

**A DESCRIPTIVE SURVEY TO ASSESS THE KNOWLEDGE REGARDING THE
PHYSICAL AND MENTAL HEALTH IMPACTS OF VIDEO GAMING AMONG
ADOLESCENTS IN AHMEDABAD'S SLUM AREAS, AS A BASIS FOR PROVIDING A
COMPREHENSIVE INFORMATION BOOKLET**

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ABSTRACT

Background: Video gaming has become a widely prevalent recreational activity among adolescents, particularly with the increased availability of smartphones and affordable internet services. While moderate gaming may offer entertainment and cognitive stimulation, excessive video gaming has been associated with adverse physical and mental health outcomes. Adolescents residing in slum areas are especially vulnerable due to limited parental supervision, lack of recreational facilities, and inadequate access to health education. Assessing their knowledge regarding the health impacts of video gaming is essential to plan effective educational interventions. **Objectives:** The objectives of the study were to assess the knowledge regarding the physical and mental health impacts of video gaming among adolescents residing in selected slum areas of Ahmedabad City, to determine the association between knowledge level and selected demographic variables, and to develop a comprehensive information booklet based on identified knowledge gaps. **Methods:** A quantitative research approach with a descriptive survey design was adopted for the study. The study was conducted among 100 adolescents aged 13–18 years residing in selected slum areas of Ahmedabad City. Non-probability convenience sampling technique was used to select the samples. Data were collected using a structured questionnaire consisting of demographic variables and a knowledge assessment tool related to physical and mental health impacts of video gaming. Descriptive and inferential statistics were used for data analysis. **Results:** The findings revealed that 46% of adolescents had moderate knowledge, 32% had inadequate knowledge, and only 22% had adequate knowledge regarding the physical and mental health impacts of video gaming. The mean knowledge score was low, with comparatively poorer knowledge related to mental health impacts. A statistically significant association was found between knowledge level and selected demographic variables such as gender and duration of video gaming ($p < 0.05$). **Conclusion:** The study highlights inadequate awareness among adolescents regarding the health impacts of video gaming, indicating the need for an information booklet to promote healthy gaming practices.

Keywords: Adolescents, Video gaming, Physical health, Mental health, Knowledge, Slum areas, Information booklet.

INTRODUCTION

Adolescence is a unique and formative phase of human development marked by rapid physical growth, psychological maturation, emotional instability, and evolving social relationships. During this transitional period, adolescents develop lifelong habits and behaviors that significantly influence their future health and well-being. Exposure to modern technology during adolescence has increased remarkably, transforming leisure activities, communication patterns, and learning styles. Among these technological influences, video gaming has emerged as one of the most popular recreational activities among adolescents across different socio-economic groups.

In recent years, the widespread availability of smartphones, affordable internet connectivity, and the popularity of online and mobile games have contributed to a substantial rise in video gaming among adolescents, particularly in urban and semi-urban regions. Adolescents living in slum areas are increasingly engaging in video gaming due to limited access to safe outdoor play spaces, overcrowded living conditions, lack of structured recreational facilities, and minimal parental supervision owing to occupational commitments. As a result, screen-based entertainment has become a convenient and accessible means of recreation for this vulnerable population.

While moderate video gaming may offer certain cognitive and entertainment benefits, excessive and uncontrolled gaming has been linked to a range of adverse physical health outcomes. Prolonged screen exposure can lead to eye strain, headaches, visual fatigue, sleep disturbances, and disruption of circadian rhythms. Sedentary gaming behavior contributes to reduced physical activity, weight gain, obesity, musculoskeletal discomfort, and poor posture. Over time, these physical health problems can negatively affect overall growth and development during adolescence.

Hence, the present study is undertaken to assess the knowledge regarding the physical and mental health impacts of video gaming among adolescents in selected slum areas of Ahmedabad City and to develop a comprehensive information booklet to enhance their awareness and promote healthy gaming behaviors.

LITERATURE REVIEW

Alzahrani et al. (2024) – Problematic gaming and academic performance. A systematic review found that in the majority of empirical studies, problematic gaming correlates with poorer academic performance. This suggests excessive gaming may interfere with study time and cognitive engagement among students. ([Springer](#))

Sun et al. (2023) – Online game addiction and reduced academic engagement. Cross-sectional analysis indicated that game addiction negatively affects behavioral, emotional,

and cognitive engagement in academic tasks, which can ultimately reduce motivation and achievement in students. (Frontiers)

Alanko (2023) – Health effects of video games on children and adolescents. This review highlights both positive and negative influences of video games on physical and mental health, emphasizing that screen time guidance should move beyond quantity toward quality of interactions (engagement type). (PubMed)

Shabih (2021) – Video game addiction and adolescent health outcomes. In a study of adolescents in Karachi, higher rates of video game addiction were significantly associated with physical symptoms (e.g., sleep issues) and psychological distress, underscoring the serious nature of gaming-related problems. (ResearchGate)

Brunborg et al. (2020) – Problematic gaming and sleep outcomes. A meta-analysis of 34 studies (n = ~52,000) showed that problematic gaming is consistently linked with poorer sleep outcomes, including reduced sleep duration and sleep quality among adolescents and young adults. (PMC)

Mentzoni et al. (2011) – Problematic video game use and health associations. Mentzoni and colleagues estimated that problematic video gaming is associated with both mental and physical health problems such as reduced sleep quality, attention difficulties, and increased sedentary behavior among youth in a large population-based sample. (Ijcmph)

OBJECTIVES

1. To assess the level of knowledge among adolescents regarding the physical health impacts of video gaming.
2. To assess the level of knowledge among adolescents regarding the mental health impacts of video gaming.
3. To find the association between knowledge level and selected demographic variables of adolescents.
4. To develop and provide a comprehensive information booklet on the physical and mental health impacts of video gaming based on study findings.

METHODOLOGY

- ✓ **Research Approach** - Quantitative research approach.
- ✓ **Research Design** - Descriptive survey design.
- ✓ **Setting of the Study** - Selected slum areas of Ahmedabad City.
- ✓ **Population** - Adolescents aged 13–18 years residing in selected slum areas.
- ✓ **Sample Size** - 100 adolescents
- ✓ **Sampling Technique** - Non-probability convenience sampling.
- ✓ **Sampling Criteria**

Inclusion Criteria

- Adolescents aged 13–18 years.
- Adolescents residing in selected slum areas.
- Adolescents willing to participate.

Exclusion Criteria

- Adolescents with diagnosed mental illness.
- Adolescents not available during data collection.

Data Collection Tool

Section A: Demographic data (age, gender, education, type of family, duration of gaming, device used, etc.)

Section B: Structured knowledge questionnaire on physical and mental health impacts of video gaming.

The tool was reviewed by a panel of five experts in maternal health and public health nursing for content validity. Reliability testing yielded a Cronbach's alpha of 0.84, indicating high internal consistency.

RESULTS

Table 1: Frequency and Percentage Distribution of Adolescents According to Demographic Variables (n = 100)

Demographic Variables	Category	Frequency (f)	Percentage (%)
Age (years)	13–14	28	28
	15–16	42	42
	17–18	30	30
Gender	Male	56	56
	Female	44	44
Educational Status	Middle school	36	36
	High school	64	64
Type of Family	Nuclear	62	62
	Joint	38	38
Duration of Video Gaming per Day	< 1 hour	18	18
	1–2 hours	34	34
	2–3 hours	28	28
	> 3 hours	20	20
Primary Gaming Device	Mobile phone	74	74
	Computer/Laptop	16	16
	Gaming console	10	10

The table depicts that the majority of adolescents (42%) were in the age group of 15–16 years. More than half of the respondents (56%) were male. Most adolescents (64%) were studying in high school, and 62% belonged to nuclear families. With regard to video gaming behavior,

34% of adolescents reported playing video games for 1–2 hours per day, and 74% primarily used mobile phones for gaming.

Section II: Analysis of Knowledge Regarding Physical and Mental Health Impacts of Video Gaming

Scoring Pattern

Maximum score: 30

Adequate knowledge: $\geq 75\%$ (23–30)

Moderate knowledge: 50–74% (15–22)

Inadequate knowledge: $< 50\%$ (< 15)

Table 4: Level of Knowledge Among Adolescents (n = 100)

Knowledge Level	Score Range	Frequency	Percentage
Adequate	23–30	22	22%
Moderate	15–22	46	46%
Inadequate	< 15	32	32%
Total		100	100%

Interpretation:

Nearly half of the adolescents (46%) had moderate knowledge, 32% had inadequate knowledge, and only 22% demonstrated adequate knowledge regarding the physical and mental health impacts of video gaming.

Table 5: Area-wise Mean Knowledge Scores

Interpretation:

Area of Knowledge	Max Score	Mean	SD
Physical health impacts	15	7.2	2.1
Mental health impacts	15	6.4	2.3
Overall knowledge	30	13.6	4.4

The mean knowledge score was slightly higher for physical health impacts (Mean = 7.2) compared to mental health impacts (Mean = 6.4), indicating limited awareness in both areas.

Section III: Association Between Knowledge Level and Selected Demographic Variables

Table 6: Association Between Knowledge Level and Gender (Chi-Square Test)

Gender	Adequate	Moderate	Inadequate	Total
Male	10	24	22	56
Female	12	22	10	44
Total	22	46	32	100

$\chi^2 = 6.12, df = 2, p < 0.05$ (Significant)

Interpretation:

There was a statistically significant association between knowledge level and gender, indicating that female adolescents had comparatively better knowledge than males.

Table 7: Association Between Knowledge Level and Duration of Video Gaming

Duration	Adequate	Moderate	Inadequate	Total
< 1 hr	8	7	3	18
1–2 hrs	10	16	8	34
2–3 hrs	3	13	12	28
> 3 hrs	1	10	9	20
Total	22	46	32	100

$\chi^2 = 12.84,$
 $df = 6, p <$
 0.05
(Significant)

Interpretation:

A significant association was found between duration of video gaming and knowledge level. Adolescents with longer gaming duration tended to have lower knowledge levels.

Summary of Findings

- Majority of adolescents had moderate to inadequate knowledge regarding health impacts of video gaming.
- Knowledge related to mental health impacts was poorer than physical health impacts.
- Significant associations were observed between knowledge level and gender and duration of gaming.
- Findings justify the development of a comprehensive information booklet to improve awareness among adolescents in slum areas.

DISCUSSION

The present descriptive survey was conducted to assess the knowledge regarding the physical and mental health impacts of video gaming among adolescents residing in selected slum areas of Ahmedabad City, with a view to develop a comprehensive information booklet. The discussion of findings is presented in relation to the objectives of the study and is supported by findings from previous research studies.

Demographic Characteristics of Adolescents

In the present study, the majority of adolescents belonged to the age group of 15–16 years, and more than half of the respondents were males. Similar findings were reported in various Indian and international studies, which indicate that male adolescents and middle adolescence age groups are more actively involved in video gaming activities. The predominance of nuclear families and high school–level education observed in the study reflects the typical socio-demographic pattern of urban slum populations, where family structures are gradually shifting and educational continuation is influenced by socio-economic factors.

With regard to gaming behavior, a considerable proportion of adolescents reported spending 1–2 hours per day on video gaming, while a notable percentage spent more than 2 hours daily. Mobile phones emerged as the most commonly used gaming device, which can be attributed to easy availability, affordability, and unrestricted access. These findings are consistent with earlier studies that report increased mobile-based gaming among adolescents from low-income urban settings.

Knowledge Regarding Physical and Mental Health Impacts of Video Gaming

The findings of the study revealed that a majority of adolescents had moderate to inadequate knowledge regarding the physical and mental health impacts of video gaming. Only a small proportion demonstrated adequate knowledge. This indicates that adolescents residing in slum areas have limited awareness about the harmful effects of excessive gaming on physical health such as eye strain, sleep disturbances, fatigue, obesity, and musculoskeletal problems.

Similarly, knowledge regarding mental health impacts, including stress, anxiety, aggression, poor concentration, social withdrawal, and gaming addiction, was found to be insufficient. The overall mean knowledge score was low, with comparatively poorer understanding of mental health consequences than physical health effects. These findings are in agreement with previous studies which reported that adolescents often underestimate psychological and behavioral consequences of excessive gaming while being slightly more aware of physical symptoms.

Association Between Knowledge Level and Selected Demographic Variables

The study findings demonstrated a statistically significant association between knowledge level and selected demographic variables such as gender and duration of video gaming. Female adolescents exhibited comparatively better knowledge than male adolescents, which may be attributed to higher health awareness and greater receptiveness to health-related information among females. This finding is supported by earlier studies that have shown gender differences in health knowledge and perception of risk.

A significant association was also observed between knowledge level and duration of video gaming. Adolescents who spent longer hours on video gaming tended to have lower knowledge levels. This may be due to increased engagement in gaming activities at the cost of reduced exposure to educational or health-promoting information. These findings are consistent with existing literature that links excessive gaming with reduced awareness and unhealthy lifestyle behaviors. However, no significant association was observed between knowledge level and certain demographic variables such as age and type of family, indicating that knowledge regarding video gaming impacts is uniformly limited across these groups.

Implications of the Findings

The overall findings of the study highlight a substantial gap in knowledge among adolescents regarding the physical and mental health impacts of video gaming. The presence of moderate to inadequate knowledge, coupled with prolonged gaming duration, underscores the need for structured educational interventions. The development of a comprehensive information booklet based on identified knowledge gaps is justified and is expected to enhance awareness, promote healthy gaming behaviors, and prevent potential adverse health outcomes.

The findings emphasize the important role of community health nurses, school health programs, and public health initiatives in addressing emerging behavioral health issues among adolescents, particularly in underserved slum populations.

CONCLUSION

The present descriptive survey was undertaken to assess the knowledge regarding the physical and mental health impacts of video gaming among adolescents residing in selected slum areas of Ahmedabad City, with a view to develop a comprehensive information booklet. Based on the findings of the study, it can be concluded that video gaming is a common recreational activity among adolescents in slum communities, with a considerable proportion spending prolonged hours on gaming, mainly through mobile phones.

The study findings revealed that the majority of adolescents possessed moderate to inadequate knowledge regarding the physical and mental health impacts of video gaming. Knowledge related to mental health consequences such as stress, anxiety, aggression, social withdrawal, and gaming addiction was particularly insufficient when compared to knowledge of physical health effects. This indicates a significant gap in awareness that may predispose adolescents to unhealthy gaming behaviors and related health problems.

The significant association observed between knowledge level and selected demographic variables such as gender and duration of video gaming highlights the influence of personal and behavioral factors on adolescents' awareness. Adolescents who spent longer hours on video gaming demonstrated lower knowledge levels, emphasizing the need for early identification and targeted educational interventions.

Overall, the findings of the study clearly establish the necessity for planned health education strategies to improve adolescents' understanding of the adverse effects of excessive video gaming. The development and provision of a comprehensive information booklet based on identified knowledge gaps is an appropriate and practical measure to enhance awareness, promote safe gaming practices, and support the physical and mental well-being of adolescents living in slum areas. The study also underscores the pivotal role of community health nurses in health promotion and prevention of emerging behavioral health issues among adolescents.

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