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Impact of Video Games Knowledge among Adolescents

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Abstract: ***The purpose of this study was to evaluate the knowledge of adolescents about the impact of video games and to determine the effectiveness of an informational booklet as an educational tool. The research was conducted in selected schools of Jamnagar and was guided by Imogene King's Goal Attainment Theory. A descriptive, non - experimental research design was used, with a sample of 60 adolescents selected through convenience sampling. Data were collected using a structured questionnaire containing 29 multiple - choice items. Content validity was established by a panel of seven experts, and tool reliability was confirmed with a split - half method, yielding a coefficient of 0.88. In the pre - test, participants achieved a mean score of 12.6 (43.45%) with a standard deviation of 2.8, which increased in the post - test to a mean of 23.7 (81.72%) and a standard deviation of 2.23. A significant association was observed between knowledge scores and variables such as academic class ($\chi^2 = 12.3$), family income ($\chi^2 = 15.5$), frequency of gaming ($\chi^2 = 4.2$), and perceived educational impact ($\chi^2 = 16.0$). These results suggest that the informational booklet was effective in increasing adolescents' understanding of the consequences of video game use.***

Keywords: Video Games, Massive Multiplayer online games, Department of Education, TV, DVD, BMI

1. Introduction

Video games are interactive digital games that involve manipulating images generated by a computer program, typically displayed on screens such as televisions, monitors, or mobile devices. Apart from computers and smartphones, various gaming consoles are also used for playing these games. The origin of video games dates back to the 1940s and 1950s, when computer scientists began creating early prototypes through simulations and artificial intelligence as part of their research in computing. Identifying the exact first video game developed during this period is difficult due to the lack of systematic development practices, poor documentation, and the use of outdated and now - inaccessible hardware. However, several logic - based puzzles, board game simulations, and military strategy programs from that era are often recognized as precursors to modern video games. In the present day, the rapid rise of internet usage has contributed to the increasing popularity of online gaming, especially among youth. This trend has also led to growing concerns about online gaming addiction worldwide. Studies, including one from Iowa State University (2011), have identified online gaming as one of the most habit - forming internet - based activities, significantly affecting behavior and lifestyle, particularly in younger populations.

2. Background of the Problem

In the late 19th and throughout the 20th century, various forms of mass media emerged and gained widespread popularity, including dime novels, films, comic books, radio, recorded music, television, video games, computer games, and the Internet. Each of these media formats was initially met with both optimism for its potential educational and social benefits and concern over possible negative impacts. A significant number of studies have explored whether technological advancements—particularly computers—enhance or hinder academic achievement. Research conducted internationally, particularly in the United States, has shown support for the educational use of computer games, suggesting their potential as teaching tools. However, contrasting findings indicate that excessive use of computer games may negatively affect students' academic performance. Multiple studies have reported an inverse relationship between time spent on video games and academic achievement among school - aged children, adolescents, and college students. One of the main concerns is the addictive nature of these games, which can lead to excessive gaming habits and reduced focus on studies. A major challenge in video game research lies in the rapid technological evolution of gaming itself. As noted by Kirriemuir and McFarlane (2004), comparing early text - based games with modern high - definition, immersive games is difficult. Ahn and Randall (2008) highlighted that game addiction—defined by the Center for Addiction and Mental Health as a psychological or physical dependency—can lead individuals to develop compulsive usage patterns, particularly with Massively Multiplayer Online Games (MMOs).

2.1 Statement of the Problem

"A study to assess the effectiveness of information booklet on knowledge regarding the impact of video games among adolescents in selected schools, jamnagar"

2.2 Objective of the Study

1) To assess the existing knowledge regarding impact of video games among adolescents.
2) To administer information booklet on impacts of video games among adolescents.
3) To assess the effectiveness of information booklet on impacts of video games among adolescents.
4) To find the association between impact of video games among adolescent with selected demographic variable.

2.3 Assumptions of the Study

1) Adolescent will have some knowledge regarding impact of videogames.
2) Adolescent will have awareness about impact of videogames.
3) Information booklet is an acceptable teaching strategy.
4) Information booklet will enhance the knowledge of adolescent regarding impact of video games.

3. Method

3.1 Design and Setting

Non experimental descriptive design was conducted in schools of Jamnagar, Gujarat.

3.2 Sample Size and Sampling Technique

The study comprised 60 adolescents who were selected through a convenience sampling technique. These participants were chosen based on their availability and willingness to participate

3.3 Assessment tools

Tool 1 - Captured data on variables including age in years, religion, class, family type, family income, occupation of father, occupation of mother, playing video games, duration of playing video games, source of video games, impact of video games on education, source of information.

Tool 2 - Comprised 29 multiple - choice items assessing student's knowledge about impact of videogames. Each correct response was awarded one point, with a maximum achievable score of 29. Criteria rating scale for validation of tool was developed, which had criteria - very relevant, relevant, needs modification, not relevant and remarks of experts.

3.4 Validity and reliability

Content validity was established through expert review, involving nursing faculty and principals. Revisions were made based on their recommendations. The reliability coefficients were 0.88 for the knowledge questionnaire, The internal consistency was assessed by using split half technique with raw score method and deviation method and Spearman's Brown Prophecy formula.

3.5 Data collection procedure

Formal permissions were obtained from school authorities. Participants provided written informed consent. Data were collected across 1 school during scheduled working hours. The researcher personally distributed and collected questionnaires, ensuring consistency and participant cooperation throughout the process.

4. Result

4.1 Demographic Data

Frequency and percentage wise distribution of samples based on Demographic Variables. [N=60]

Sr No	Demographic variables	Variables	F	%
1	Age in Years	10 - 11 years	19	31.67 %
		12 - 13 years	17	28.33 %
		14 - 15 years	16	26.67 %
		16 - 17 years	8	13.33 %
2	Religion	Hindu	46	76.67 %
		Christian	6	10.00 %
		Muslim	8	13.33 %
		Others	0	0.00 %
3	Class of Studying	7th standard	21	35.00 %
		8th standard	18	30.00 %
		9th standard	17	28.33 %
		10th standard	4	6.67 %
4	Family type	Nuclear family	46	76.67 %
		Joint family	11	18.33 %
		Extended family	3	5.00 %
		Single parent family	0	0.00 %
5	Family income	Below Rs.10, 000	22	36.67 %
		Rs.10, 000 - 15, 000	19	31.67 %
		Rs.15, 000 - 20, 000	14	23.33 %
		Rs.20, 000 and above	5	8.33 %
6	Occupation of father	Business	15	25.00 %
		Government employer	12	20.00 %
		Private employer	33	55.00 %
		Other	0	0.00 %
7	Occupation of mother	House wife	37	61.67 %
		Government employer	14	23.33 %
		Private employer	9	15.00 %
		Other	0	0.00 %
8	Playing video games	Yes	52	86.67 %
		No	8	13.33 %
9	Duration of playing video games	≤ 1 hour	25	41.67 %
		1 to 2 hours	15	25.00 %
		2 to 3 hours	9	15.00 %
		≥ 3 hours	3	5.00 %
10	Source of video games	Internet	36	60.00 %
		Game Shop	7	11.67 %
		Television	6	10.00 %
		Above all	3	5.00 %
11	Aware about impact of video games	Yes	37	61.67 %
		No	12	20.00 %
		Not known	8	13.33 %
		May be	3	5.00 %
12	Source of information	Friends	16	26.67 %
		Books and magazine	18	30.00 %
		Social media	14	23.33 %
		Family	12	20.00 %

Table 4.1 Shows the demographic characteristic of adolescents out of 60 samples, the majority (31.67%) of the adolescents was in the age group of 10 - 11 years, the majority 46 (76.67%) of the adolescent was Hindu, the majority 21 (35.00 %) of the adolescents were studying in 7th standard, the majority 46 (76.67%) of the adolescents were from nuclear family, the majority 22 (36.67%) of adolescent have an family income of below Rs 10, 000, the majority 33 (55.00%) of adolescent's father was private employers, the majority 37 (61.67%) of adolescent's mother was house wife, The majority 52 (86.67%) adolescents were

playing video games, the majority 25 (41.67%) adolescents were playing video games ≤ 1 hours, the majority 36 (60.00%) adolescents were getting video games from internet, the majority 37 (61.67%) adolescents agreed the video games have impact on education, the majority 30.00% of adolescent's were getting information from books and magazine.

4.2 Findings Related to Knowledge Scores of Adolescent Students

Table 4.2.1: Level of pre test knowledge regarding impact of video games among adolescents, N=60

Level of Knowledge	Score	No of respondents	
		No	%
Inadequate	< 50%	44	73.33
Moderate	50 - - 75%	16	26.67
Adequate	> 75%	0	0.00
Total	100	60	100.00

Table 4.2.1 shows that the73.33% adolescent students are having inadequate knowledge regarding impact of video games, and 26.67% adolescent students are having moderate knowledge regarding impact of video games in pre - test.

4.2.2. Level of post- test knowledge regarding impact of video games among adolescent after administration of information booklet, N=60

Level of Knowledge	Score	No of respondents	
		No	%
Inadequate	< 50%	0	0.00
Moderate	50 - - 75%	13	21.67
Adequate	> 75%	47	78.33
Total	100	60	100

Table 4.2.2 shows that the 78.33% adolescent students are having adequate knowledge regarding impact of video games, and 21.67% adolescent students are having moderate knowledge regarding impact of video games in post test after administration of information booklet.

4.2.3 Effectiveness of Information Booklet on Impacts of Video Games Among Adolescents.

N=60					
Level of Knowledge	Score	Pre test		Post test	
		No	%	No	%
Inadequate	< 50%	44	73.33	0	0.00
Moderate	50 - - 75%	16	26.67	13	21.67
Adequate	> 75%	0	0.00	47	78.33
Total	100	60	100	60	100

Table 4.2.3 shows that the knowledge regarding impact of video games on adolescent students in pre test was 73.33% inadequate knowledge and after administration of information booklet, the post test results shows 78.33% students having adequate knowledge regarding impact of video games.

4.2.4. Distribution of Overall Knowledge Scores of Adolescent Students on Impact of Video Games

[N=60]

Domain	Range	Mean	SD	Mean%	Paired 't' value
Pre test	6 - - 9	12.6	2.8	43.45	40.39*
Post test	19 - - 27	23.7	2.23	81.72	
Difference	6 - - 15	11.1	2.2	38.28	

(* Significant at P<0.01 level, df 59, t value 2)

Table 4.2.4 shows that the overall mean knowledge score of adolescent students regarding impact of video games in pre test 12.6 and post test 23.7.

4.3 Association between Knowledge of Adolescent Students with the Selected Demographic Variables [N=60]

Sl. No	Demographic Variables	No	%	≤Median (25)		> Median (35)		Chi - Square
				No	%	No	%	
1	**Age in years**							
	a.10 - 11 years	19	31.67	10	52.6	9	47.4	2.8
	b.12 - 13 years	17	28.33	8	47.1	9	52.9	df 3
	c.14 - 15 years	16	26.67	5	31.3	11	68.8	N. S
	d.16 - 17years	8	13.33	2	25.0	6	75.0	
2	**Religion:**							
	a. Hindu	46	76.67	20	43.5	26	56.5	0.3
	b. Christian	6	10.00	2	33.3	4	66.7	df 2
	c. Muslim	8	13.33	3	37.5	5	62.5	N. S
	d. Others	0	0.00	0	0.0	0	0.0	
3	**In which Class you are studying?**							
	a.7th standard	21	35.00	14	66.7	7	33.3	12.3
	b.8th standard	18	30.00	8	44.4	10	55.6	df 3
	c.9th standard	17	28.33	3	17.6	14	82.4	**S**
	d.10th standard or other	4	6.67	0	0.0	4	100.0	
4	**Family Type**							
	a. Nuclear family	46	76.67	19	41.3	27	58.7	2.9
	b. Joint family	11	18.33	6	54.5	5	45.5	df 2
	c. Extended family	3	5.00	0	0.0	3	100.0	N. S
	d. Single parent family	0	0.00	0	0.0	0	0.0	
5	**Family income In rupees per month**							
	a. Below Rs.10, 000	22	36.67	16	72.7	6	27.3	15.5
	b. Rs.10, 000 - 15, 000	19	31.67	6	31.6	13	68.4	df 3

	c. Rs.15, 000 - 20, 000	14	23.33	3	21.4	11	78.6	**S**
	d. Rs.20, 000 and above	5	8.33	0	0.0	5	100.0	
6	**Occupation of Father**							
	a. Business	15	25.00	8	53.3	7	46.7	1.2
	b. Government employer	12	20.00	5	41.7	7	58.3	df 2
	c. Private employer	33	55.00	12	36.4	21	63.6	N. S
	d. Other	0	0.00	0	0.0	0	0.0	
7	**Occupation of Mother**							
	a. House wife	37	61.67	15	40.5	22	59.5	0.9
	b. Government employer	14	23.33	5	35.7	9	64.3	df 2
	c. Private employer	9	15.00	5	55.6	4	44.4	N. S
	d. Other	0	0.00	0	0.0	0	0.0	
8	**Are you playing video game?**							
	a. Yes	52	86.67	19	36.5	33	63.5	4.2
	b. No	8	13.33	6	75.0	2	25.0	df 1 **S**
9	**If yes, How many hours do you play video game?**							
	a. ≤ 1 hour	25	41.67	14	56.0	11	44.0	2.6
	b.1 to 2 hours	15	25.00	7	46.7	8	53.3	df 3
	c.2 to 3 hours	9	15.00	3	33.3	6	66.7	N. S
	d. ≥ 3 hours	3	5.00	1	33.3	2	66.7	
10	**Source of video game?**							
	a. Internet	36	60.00	19	52.8	17	47.2	4.1
	b. Game Shop	7	11.67	3	42.9	4	57.1	df 3
	c. Television	6	10.00	1	16.7	5	83.3	N. S
	d. Above all	3	5.00	2	66.7	1	33.3	
11	**Are you aware about impact of video game on education?**							
	a. Yes	37	61.67	8	21.6	29	78.4	16.0
	b. No	12	20.00	9	75.0	3	25.0	df 3
	c. Not known	8	13.33	6	75.0	2	25.0	**S**
	d. May be	3	5.00	2	66.7	1	33.3	
12	**Sources of information**							
	a. Friends	16	26.67	7	43.8	9	56.3	4.7
	b. Books and magazine	18	30.00	5	27.8	13	72.2	df 3
	c. Social media	14	23.33	5	35.7	9	64.3	N. S
	d. Family	12	20.00	8	66.7	4	33.3	
S - Significant at p<0.05 level N. S - Not significant at p<0.05								

Table 4.3 shows that the obtained x^2 values which are less than the table value (both at 0.01 and 0.05 level of significance), are not significant and vice versa. There is a significant association between the knowledge and demographic variables, Class (x2=12.3.), family income (in rupees) (x2=15.5), playing video games (x2=4.2), impact of video games on education (x2=16.0).

5. Discussion

The present study assessed the knowledge regarding the impact of video games among adolescents in selected schools of Jamnagar. A total number of adolescents participated in the study. The findings revealed that the mean pre - test knowledge score was 12.6, with a mean percentage of 43.45% and a standard deviation (SD) of 2.8. In the post - test, the mean score increased to 23.7, with a mean percentage of 81.72% and an SD of 2.23, indicating a substantial improvement in knowledge following the intervention. Furthermore, a significant association was found between knowledge scores and selected demographic variables: academic class (χ^2 = 12.3), family income (χ^2 = 15.5), frequency of playing video games (χ^2 = 4.2), and the perceived impact of video games on education (χ^2 = 16.0). These results suggest that the educational intervention was effective and that demographic factors influence adolescents' knowledge levels regarding video game usage and its consequences

6. Conclusion

The findings of the study revealed that following the administration of the informational booklet, 78.33% of the adolescent participants demonstrated adequate knowledge regarding the impact of video games. Among the respondents, the majority (31.67%) were in the age group of 10–11 years. Most of the adolescents (76.67%) belonged to the Hindu religion, and 35% were studying in the 7th standard. A significant proportion (76.67%) came from nuclear families, while 36.67% reported a family income of below ₹10, 000 per month. In terms of parental occupation, 55% of the adolescents' fathers were employed in the private sector, and 61.67% of mothers were housewives. A majority (86.67%) of the adolescents reported playing video games, with 41.67% playing for one hour or less. Sixty percent accessed games via the internet. Additionally, 61.67% of participants agreed that video games have an impact on education. Regarding sources of information, 30% of the adolescents reported receiving knowledge from books and magazines. The investigator expressed satisfaction with the outcomes of the study, as the results indicate a substantial improvement in awareness and understanding of the impact of video games among adolescents following the educational intervention.

7. Future Scope

7.1 Nursing Research

Nursing researchers should remain informed about the potential impacts of video games, particularly their adverse effects on adolescents. Greater emphasis should be placed on conducting research focused on identifying and addressing these negative outcomes. Efforts must also be directed toward developing strategies to mitigate such effects. Furthermore, the dissemination of research findings through academic publications is essential to promote awareness and encourage the practical application of evidence - based interventions within the nursing and healthcare communities.

7.2 Nursing Administration

The growing use of video games today has raised concerns about their potential health impacts, particularly among adolescents. Nurse administrators play a vital role in developing and implementing policies that address health issues related to excessive video game use, guided by evidence - based research findings. To effectively manage these concerns, it is essential to organize regular in - service education programs aimed at enhancing healthcare professionals' knowledge and awareness regarding the physical, psychological, and social effects of video games. Such initiatives can support early intervention and promote healthier behaviors among young individuals.

7.3 Utilization

1) **Organize Regular Awareness Programs:** Conduct periodic workshops and seminars for adolescents to educate them about the impact of video games on physical, mental, and academic well - being.
2) **Replication in Diverse Settings:** The study can be replicated in various schools, including urban and rural settings, to validate the findings and enhance generalizability.
3) **Implement Experimental Research:** Future studies can adopt an experimental design using structured learning programs to assess changes in knowledge, attitude, and practice regarding video game usage.
4) **Conduct Follow - up Studies:** A longitudinal or follow - up study can be carried out to evaluate the long - term effectiveness of Video - Assisted Teaching (VAT) interventions.
5) **Comparative Analysis:** A comparative study may be conducted to examine differences in knowledge and behavior related to video game usage between students in government and private schools.

References

[1] Lenhart, A., Kahne, J., Middaugh, E., Macgill, A., Evans, C., & Vitak, J. (2008). Teens, video games, and civics: Summary of findings. Pew Internet & American Life Project.
[2] Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta - analytic review of the effects of violent and prosocial video game play. Personality and Social Psychology Bulletin, 40 (5), 578–589. https: //doi. org/10.1177/0146167213520459
[3] Wan, C. S., & Chiou, W. B. (2006). Why are adolescents addicted to online gaming? An interview study in Taiwan. CyberPsychology & Behavior, 9 (6), 762–766. https: //doi. org/10.1089/cpb.2006.9.762
[4] Kirriemuir, J., & McFarlane, A. (2004). Literature review in games and learning (Report No.8). NESTA Futurelab Series.
[5] Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. Journal of Personality and Social Psychology, 78 (4), 772–790. https: //doi. org/10.1037/0022 - 35
[6] Anand, V. (2007). A study of time management: The correlation between video game usage and academic performance markers. Cyber Psychology & Behavior, 10 (4), 552–559. https: //doi. org/10.1089/cpb.2007.9991

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