

PSYCHOSOCIAL EFFECTS OF MOBILE GAMES ON SENIOR HIGH SCHOOL STUDENTS

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ABSTRACT

This study explored the psychosocial effects of mobile gaming among senior high school students at Saint Mary's University during the 2023–2024 academic year, aiming to identify its impact across cognitive, emotional, behavioral, physical, and social domains, and to examine its relationships with screen time, physical activity, and demographics. Using a quantitative, descriptive-comparative design, data were gathered via snowball sampling from 70 students through a survey and analyzed using descriptive statistics, T-tests, and ANOVA to determine significant differences based on demographic variables. Findings showed that although the overall psychosocial impact was neutral, notable concerns included time management issues, emotional dependency on gaming, sleep disturbances, and social withdrawal. These negative effects were more prominent among students with excessive screen time and limited physical activity. At the same time, those who engaged in regular exercise experienced fewer adverse outcomes. As a nursing intervention, the study developed an Information, Education, and Communication (IEC) material. This digital wellness pamphlet provided strategies for managing screen time, enhancing emotional and cognitive health, encouraging physical activity, and improving social relationships. The study concluded with a call for digital wellness education and collaborative efforts from parents, educators, and healthcare professionals to mitigate the harmful effects of mobile gaming and promote a healthier, more balanced lifestyle for students.

Keywords: Psychosocial, behavioral effects, cognitive effects, emotional effects, physical effects, social effects, gaming addiction

INTRODUCTION

The rapid growth of mobile gaming in the Philippines, where 98.5% of internet users aged 16-64 engage in gaming, makes it a pressing issue, particularly among senior high school students. While mobile gaming offers benefits such as creativity, socialization, and strategic thinking, its risks, such as addiction, academic decline, and negative health outcomes, are substantial (Labana et al., 2020). The World Health Organization's classification of "Gaming Disorder" highlights the severe consequences of excessive gaming on young individuals (Nuyens et al., 2019). Also, the study by Erfani et al. (2020) explored the effects of mobile gaming across various age groups; however, it is limited in its specific focus on how mobile games impact the psychosocial well-being of senior high school students. This gap in the literature prompted this study, which aimed to assess the cognitive, emotional, behavioral, physical, and social effects of mobile gaming on senior high school students. Additionally, the research investigated the potential moderating factors, such as gender and gaming habits, to understand the nuanced effects of mobile gaming on this demographic.

Psychosocial well-being encompasses psychological, social, and subjective aspects that affect an individual's overall functioning and potential. It involves managing everyday stressors, fostering social relationships, and developing cognitive, emotional, and spiritual strengths (East African Community, 2019). In the context of mobile gaming, excessive engagement has been linked to addiction, particularly Internet Gaming Disorders (IGDs), which share characteristics with behavioral addictions like gambling (Kuss et al., 2023). Addiction to online gaming can have profound impacts on students, affecting academic performance, mental health, and physical well-being. Research has shown that excessive gaming leads to anxiety, depression, obesity,

sleep disorders, and a toxic environment conducive to cyber-harassment (Hamor, 2022).

Gender differences in gaming habits also play a significant role, with male students showing higher levels of gaming addiction than females (Farillon et al., 2022). This study explored these differences to understand the varying impacts of gaming on students, particularly males, who tend to engage in longer gaming sessions and face higher risks of addiction. Additionally, understanding the role of educators and parents in guiding responsible gaming practices is crucial to mitigating these negative effects (Kaya et al., 2023).

This research contributes valuable insights to the field by addressing the significant yet often overlooked impacts of mobile gaming on senior high school students. It highlights the need for strategies to help students maintain a healthy balance between gaming and other aspects of their lives.

Statement of the Problem

This research study aimed to determine the psychosocial effects of mobile games on senior high school students of Saint Mary's University during the first semester of the academic year 2023-2024. Specifically, it focused on answering the following questions:

1. What is the profile of the respondents in terms of:
 - a. Gender
 - b. Screen time
 - c. Types of mobile games played
 - d. Regular physical activity status
 - e. Social interactions through mobile games
2. What is the level of perceived mobile gaming psychosocial effects?
 - a. Cognitive effects
 - b. Emotional effects
 - c. Behavioral effects
 - d. Physical effects
 - e. Social effects
3. When grouped according to their profiles, are there significant differences in the psychosocial effects of mobile games on students?
4. What IEC material can be crafted to manage the psychosocial effects of mobile gaming on senior high school students?

METHODOLOGY

This study employed a quantitative, descriptive, comparative design to assess the psychosocial effects of mobile gaming among senior high school students. It described gaming behaviors and their effects across demographics (e.g., gender, screen time, game type, physical activity), and compared outcomes based on age and gender. It was conducted at Saint Mary's University (SMU) in Bayombong, Nueva Vizcaya, chosen for its large population of Senior High School students, making it an ideal setting to examine the psychosocial effects of mobile games. It involved 70 senior high school students from Saint Mary's University, selected via snowball sampling based on estimates of the E-sports program. Participants were active mobile gamers with 3–7 hours of daily screen time and at least six months of gaming experience. Those with inconsistent gaming habits or extreme screen times were excluded. Voluntary withdrawal was permitted to uphold ethical standards.

The study used the 41-item Mobile Gaming Addiction Scale (M-GAS) by Fuertes & King

(2021), with author permission, to assess cognitive, emotional, behavioral, physical, and social effects. It measured dependency through social isolation and sorrow, demonstrating high reliability (Cronbach's alpha ≥ 0.91). The cognitive domain (items 5, 6, 7, 11, 14, 19, 20, 24, 28, 30, 35, 36, 38, 39, 40) focuses on thoughts and attitudes, while the emotional domain (items 2, 12, 13, 23, 24, 26, 32, 33, 37) addresses feelings of anxiety and dependency. Behavioral effects (items 1, 3, 4, 5, 8, 15, 16, 21, 22, 25, 27, 29, 34) explore changes in responsibilities and risky behaviors. Physical consequences, such as sleep loss (items 9, 10, 17, 18), and social effects (items 28, 31, 32, 33, 35, 38, 39, 41) are also assessed. A trial using a 5-point scale was conducted to assess perceptions of mobile gaming's psychosocial effects before full deployment.

Data were gathered through validated surveys. To analyze the psychological effects of mobile gaming on Saint Mary's University senior high school students, the data were subjected to quantitative analysis. Descriptive analysis examined demographic and behavioral profiles, such as gender, screen time, types of mobile games, physical activity, and social interactions. Mean scores were computed to assess the cognitive, emotional, behavioral, physical, and social effects of mobile gaming. Inferential analysis using independent T-tests and ANOVA determined if psychosocial effects varied by demographic and behavioral profiles. Ethical standards, including informed consent and confidentiality, were strictly observed.

RESULTS AND DISCUSSION

Section 1. Profile of the Respondents

The demographic and behavioral profiles of senior high school respondents show near gender parity (52.9% male, 47.1% female) and a high prevalence of mobile gaming, with 41.4% spending 4–6 hours daily. Mobile Legends emerged as the most popular game (34.3%), indicating a strong preference for competitive multiplayer formats. While prolonged screen time raises concerns about eye strain, sedentary behavior, and sleep disruption, these findings also underscore the relevance of targeted health education and digital wellness strategies.

Despite the sedentary nature of gaming, 40% of respondents reported walking as their primary form of physical activity, showing an effort to maintain physical health. Additionally, 47.1% engaged in multiplayer gaming, highlighting both the social benefits (such as peer interaction and support) and risks (such as isolation or addiction). These results emphasize the importance of promoting balanced gaming habits and integrating physical activity into students' routines through health interventions.

Section 2. The level of perceived psychosocial effects of mobile gaming across cognitive, emotional, behavioral, physical, and social domains.

The overall mean score was 2.91 (SD: 0.76), indicating a moderate impact. The cognitive domain had the highest mean (2.95), with poor time management (Item 14, Mean = 3.66) identified as the most affected area. This supports findings by Nuyens et al. (2019), linking gaming addiction to reduced academic focus. These insights suggest that nursing interventions should prioritize time management education and promote offline cognitive activities to support student well-being.

Emotional effects were perceived as neutral (Mean = 2.94, SD: 0.81). However, mobile gaming was used as a stress-coping mechanism (Item 11, Mean = 4.16), aligning with Gonzalez-Bueso et al. (2020), who noted that gaming serves as a psychological escape. Emotional attachment to gaming was also observed (Item 26, Mean = 3.59). While not harmful, overreliance on gaming for emotional regulation could lead to dependency. Nurses should

educate patients on healthy coping strategies such as mindfulness and physical activity, and offer counseling for stress management (Frontiers, 2024).

Behavioral effects were perceived as neutral (Mean = 2.88, SD: 0.83), with concerns about impacts on daily routines and sleep (Item 1, Mean = 3.80; Item 25, Mean = 4.24). However, risky behaviors, such as gaming while driving (Mean = 1.99), were low. Nurses should raise awareness of responsible gaming, promote time management workshops, digital detox programs, and sleep hygiene education to prevent disruptions in daily routines and sleep (IJSR, 2023).

Physical consequences had the lowest mean (2.85, SD = 1.06), indicating a mild perception of harmful health effects. Sleep loss was a major issue (Item 9, Mean = 3.61), consistent with Lee et al. (2019) on the impact of gaming on sleep. Neglect of personal hygiene was less of a concern (Mean = 2.16). Nurses should educate about the importance of sleep, limit screen time before bed, and promote relaxation techniques to improve sleep quality (Bureau of Indian Education, 2024).

Social effects were neutral (Mean = 2.90, SD = 0.73), with some reporting social detachment due to gaming, supporting Rebetha et al. (2020) on social isolation. However, not all saw gaming as a barrier to socialization (Item 31, Mean = 2.21). Nurses should encourage offline activities and community programs to foster real-world connections and promote healthy digital habits to balance gaming with social interactions (Yang & Gong, 2022).

The general mean score of 2.91 (SD: 0.76) indicates respondents recognize both the benefits and drawbacks of mobile gaming. While it provides mental stimulation and emotional release, excessive use may lead to behavioral, physical, and social issues. Nurses should promote responsible gaming, holistic education, and counseling. Future research should explore cultural and demographic differences in gaming perceptions to tailor interventions. Raw data is available in Appendix B.

Table 1

The Level of Perceived Psychosocial Effects of Mobile Gaming Across Cognitive, Emotional, Behavioral, Physical, and Social Domains.

Statements	Overall Interpretation		
	Mean	SD	QD
Cognitive	2.95	0.73	Neutral
Emotional	2.94	0.81	Neutral
Behavioral	2.88	0.83	Neutral
Social	2.90	0.73	Neutral
Physical	2.85	1.06	Neutral
Overall	2.91	0.76	Neutral

Legend: 4.21-5.00 (Very High); 3.41-4.20 (High); 2.61-3.40 (Neutral); 1.81-2.60 (Low); 1.00-1.80 (Very Low)

Section 3. Comparison of Psychosocial Effects Experienced by Students Playing Mobile Games in terms of Profile Variables

This compares the psychosocial effects of mobile gaming across different respondent profiles. The study found that screen time and physical activity significantly influenced outcomes, while gender, game type, and social interaction did not. Male and female respondents showed no significant difference in psychosocial impact ($p=0.174$), suggesting a gender-neutral approach in health interventions. Game types also showed no significant difference ($p=0.725$), though awareness of content-related risks, such as violence, remains important. Similarly, the type of social interaction did not significantly affect outcomes ($p=0.151$), suggesting that in-game communication may not translate into meaningful offline connections.

In contrast, screen time and physical activity had notable effects. Students who played 7–10 hours daily reported higher psychosocial impacts (mean = 3.17) than those with less screen time ($p = 0.035$). Likewise, respondents engaging in more diverse physical activities had lower psychosocial scores ($p=0.050$), highlighting the protective role of exercise. These findings suggest that nurses should focus on managing screen time, encouraging breaks, and promoting varied physical activities to reduce negative gaming effects and support adolescent well-being.

Table 2

Comparison of Psychosocial Effects Experienced by Students Playing Mobile Games in terms of Profile Variables

Profile	Groups	f	Mean	SD	QD	F-value/ t-value	p-value
Gender	Male	37	3.02	0.75	Neutral	1.374 ^{ns}	0.174
	Female	33	2.78	0.76	Neutral		
Screen Time	1-3 hours	20	2.57 ^B	0.63	Low	3.515*	0.035
	4-6 hours	29	2.95 ^A	0.81	Neutral		
	7-10 hours	21	3.17 ^A	0.71	Neutral		
Types of Mobile Games	Mobile Legends	24	2.96	0.79	Neutral	0.659 ^{ns}	0.725
	Call of Duty	14	2.73	0.81	Neutral		
	Two or more types of mobile games	23	3.08	0.78	Neutral		
Regular Physical Activity Status	Sports	14	2.92 ^A	0.71	Neutral	2.470*	0.050
	Walking	28	3.17 ^A	0.87	Neutral		
	Two or more types of regular physical activity	23	2.68 ^B	0.54	Neutral		
Social Interactions through Mobile Games	Multiplayer gameplay	33	3.01	0.75	Neutral	1.685 ^{ns}	0.151
	In-game chat	5	2.59	0.46	Low		
	Two or more types of social interactions through mobile games	29	2.94	0.76	Neutral		

Legend: 4.21-5.00 (Very High); 3.41-4.20 (High); 2.61-3.40 (Neutral); 1.81-2.60 (Low); 1.00-1.80 (Very Low).

Section 4. IEC Material: Digital Wellness Pamphlet

Based on the study's findings, a digital wellness pamphlet was developed as an Information, Education, and Communication (IEC) tool to address the psychosocial impact of mobile gaming among senior high school students. While respondents perceived mobile gaming as neutral across cognitive, emotional, behavioral, physical, and social domains, issues such as poor time management, emotional dependence, sleep disturbances, and social withdrawal were noted with excessive use. The pamphlet provided targeted interventions aligned with nursing strategies, recommending screen time tracking, scheduled gaming, and cognitive stimulation through reading and puzzles to better manage time. It also promoted emotional regulation via mindfulness, journaling, and social interactions while encouraging students to seek professional help when needed.

To foster responsible gaming, the pamphlet included behavioral strategies such as setting play limits, applying reward systems, and observing sleep hygiene through rules like "no gaming at bedtime." Physical wellness tips included exercise, hydration, nutrition, and ergonomic gaming habits to counter sedentary behavior and prevent fatigue. For social well-being, it encouraged balancing online and offline interactions through family time, school

clubs, and volunteering. As a comprehensive nursing intervention, the brochure aimed to guide students toward balanced digital habits and improved overall well-being, with nurses and teachers playing key roles in its implementation and health promotion.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The findings indicated that mobile gaming influenced students' daily routines, screen time, social interactions, and physical activity levels. A significant number of students spent 4-6 hours daily on gaming, which raised concerns about screen time and well-being. Cognitive impacts were the most prominent, with excessive gaming linked to poor time management. Emotional impacts suggested gaming as a stress-coping mechanism, potentially leading to psychological dependence. Behavioral impacts highlighted disrupted routines and sleep, while social impacts showed mixed effects on real-life interactions.

The study revealed that screen time and physical activity significantly influenced the psychosocial effects, with higher screen time correlating with greater negative impacts. Physical activity helped mitigate these effects. Gender, game type, and in-game social interactions were not significant predictors. In response, a digital wellness pamphlet was developed as an IEC tool, offering interventions for cognitive, emotional, behavioral, physical, and social well-being. The pamphlet provided time management strategies, coping mechanisms, physical health advice, and tips for social engagement.

From a nursing perspective, this research emphasizes the need for health education and proactive intervention in promoting responsible gaming. Nurses and educators play a key role in guiding students towards healthier gaming habits, supporting their mental, emotional, and physical health.

Recommendations

Based on the study's findings, the following recommendations were made for various stakeholders to address the psychosocial effects of mobile gaming on senior high school students:

For Parents:

1. Set limits on gaming duration and use screen time tracking apps.
2. Encourage alternative hobbies like sports, reading, or creative activities.
3. Discuss gaming habits regularly and emphasize their impact on academics and well-being.
4. Enforce "no gaming before bedtime" rules to prevent sleep disruption.

For Educators:

1. Incorporate lessons on responsible gaming and digital wellness.
2. Provide activities that foster cognitive and social skills beyond gaming.
3. Monitor gaming behaviors and refer students with gaming dependence to counselors.
4. Conduct awareness programs on time management and healthy gaming habits.

For School Administrators:

1. Implement screen time regulations and designated "screen-free" periods.
2. Strengthen guidance programs to help manage gaming-related stress.
3. Promote school clubs and extracurricular activities to encourage social interaction.
4. Facilitate further research on digital wellness to guide future interventions.

For Nursing Professionals:

1. Educate students on the physical, emotional, and behavioral effects of excessive gaming.
2. Promote exercise, sleep hygiene, and ergonomic gaming practices.
3. Help identify signs of gaming addiction and refer students to mental health services.
4. Collaborate with educators and parents to monitor well-being and provide interventions.

For Future Researchers:

1. Study the long-term psychosocial effects of mobile gaming across different age groups.
2. Investigate gender differences in gaming behavior and its psychosocial effects.
3. Conduct follow-up research to assess and refine the digital wellness pamphlet.
4. Explore how cultural and economic factors influence gaming behaviors and outcomes.

These recommendations aim to foster a balanced, responsible approach to mobile gaming and enhance the overall well-being of senior high school students.

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