate and describe their thoughts, as well as steer their responses into areas that they perceive as large. This provides the researchers with new and critical pieces of information to help improve the study.

Data Collection

Phase 1 Quantitative

The researchers used standardized questionnaires to gather the data needed to conduct the first phase of the study. The researchers conducted the study in one of the Secondary Public Schools in Cluster I, Division of Pampanga through a survey, because of the advantages of the survey method. The researchers explained to the respondents about the importance of their response to the study. The researchers clarified some terms to the respondents/ participants so that the respondents/ participants can answer the questions and gain full knowledge of the subject of the study. To gather the target respondents the researchers used a stratified sampling technique. Since the goal of this study is to determine the significant correlation between Sedentary lifestyle and screen time addiction among eleventh graders, the researchers believe that this method is the most appropriate in choosing the sample for the study. After answering the questionnaire, the researchers collected and tallied the data for interpretation. To find the significant correlation between the two variables the researchers used the T-test technique.

Phase 2 Qualitative

In the qualitative section, the researchers obtained a letter request for the validation of the interview questionnaires. The researchers then conduct interviews with participants based on the quantitative results. Participants were given the opportunity to provide pertinent ideas and perceptions about the issue. To gain a better understanding of students' s. This let the researchers provide feedback on sedentary and screen time addiction for their study. An interview guide protocol was done with persons who received an extreme score from the entire population. These were regarded as outliers and used as participants in the qualitative phase. Outliers are data points with extreme or highest scores that differ from the rest of the data points in a set (Bhandari, 2024). Sedentary behavior and screen time addiction, the researchers cross-validated their responses. The integration of quantitative and qualitative facts and discoveries led to a deeper understanding. It can be an acceptable result for a subject who has a severe case of sedentary and screen time addiction. The interview step involves a written observation. Respondents were given the option to speak freely and explain their insights to add depth to their answers. An audio recording was utilized for documentation purposes once the participants' consent has been obtained. This also includes an interview transcription. Participants who can participate and have met the prerequisites were scheduled to meet in person. Interviews were recorded and saved as audio files, which then transcribed verbatim. The interview lasted 5 to 10 minutes for each participant, and all participants received a note of appreciation.

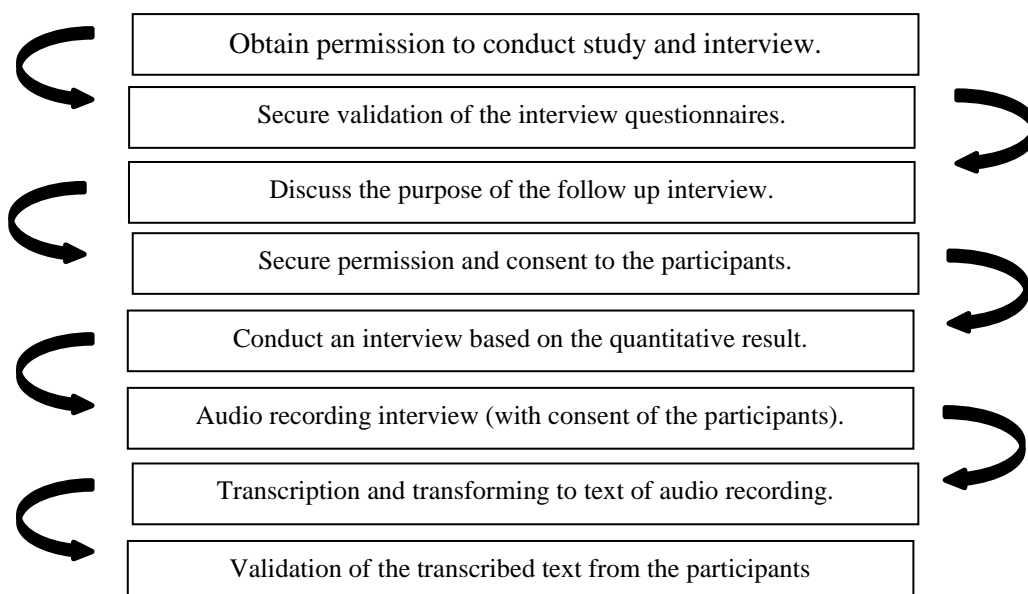


Figure 3: Qualitative data gathering process used in the study.

Statistical Treatment/Data Analysis

Phase 1 Quantitative

Upon collecting the data from the standardized instrument, the researchers used two procedures, the quantitative and qualitative phase. In the quantitative part, the researchers arranged and prepared the data collected and used appropriate statistical tools to provide valid, accurate, reliable, and precise interpretations of the data. The researchers utilized the T-test technique to identify the significance.

The following statistical treatment was used for the data analysis:

Mean for Grouped Data. The mean of the given number is computed by dividing the sum of the given number by the total number of populations in a grouped data set.

Standard Deviation. is a measure of data dispersion from the mean or the overall population size.

Hypothesis Testing. Is the process of evaluating evidence to determine whether a claim or assumption should be accepted or rejected.

Phase 2 Qualitative

In the second phase of the study, the qualitative data analysis spiral of Creswell and Poth (2018) was employed in thematic analysis to evaluate and analyze data to clarify, explain, and understand the data acquired from study participants' responses. The data analysis spiral is a straightforward five-step process for qualitative data analysis. The first stage is to manage and organize the data, often known as data preparation. Step two is to read and record the ideas. Step three involves describing and categorizing codes into themes. Step four focuses on establishing and assessing interpretation. The final step involves representing and visualizing data. Data analysis means collecting answers by asking questions. Creating and developing an analysis based on the information that has been collected from the participants. This phase involves the qualitative interpretation of quantitative results gathered from respondents. This phase's process involves the transcription of interviews. Transcribed data were extracted and labeled as units of meaning using key point coding. Coding with commonalities was organized into concepts, which then examined to create themes. The researchers cross-validated the participants' responses to gain a better understanding. The combination of quantitative and

qualitative results and conclusions provides a deeper understanding of students' attitudes around sedentary and screen time.

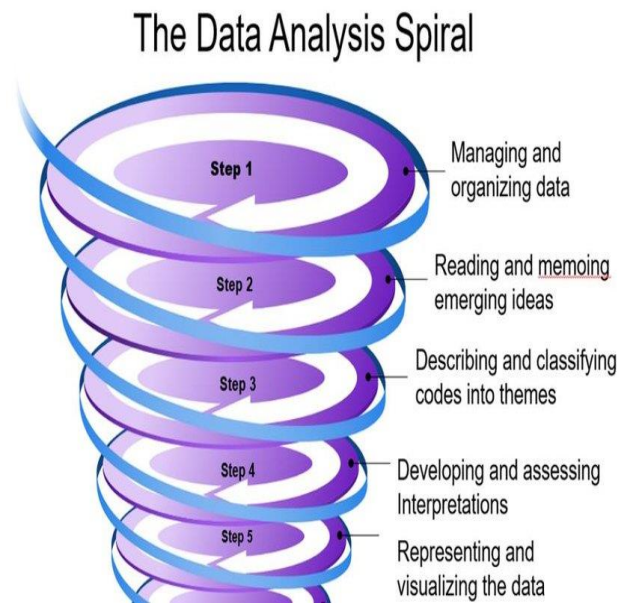


Figure 4: Data analysis Spiral

Ethical consideration

The researchers embraced and put into practice high ethical standards. The participants' identities were strictly maintained. The study's goal, procedure, and outcomes were clearly explained to the respondents/ participants before conducting the study. The researchers emphasized that participation in this study is completely voluntary, and that no monetary compensation is involved. The target respondents/ participants signed an informed consent before conducting this study. The data and material that the researchers used were original, accurately transcribed, checked by the respondents/ participants, and were subjected to peer debriefing. There is no making up of data or adjustments of outcomes. In the second phase, the participant's responses were translated using appropriate terms and undergone briefing from the participant.

Results and Discussion

Table 1. Sedentary Activity of the Respondents

| Item no. | Sedentary Activity | Mean | Verbal Description |
|----------|--|------|--------------------|
| 1 | Watching TV? | 1.53 | 0 hour |
| 2 | Watching videos/ DVDs? | 1.83 | 30mins-2hours |
| 3 | Using the computer for fun? | 1.93 | 30mins-2hours |
| 4 | Using a computer for doing homework? | 2.25 | 30mins-2hours |
| 5 | Doing homework not on the computer? | 1.88 | 30mins-2hours |
| 6 | Reading for fun? | 1.86 | 30mins-2hours |
| 7 | Being tutored? | 1.59 | 0 hour |
| 8 | Travel (car/bus/train)? | 2.4 | 30mins-2hours |
| 9 | Doing crafts or hobbies? | 2.74 | 3-4 hours |
| 10 | Sitting around (chatting with friend/s on the phone/chilling)? | 3 | 3-4 hours |
| 11 | Playing/practicing a musical instrument? | 1.94 | 30mins-2hours |

Data projects the descriptive statistics of the student’s sedentary activity in terms of their daily activities. The table clearly reflects that the statement “how long do you spend sitting around (chatting with friend/s on the phone/ chilling?)” got the highest mean of 3 and interpreted as **3-4 hours** considering, the statement “how long do you spend watching TV?” receives the lowest mean of **1.53** and interpreted as **0 hour** and it can be noted also that aside from the fact that most of the statement have similar verbal interpretations, the interval of mean is not close together. It can be inferred that the students’ biggest contributor in their sedentary activity is sitting around (chatting with friends/s on the phone/ chilling). These activities are the major contributor to the students’ sedentary activity.

As mentioned by N. Owen, G. N Healy, C. E. Matthews, and D. W. Dunstan (2012) in their study, Humans now spend a lot of time sitting around, using computers, and playing electronic games, all of which need prolonged periods of low metabolic energy expenditure. Our view is that sedentary activity is more than just the lack of moderate to vigorous physical activity; it is a distinct set of behaviors, with distinct environmental factors and a variety of potentially unique health outcomes.

Table 2. Screen Addiction of the Respondents

| Item No. | Questions | Mean | Verbal Descriptive |
|----------|---|------|--------------------|
| 1 | Studying using electronic devices? | 2.41 | 30mins-2hours |
| 2 | Performing work/internship-related activities using electronic devices? | 2.19 | 30mins-2hours |
| 3 | Watching Videos? | 2.81 | 3-4 hour |
| 4 | Using social media/ chat applications | 3.46 | 5-6 hour |
| 5 | Playing Video games/ online games? | 3.03 | 3-4 hour |

Table 2 depicts the descriptive statistics of students’ screen time addiction in terms of regular day-to-day activity. The table also suggests that among all statements, the statement “How long do you spend using social media/ chat applications” got the highest mean of **3.46** and was interpreted as **5-6 hours**. On the other hand, the statement “How long do you spend performing work/internship-related activities using electronic devices?” got the lowest mean of 2.19 and was interpreted as 30 mins to 2 hours. This indicates that despite having the lowest mean, the means are close together.

It is to be noted that the percentage of the student’s screen time is mostly on watching videos, using chat applications, and playing video/ online games.

Ashvin Shood and Janki Modi Avari (2023) state in their study that as technology progresses, children and teenagers are using cell phones at an unprecedented pace to access their social media accounts. Social media programs serve several functions, including peer connection, entertainment, education, and creative expression.

Table 3: Significant Relationship Between Sedentary Activity and Screen Addiction of the respondents

| General Mean of Sedentary | General Mean of Screen Time | T-test |
|---------------------------|-----------------------------|----------|
| 2.07 | 2.78 | 0.028411 |

Table 3 indicates the correlation table between sedentary activity and screen time addiction among eleventh-grade students. The result is 0.028411, This indicates that there is a significant correlation between sedentary activity and screen time. According to the study of C. L. M. Lourenco, T. F. De Sousa, and E. L. Mendes (2019), the Correlation between sedentary behavior and smartphone use ranged from weak to moderate correlation in both genders. Smartphone use is positively connected to sedentary behavior.

Sequential Explanatory Data on Contributing Factors Behind the Sedentary Activity and Screen Time Addiction of the Participants

This study has identified several areas where further research is warranted to continue expanding knowledge about students' sedentary activity and screen time addiction. The results showed that the student's major contributors to their sedentary activity and screen time are sitting around chatting with friends or chilling around and using social media chat applications. The researchers believe that a more comprehensive investigation is needed. The need to explain and investigate deeper about sitting around and using chat applications among students is to answer questions regarding why students spend a high amount of time doing the behaviors that have been mentioned. Through qualitative research, the researchers acquired an in-depth analysis to understand more about these behaviors among eleventh graders.

In addition, this qualitative method allows researchers to find and comprehend complex socio-psychological patterns that drive pupils' behavior. The study's goal is to evaluate and clarify the underlying interests, desires, and other factors influencing eleventh graders' behavior with sedentary activities and screen usage by immersing them in their experiences and views. Through this further investigation, researchers want to answer concerns about the prevalence and impact of the behaviors among students.

Qualitative Findings

In the second phase of the study, findings and discussion were presented according to the sequence of the themes enumerated in the second phase of the study. The specific order is as follows: addiction, pastime, enjoyment, stress relief, and tools. The findings of the study were obtained from the participants.

Screen Addiction

The eleventh graders spend a lot of time using their cellphones or other gadgets, more than six hours every day. In addition, most of them are totally engaged with their gadgets which was the primary cause of screen time addiction.

This research finds out that the eleventh graders are being engaged in screen time which

leads to screen addiction. This addiction can lead to different forms, such as excessive use of mobile phones, prolonged engagement in online gaming, or dependency on various digital gadgets. The terms "excessive screen use, long period use of mobile phone, high screen time, screen addiction, phone addiction, addiction to gadgets, online games addiction, addicting and excessive exposure to screen all point towards the concept of addiction to digital devices and online activities.

In support to the study of Miroslav Rajter et al. (2019), internet usage is particularly significant in adolescents nowadays. Besides the benefits of, internet and screen usage give certain risks of addictive behavior. Internet Addiction is the most spread scale for measuring internet addiction. Similarly, to the study of El Asam et al. (2019) it is common to “excessive internet use”, “long period of internet use.”

(As soon as I get home I will sleep and when I wake up, I will use my phone to watch TikTok and use messenger, i guess 5 hours or more) “Kauwi ko gagawin ko matutulog tas pagggising ko naman magpphone tapos nanood ng tiktok tsaka mag messenger, siguro 5 oras ganyan or lagpas”. -O1

(Right after I go home, I will take a nap first usually I will wake up at 6 pm then I will sleep until around 11 pm during those hours I use my phone) “Pag uwi ko galing sa paaralan syempre matutulog muna ako tas magigising po ako ng 6pm matutulog ulit ng 11pm tas ayun po gumagamit lang ako ng phone non”. -O3

(When I get home, the first thing I do is to fix my stuff and I'll clean right after. And after cleaning, maybe starting 6 to 10 is the duration of me using my phone.) “Ahm ako po kase pag uwi ko po, una ko muna gagawin is mag aayos muna ako ng mga gamit then mag lilinis po then after ko pu nun siguro po simula po mga 6 ganun hanggang 10 yung paggamit ko po ng phone”. -O5

(After school, I will use my phone and social media for about 1 hour and after that I will take a nap. After I take a nap, I will use my phone again until I sleep. I guess I usually sleep at 11 pm.) “After school kasi mag phone ku and gumamit social media mga 1 hour after nanita mattud kupa tas kayari kung mettud mag phone ku ulit angga keng makatutud ku. Siguru, madalas mattud ku 11 na”. -

O6

(What I usually do when I get out of school is go straight home, and then what I spend using gadgets or social media apps is checking announcements in group chats. After that I will play online games with my friends. I think 5 hours or more.) “Ang karaniwang ginagawa ko paglabas ng paaralan ay daretso uwi

agad and then ang ginugugol ko sa pag gamit ng gadgets or social media apps ay ang pag check sa mga announcement sa mga group chat. Pagtapos non maglalaro ako ng online games kasama mga kaibigan ko. Siguro 5 oras or dakal pa” -O8

(I have already tried to limit the usage of my phone, but the challenge of mine is that I get bored whenever I don't use my phone.) “Na try ko na pong I limit yung paggamit ko ng phone then yung mga challenges ko po parang na b bored po ako kapag diko gamit phone ko”-O5.

(Yes, I have tried to limit the use of gadgets. Sometimes it's hard to do so, and that's because I am addicted to using my phone. To limit it I just clean or play with my pets at home.) “Oo, nasubukan kona bawasan paggamit ko ng gadget. Pero minsan mahirap gawin kase na adik nako sa paggamit ng phone. Ginagawa ko para mabawasan ko naglilinis ako okaya makikipag laro sa mga alaga ko sa bahay”. -O8

(Yes, especially tiktok since it is entertaining. I use social media for a long time, and I do not mind the time that I spend.) “Oo, lalo na sa tiktok kasi nakakaentertain. Matagal ko ginagamit ang social media tas dikona iniisip kung gano katagal” -O1

(Yes, whenever I feel that I am having a problem with my vision I will take some time to rest and not use my phone for a while.) “Oo, kapag lumalabo na ang aking mata gagawin ko magpapahinga muna ako” -O1

(I tried to limit my use of the screen especially whenever I feel pain in my eyes. I will stop for a while and close my eyes to remove the pain.) “Nasubukan kunang limitahan kase kapag masyado akong gumagit ng gadyet sumasakit ang mata ko kaya titigil munako para mawala yung sakit” -O3

Pastime Activity

The pastime of students is spending a lot of time and effort on social media to help them sleep. Since social media is included in the student's lifestyle and they use it to get sleep, they're spending a lot of time on social media watching, talking, and posting anything in different media to feel tired and too easy to sleep. As stated in the study of Oktavainen (2020), Through social media people can digitally engage in social activities with other users over the internet. Social media is used to display an excessive amount of self-existence that influences a nation's worldview, way of life, and culture.

(Right after I went home the first thing, I would do was clean my room and then use my cellphone to check if there were missing activities. I use my phone until I get sleepy) “Pag kauwi kopo nag lilinis muna ako tapos aayusin kopo muna yung kwarto tapos mag ce-cellphone titignan ko kung may mga missing activities. Ginagamit kopo phone ko hanggang sa makatulog ako” -O2

(The usual activities that I do after school are to bond with my friends or eat outside. The time that I spend sitting around depends on what time I sleep. Most of the time I sleep at 10:30 so probably 6 hours.) “Mga karaniwang ginagawa ko po sa paglabas ng paaralam is minsan nakikipag bonding sa mga kaibigan or kumakain sa labas Ganon tapos gaano kahaba yung oras na ginugugol ko sa pag upo ay depende po kung anong oras ako matutulog. Madalas po natutulog ako ng 10:30 kaya siguro po 6 na oras” -O4

(I get home at around 3 pm. After that I will do my task first then sit around and use social media for about 5 hours.) “Siguru pu mga kayi pu siguru ahhhh mumuli ku pu kasi mga around 3 pu maka uli naku so kauli ku pa pu agad ahhh kikilus kupa tas lukluk ampo nag social media po so parang 5 hours” -O7.

(I guess by watching funny videos on TikTok I can spend my time using it to remove boredom.) “Siguru patye malbe kung funny videos keng tiktok karin ke a-ispending oras ku para milako ku kaynip”. -O6

Enjoyment

Depending on the narratives of the participants, students ' spend a significant amount of time undertaking sedentary activities and screen time because it entertains them, and they feel enjoyment upon using the apps.

As stated by the participants, students find enjoyment using social media, especially sites like TikTok and messenger. Social media provides pleasure through watching videos and sharing memes and in social media they are more entertained compared to other activities that do not require screen time. It also acts as a support system to the students because they can open their problems to those they communicate with and find some comfort.

In support, the study of Ping et al. (2020) concluded that social media becomes a common utility for people to connect with people around the world. The study showed that social media and happiness are related. Social media affects the happiness of users as it serves as enjoyment for them. Furthermore, explored the association between social media platforms

and users perceive enjoyment for different age groups. The broadcasting and content consumption activities are very popular among adolescents and more predictive of their enjoyment (Zhang and Jung, 2022).

(When I talk to my boyfriend through messenger and watch videos on tiktok or facebook.) “Kapag kausap ko yung boyfriend ko tsaka nanonood ng video sa tiktok or facebook”. -O1

(Because social media is entertaining, I can also communicate with my friends especially when I have something to open up, chatting and checking each other.) “Nakaka libang po kase yung social Media tas nakikipag communicate ako sa mga friends ko specially kapag may gusto mag open up, kwento han at kamustahan” -O2.

(I get entertained by using social media applications and sometimes the stress that I get from school is lessened.) “Ah ano po nalilibang po ako dun and minsan nababawasan din po Yung mga stress na nakukuha ko din po sa school” -O5

(Not much but I guess it is more entertaining for me, whenever I have some worries, I go to TikTok then the things that I see are funny things like memes that help me bring back my mood.) “Saktu mu pero balamu mas makalibang yamu para kanaku, kapag masakit ku lub tas magtiktok ku tas deng lulto keng tiktok ku puru funny la memes ganon anya medyu babalik ing mood ku” -O6

(Yes, especially tiktok since it is entertaining. I use social media for a long time, and I do not mind the time that I spend.) “Oo, lalo na sa tiktok kasi nakakaentertain. Matagal ko ginagamit ang social media tas dikona iniisip kung gano katagal” -O1

(I enjoy watching and chatting with my friends on social media) “Nageenjoy po ako ganyan kapag nanonood ako tas pag kausap ko mga friends ko sa social media” -O5.

(Yes, because it is entertaining that is why I have been using it for a long period.) “Yes, po kase nakaka entertaint po ito kaya napapahaba po paggamit ko” -O7

Stress Relief.

According to participants, they spent time on gadgets to relieve stress. Because gadgets can help them eliminate tension by allowing them to watch movies or videos and contact friends and loved ones.

Through understanding the narratives students use screens, particularly social media, to cope with the stress that they get from their everyday life. The narratives states that the function of gadget helps them to eliminate any stress that they have. By simply watching on different social media platforms or talking with their friend online they forget their problems helping them to continue moving forward and somehow lessen their worries and problems.

In contrast to the study of Rebecca Harris, Martin Sykora and Tom Jackson (2019) they found out that screen particularly social media can improve the wellness of students, as it helps them to cope with stress.

(I feel very happy since my sadness and problems are being lessened by watching TikTok and talking with my friends on Messenger.) “Nasisiyahan ako kase nababawasan yung lungkot ko kapag nanonood ako ng tiktok video tsaka nakikipag usap sa mga kaibigan ko sa messenger.” -O3

(I get entertained by using social media applications and sometimes the stress that I get from school is lessened.) “Ah ano po nalilibang po ako dun and minsan nababawasan din po Yung mga stress na nakukuha ko din po sa school” -O5

(For me after a long tiring day I use social media to escape the stress I get in everyday life.) “Ahmm for me po kase after the long tiring day po social media po yung escape ko sa araw araw na stress sa buhay” -O7.

(Actually, social media helps me a lot to relax and relieve some stress. For example, when im in the point of my hardest time and have a lot of thoughts in my mind, stress about having a lot of activities, what I will do is I will take a moment to chill and use my phone before I will do my work.) “Actually, yung social media malaking tulong saaken pag kunyaring meron kapag nasa point ako ng hardest time p na pag maraming iniisip, stress maraming activities. gagawin ko nalang muna mag chill tas mag phone bago ko gawin lahat” -O2

(It helps me to relax so that I won't feel any sadness and stress I have after a long tiring week.) “Nakakatulong ito para marelax ako tas hindi ko maramdaman

yung lungkot tsaka stress pagtapos ng nakakapagod na buong week” -O3

(My stress and tiredness relieve whenever i bond with my friends by playing online games.) “Kapag nakikipag laro ako sa mag kaibigan ko through online games, nawawala ang stress ko at pagod” -O8

(To escape reality because I feel like when I am using social media, I am losing my worries and problems with life. I will just use social media just to spend my time and enjoy.) “Siguru to escape reality kasi pag mag social media ku eku isipan reng sakit kung lub po problema keng biye. Magsocial media kumu para mag spend kung oras ampo magenjoy” -O6.

SOURCE OF INFORMATION AND NETWORKING

Through the narratives it can be understood that most people spend a lot of time using gadgets because they are useful. Gadgets make tasks easier and faster, such as doing activities that include searching for information. Through gadgets communication is made easier that is why they love to spend time sitting around and chatting with their friends

Since gadgets are useful and convenient as tools, people spend a lot of time utilizing them for both practical activities, social connections and encourage continued use because people like interacting with their friends and loved ones. And, Gadgets entertain and relax, offering access to music, movies, and games. Also, gadgets help the students do their schoolwork or report, because gadgets can help the student to gather information or definition about their topics via searching on the internet. The importance of technology in schools cannot be ignored in fact, with the onset of gadgets in education. It has become easier for teachers to impart knowledge and for students to acquire it. The use of technology has made the process of teaching and learning enjoyable.

In support, the study of Dewi Ratnasari and Haryanto (2019) found out that the use of gadgets in learning at school plays a significant role as a tool and support to the learning process of students. Gadgets provide comfort to students and offer effective and efficient outcomes to improve the students’ studies.

(I enjoy watching and chatting with my friends on social media) “Nageenjoy po ako ganyan kapag nanonood ako tas pag kausap ko mga friends ko sa social media” -O5.

(With social media, I can communicate with my friends which is why I spend

many hours using it.) “Gamit po kase ang social media nakakausap ko yung mga friends ko kaya tumatagal gamit ko nito” -O3

(When I talk to my boyfriend through messenger and watch videos on tiktok or facebook.) “Kapag kausap ko yung boyfriend ko tsaka nanonood ng video sa tiktok or facebook”. -O1

(Because social media is entertaining, I can also communicate with my friends especially when I have something to open up, chatting and checking each other.) “Nakaka libang po kase yung social Media tas nakikipag communicate ako sa mga friends ko specially kapag may gusto mag open up, kwento han at kamustahan” -O2.

(Whenever I have a problem, I can open it to the people I am talking to, making my worries vanish.) “Kapag may problema ako na o open ko ito sa mga ka chat ko tas nawawala yung sakit ng loob ko” -O1

(What I usually do when I get out of school is go straight home, and then what I spend using gadgets or social media apps is checking announcements in group chats. After that I will play online games with my friends. I think 5 hours or more). “Ang karaniwang ginagawa ko paglabas ng paaralan ay daretso uwi agad and then ang ginugugol ko sa pag gamit ng gadgets or social media apps ay ang pag check sa mga announcement sa mga group chat. Pagtapos non maglalaro ako ng online games kasama mga kaibigan ko. Siguro 5 oras or dakal pa”. -O8

(It is very helpful since I can get information from social media and be updated with the recent issues.) “Sobrang nakakatulong po sya saken kase nakakakuha ako ng mga information sa social media ganon tas nakakasabay po sa mga issues” -O4

(It offers me the accessibility to be informed of what is happening in the world and be updated with the current issues in society.) “Dahil po dun nagkakaroon ako ng access sa mga nangyayari po tsaka sa mga issues din po sa lugar naten” -O4.

(There is an important benefit, because for instance, my mom asks me to do something, and more likely it can be done online as well it helps me finish my

tasks faster.) “Ahm meron pong mahalang naidudulot kase po kunware Yung mama ko po meron siyang iuutos sakin so parang nauutos niya po sakin Yun through online na gawin ko po Yung mga bagay na pinapagawa niya tas napapabilis din po paggawa ko ng mga gawain ko” **-O5**

(Gadgets help me to finish schoolwork faster. In addition, even though I am not with my old friends I can still communicate with them and spend some time with them.) “Sa ano po kapag may schoolwork po using gadgets po nakakatulong to para mas mapabilis po yung work ko tas kahit di ko kasama mga dati kong friends nakakachat kopadin sila kaya nakakapag spend ako ng time kasama sila” **-O7.**

(None, however, it is very helpful helps a lot not just for me but for everyone that is why I have used it for a long time.) “Wala, pertalaga ang tulong nya dilang saaken halos kanino. Kaya ginagamit ko ginagamit to ng matagal” **-O2**

(Sometimes there are issues and dance moves that can be seen on social media that make me spend a lot of time using it.) “Minsan po may mga issue tsaka dance move na makikita sa social media kaya napapatagal po gamit ko dance moves na pag-aaralan” **-O4**

(Social media apps are very important, especially for me as a HUMSS student, I always use social media to do my schoolwork and communicate with my friends.) “Mahalaga kase ang mga chat apps lalo na para saken dahil humss ako, lagi kong nagagamit yung social media para matapos ko mga schoolwork ko tsaka para din makausap ko mga friends ko” **-O8**

Summary

1. The study examined students' sedentary habits and discovered that "sitting around (chatting with friends/chilling)" had the highest mean of 3 interpreted as 3-4 hours, while "watching TV" has the lowest mean of 1.53 interpreted as 1 hour.
2. The study reveals student screen time habits with social media/chat applications having the highest mean, 3 and interpreted as 5-6 hours. On the other hand, work related activities got the lowest mean of 2.19 and interpreted as 30mins- 2 hours.
3. The qualitative part investigates the patterns and factors contributing to the students' sedentary and screen time. With thematic analysis, this phase uncovered several factors, which are screen addiction, pastime activity, enjoyment, stress relief, and source of information and networking. The results of the qualitative phase revealed that the participants are deeply engaged with screens, leading to addiction. They spend significant hours on their gadgets, the narratives show that some participants are engaged in using screen for more than six hours a day. First factor students use social media extensively as a pastime activity, especially to induce sleep. The integration of social media into their lifestyle reflects its pervasive role, with participants spending hours watching, talking, and posting content to facilitate relaxation. Second factor, students spend a lot of time using screens as a pastime activity. The use of screens, particularly social media, played a significant role in their lifestyle. Participants are engaging in screens to watch, talk, and other screen related activities to induce sleep or eliminate boredom. Third factor, it revealed that the participants shows that screen engagement, particularly social media platforms provide enjoyment to them. Participants find enjoyment in using the screen by watching and connecting with friends online. Students turn to gadgets, primarily social media, as a coping mechanism for stress. Engaging with screens helps them forget their problems and unwind. The study aligns with previous research highlighting the role of social media in stress reduction among students. Fourth factor, students use screens particularly social media platforms like TikTok and Messenger to help them to eliminate their stress. Similarly, to some existing research it highlights the role of screens in stress management of students. The last factor, screens serve as an important tool for students, helping them in gathering information, connecting with people, and doing their task digitally. Participants highlighted the convenience, efficiency, and effectiveness that screens or gadgets offer to them.
4. The study reveals a moderate positive correlation with a result of 0.028411 between sedentary activity and screen time addiction among eleventh graders.

Conclusion

1. In conclusion, despite most of the statements having similar verbal description, mean intervals are not closely related. These findings conclude that sitting around and chatting with friends contributes significantly to students' sedentary activity.
2. Although the verbal descriptions are different, the mean of each statement is close together. In conclusion, students mostly spend their time on social media chat apps and to be followed by watching videos and playing online games/ video games.
3. The qualitative analysis looked at a variety of factors that influence how much time adolescents spend on screens and how sedentary they are. Screen addiction, past time activity, enjoyment, stress relief, and source of information and networking were important themes, with the usefulness of screens being one of the most common. The findings indicate that screen usage is prevalent, with some users spending excessive amounts of time on gadgets, particularly social media sites. Social networking promotes happiness and a sense of community while also serving as a stress relief and recreational activity. Additionally, screens are used for communication, information gathering, and task completion, proving their important role in students' lives. Considering these findings, initiatives that encourage active socializing and screen time breaks may be useful. Encouraging a balanced approach to screen time, which includes physical activity, may help reduce the detrimental consequences of extended sedentary behavior among eleventh grade students. This emphasizes the need of promoting healthier screen behaviors while also acknowledging the numerous roles screens play in students' daily lives.
4. The results show that there is a significant correlation between sedentary lifestyle and screen time addiction among eleventh graders. This result aligns with prior research emphasizing the connection between smartphone and sedentary behavior.

Recommendations

1. The study recommendations include targeted interventions to prevent sedentary behavior in students, focusing on reducing activities such as sitting and conversing with friends. And promoting physical activities among students.
2. This study suggests delving deeper into the factors driving high engagement in social media and chat apps among students. Exploring this could provide more insights. Future researchers should focus on developing effective interventions and guidelines to promote a balanced and unhealthy use of screen time and concerns related to social media use.
3. Based on the findings, since communicating with friends while sitting is the most common sedentary habit among eleventh graders, it may be advantageous to encourage more active socializing and screen time breaks. Promoting a healthy mix of screen time and physical activity can also be beneficial. They need to mingle with their pals outside so that they can avoid using electronics and social media. They must also exercise to maintain their general health. Setting limitations when using electronics is vital for maintaining a healthy balance. Limit your screen time to avoid overexposure to blue light and eye strain. Furthermore, set limits on device use at meals and social gatherings to build genuine offline connections.
4. The results highlight the importance of addressing and understanding the increasing negative impact of screen time and sedentary activity among eleventh graders. Future researchers should delve into the factors contributing to these activities and create intervention plans that will solve each behavior.

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