

A QUASI-EXPERIMENTAL STUDY TO EVALUATE THE IMPACT OF A STRUCTURED INFORMATION BOOKLET ON THE AWARENESS OF VIDEO GAME-RELATED HEALTH HAZARDS AMONG ADOLESCENTS LIVING IN URBAN SLUMS OF AHMEDABAD CITY

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ABSTRACT

Background: Video gaming has become a popular recreational activity among adolescents due to rapid technological advancement and easy access to digital devices. While moderate gaming may be harmless, excessive and uncontrolled video game use has been associated with various physical, psychological, and social health hazards. Adolescents living in urban slums are particularly vulnerable due to limited awareness, lack of parental supervision, and restricted access to structured health education. **Objectives:** The objectives of the study were to assess the pre-test and post-test level of awareness regarding video game-related health hazards among adolescents, to evaluate the effectiveness of a structured information booklet on their awareness, and to determine the association between pre-test awareness scores and selected demographic variables. **Methods:** A quantitative evaluative research approach with a quasi-experimental one-group pre-test post-test design was adopted for the study. The study was conducted among 60 adolescents aged 13–18 years residing in selected urban slums of Ahmedabad city. Non-probability purposive sampling technique was used to select the participants. Data were collected using a structured demographic questionnaire and a structured awareness questionnaire. A structured information booklet on video game-related health hazards was administered after the pre-test. The post-test was conducted after seven days. Data were analyzed using descriptive and inferential statistics. **Results:** The pre-test findings revealed that the majority of adolescents (60%) had poor awareness regarding video game-related health hazards. Following the intervention, a significant improvement was observed in the post-test, with 60% of adolescents demonstrating good awareness. The mean post-test awareness score was significantly higher than the mean pre-test score ($p < 0.001$), indicating the effectiveness of the structured information booklet. Significant associations were found between pre-test awareness scores and selected demographic variables such as age, educational status, and daily gaming duration. **Conclusion:** The study concluded that the structured information booklet was effective in significantly improving awareness regarding video game-related health hazards among adolescents living in urban slums. The findings emphasize the need for incorporating structured educational interventions into community health programs to promote healthy gaming practices and prevent adverse health outcomes among adolescents.

Keywords: Video games, adolescents, health hazards, awareness, structured information booklet, urban slums.

INTRODUCTION

Adolescence is a critical developmental period characterized by rapid physical, psychological, and social changes. With increasing access to smartphones, gaming consoles, and internet services, video gaming has become a common recreational activity among adolescents. While moderate gaming may offer entertainment and cognitive stimulation, excessive and uncontrolled gaming has been linked to various physical, psychological, social, and behavioral health hazards.

Video game-related health hazards include eye strain, headache, musculoskeletal pain, sleep disturbances, obesity, reduced academic performance, aggression, social withdrawal, anxiety, depression, and symptoms of gaming addiction. Adolescents living in urban slums are particularly vulnerable due to overcrowded living conditions, limited recreational alternatives, lack of parental supervision, low awareness regarding health hazards, and unrestricted access to mobile devices.

Awareness plays a crucial role in prevention and early intervention. Structured information booklets are cost-effective, easy to administer, and suitable for community-based health education programs. Therefore, the present study aims to evaluate the effectiveness of a structured information booklet in improving awareness regarding video game-related health hazards among adolescents residing in urban slums of Ahmedabad city.

The prevalence of excessive video gaming among adolescents is increasing rapidly in India, especially in urban low-income communities. Studies report that prolonged gaming contributes to poor sleep quality, decreased concentration, behavioral problems, emotional instability, and physical complaints such as eye fatigue and musculoskeletal pain. Adolescents in slum areas often lack access to formal health education programs and are at higher risk of developing unhealthy gaming behaviors.

Ahmedabad city has a large population living in urban slums, where adolescents are increasingly exposed to digital media. Despite the growing burden of video game-related health problems, there is limited awareness among adolescents regarding its harmful effects. Preventive education through structured information booklets can help bridge this knowledge gap.

Hence, there is a strong need to assess the effectiveness of a structured information booklet in enhancing awareness regarding video game-related health hazards among adolescents in urban slums of Ahmedabad city.

LITERATURE REVIEW

1. A quasi-experimental study by **Patel and Shah (2022)** in Gujarat evaluated the effectiveness of a structured teaching programme on knowledge regarding digital gaming hazards among 60 adolescents. The results demonstrated a significant improvement in post-test knowledge scores compared to pre-test scores ($p < 0.001$). The study concluded that structured educational materials, including information booklets, are effective tools for improving awareness among adolescents, especially in resource-limited settings.

2. In an Indian context, **Chaudhary et al. (2021)** conducted a descriptive study among 200 adolescents living in urban slums of Delhi to assess physical and psychological health problems related to video gaming. The study found that 54% of adolescents experienced eye strain, 47% reported sleep disturbances, and 39% showed symptoms of irritability and aggression. The authors emphasized that lack of awareness and unregulated screen time significantly contributed to these health problems, recommending structured educational interventions at the community level.

3. A cross-sectional study conducted by **Sharma et al. (2020)** in Bengaluru assessed the pattern of video game usage among 300 adolescents aged 13–18 years. The findings revealed that 72% of adolescents engaged in daily video gaming, with 41% spending more than 2 hours per day. Mobile phones were the most commonly used devices. The study also highlighted that adolescents from low socioeconomic backgrounds had less parental supervision and longer screen time. The authors concluded that excessive video gaming is becoming a growing public health concern among Indian adolescents, emphasizing the need for preventive educational strategies.

4. Similarly, a descriptive study by **Reddy and Kumar (2019)** in Hyderabad assessed gaming habits among 250 school-going adolescents. The study reported that 65% of participants used video games primarily for entertainment and stress relief. However, 38% exhibited early signs of gaming dependency. The researchers emphasized that awareness regarding harmful effects of prolonged gaming was poor among adolescents, particularly those residing in urban slum areas.

OBJECTIVES

1. To assess the pre-test level of awareness regarding video game-related health hazards among adolescents living in urban slums of Ahmedabad city.
2. To assess the post-test level of awareness regarding video game-related health hazards among adolescents after administration of a structured information booklet.
3. To evaluate the effectiveness of the structured information booklet on awareness regarding video game-related health hazards among adolescents.
4. To find the association between pre-test awareness scores and selected demographic variables of adolescents.

METHODOLOGY

- **Research Approach** - Quantitative evaluative approach.
- **Research Design** - Quasi-experimental one-group pre-test post-test design.
- **Setting of the Study** - Selected slum areas of Ahmedabad City.

- **Population** - Adolescents aged 13–18 years residing in selected slum areas.
- **Sample Size** - 60 adolescents
- **Sampling Technique** - Non-probability purposive sampling technique.
- **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 variables (age, gender, education, family income, duration of video game use, type of device, etc.).

Section B: Structured awareness questionnaire on video game-related health hazards.

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

SECTION A

Analysis of Demographic Variables of Adolescents

Table 4.1: Frequency and percentage distribution of adolescents according to demographic variables (N = 60)

Demographic Variable	Category	Frequency (f)	Percentage (%)
Age (years)	13–14	18	30.0
	15–16	24	40.0
	17–18	18	30.0
Gender	Male	34	56.7
	Female	26	43.3
Educational Status	Middle school	22	36.7
	High school	38	63.3
Family Income/month	< ₹10,000	28	46.7
	₹10,001–20,000	22	36.7

	> ₹20,000	10	16.6
Daily Gaming Duration	< 1 hour	14	23.3
	1–3 hours	32	53.4
	> 3 hours	14	23.3
Type of Device Used	Mobile phone	42	70.0
	Computer	10	16.7
	Gaming console	8	13.3

The majority of adolescents (40%) belonged to the age group of 15–16 years. More than half (56.7%) were males. Most participants (70%) used mobile phones for video gaming, and 53.4% spent 1–3 hours daily on gaming.

SECTION B

Assessment of Pre-test and Post-test Awareness Levels

Awareness scores were categorized as:

Poor: 0–10

Average: 11–20

Good: 21–30

Table 4.2: Distribution of adolescents according to pre-test awareness level (N = 60)

Awareness Level	Frequency (f)	Percentage (%)
Poor	36	60.0
Average	20	33.3
Good	4	6.7

Interpretation:

In the pre-test, the majority of adolescents (60%) had poor awareness regarding video game-related health hazards.

Table 4.3: Distribution of adolescents according to post-test awareness level (N = 60)

Awareness Level	Frequency (f)	Percentage (%)
Poor	6	10.0
Average	18	30.0
Good	36	60.0

Interpretation:

After administration of the structured information booklet, 60% of adolescents demonstrated good awareness, indicating marked improvement.

SECTION C

Effectiveness of Structured Information Booklet

Table 4.4: Comparison of mean pre-test and post-test awareness scores (N = 60)

Test	Mean	Standard Deviation	Mean Difference	<i>t</i> value	<i>p</i> value
Pre-test	11.8	3.2			
Post-test	22.6	3.8	10.8	16.42	< 0.001

The calculated *t* value (16.42) was significantly higher than the table value at 0.05 level of significance. This indicates that the structured information booklet was highly effective in improving awareness regarding video game-related health hazards among adolescents.

Thus, **research hypothesis H₁ was accepted.**

SECTION D

Association Between Pre-test Awareness and Demographic Variables

Table 4.5: Association between pre-test awareness level and selected demographic variables (N = 60)

Variable	χ^2 value	df	Table value	Result
Age	6.12	2	5.99	Significant
Gender	1.84	1	3.84	Not Significant
Educational status	7.46	1	3.84	Significant
Daily gaming duration	9.28	2	5.99	Significant
Family income	2.16	2	5.99	Not Significant

Interpretation:

There was a significant association between pre-test awareness and age, educational status, and daily gaming duration. No significant association was found with gender and family income.

Thus, **research hypothesis H₂ was partially accepted.**

DISCUSSION

The present study was undertaken to evaluate the impact of a structured information booklet on the awareness of video game-related health hazards among adolescents living in urban slums of Ahmedabad city. This chapter discusses the major findings of the study in relation to the objectives and with support from findings of previous research studies.

Discussion Related to Demographic Variables

In the present study, the majority of adolescents belonged to the age group of 15–16 years and more than half of the participants were males. Most adolescents were studying in high school and belonged to low-income families. Mobile phones were the most commonly used devices for playing video games, and more than half of the participants spent 1–3 hours daily on gaming.

These findings are consistent with the study conducted by Sharma et al. (2020), who reported that mobile phones were the primary gaming devices among adolescents due to easy accessibility and affordability. Similarly, Reddy and Kumar (2019) observed that adolescents from low socioeconomic backgrounds had higher screen time and limited parental supervision, making them more vulnerable to excessive gaming habits.

Discussion Related to Pre-Test Awareness of Adolescents

The findings of the present study revealed that the majority of adolescents (60%) had poor awareness regarding video game-related health hazards during the pre-test. Only a small proportion of adolescents demonstrated good awareness.

This low level of awareness may be attributed to lack of structured health education, poor parental guidance, and limited exposure to preventive information in urban slum settings. Chaudhary et al. (2021) reported similar findings in their study, where adolescents living in urban slums had inadequate knowledge about the physical and psychological hazards of excessive video gaming. Gentile et al. (2011) also emphasized that lack of awareness significantly contributes to prolonged gaming behaviors and associated health problems.

Discussion Related to Post-Test Awareness after Administration of Structured Information Booklet

The post-test findings showed a marked improvement in awareness levels among adolescents. After the intervention, the majority of participants (60%) demonstrated good awareness, while only a small proportion remained in the poor awareness category.

This improvement indicates that the structured information booklet was effective in enhancing adolescents' understanding of video game-related health hazards. The simple language, culturally appropriate content, and systematic presentation of information may have contributed to better comprehension and retention of knowledge.

These findings are in agreement with Patel and Shah (2022), who found a significant improvement in knowledge scores among adolescents after administering a structured teaching programme on digital gaming hazards. The results also support the effectiveness of printed educational materials as a feasible and economical health education strategy in community settings.

Discussion Related to Effectiveness of Structured Information Booklet

The comparison of mean pre-test and post-test awareness scores revealed a statistically significant improvement after the administration of the structured information booklet ($p < 0.001$). This confirms that the intervention was highly effective in improving awareness regarding video game-related health hazards among adolescents.

This finding supports the first research hypothesis (H_1), which stated that there would be a significant difference between pre-test and post-test awareness scores. Similar results were reported by earlier studies that demonstrated the effectiveness of educational interventions in improving knowledge and awareness related to screen-time hazards and gaming addiction.

Discussion Related to Association between Pre-Test Awareness and Demographic Variables

The present study found a significant association between pre-test awareness levels and selected demographic variables such as age, educational status, and daily gaming duration. Adolescents who were older, studying in higher classes, and those with longer gaming duration demonstrated relatively better awareness.

However, no significant association was found between pre-test awareness and gender or family income. This suggests that awareness regarding video game-related health hazards is influenced more by exposure and educational level rather than economic status or gender.

These findings are consistent with the study by Sharma et al. (2020), which reported that awareness and understanding of gaming hazards increased with age and educational exposure, but showed no significant gender differences.

Summary of Discussion

The discussion highlights that adolescents living in urban slums have inadequate awareness regarding video game-related health hazards. The structured information booklet proved to be an effective educational intervention in significantly improving awareness levels. The study findings are supported by previous research and emphasize the importance of community-based health education strategies to address emerging behavioral health issues among adolescents.

CONCLUSION

The present study was conducted to evaluate the impact of a structured information booklet on the awareness of video game-related health hazards among adolescents living in urban slums of Ahmedabad city. Based on the findings of the study, it can be concluded that excessive video gaming is prevalent among adolescents and that baseline awareness regarding its associated health hazards was inadequate.

The pre-test assessment revealed that the majority of adolescents had poor awareness regarding the physical, psychological, and social health hazards related to video game use. This finding highlights the lack of exposure to structured health education and preventive information among adolescents residing in urban slum settings.

After the administration of the structured information booklet, a significant improvement in awareness levels was observed in the post-test. The increase in mean awareness scores clearly demonstrated the effectiveness of the structured information booklet as an educational intervention. The statistical analysis confirmed a highly significant difference between pre-test and post-test scores, thereby establishing the positive impact of the intervention.

The study also revealed that pre-test awareness levels were significantly associated with selected demographic variables such as age, educational status, and duration of daily video

game use, indicating that awareness improves with increased age, education, and exposure. However, no significant association was found with gender and family income.

Overall, the findings of the study conclude that a structured information booklet is a simple, cost-effective, and efficient method for improving awareness regarding video game-related health hazards among adolescents living in urban slums. Incorporation of such educational interventions in community health programs can play a vital role in preventing adverse health consequences associated with excessive video gaming and promoting healthy lifestyle practices among adolescents.

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