The Andhra Agric. J 67 (3): 223-229, 2020

Digital game Addiction- Influence on Behavioural Outcomes of Children

Ch Bhavani, Bilquis and S Prasanthi
Department of Human Development and Family Studies, APGC, Lam, Guntur, A. P.

ABSTRACT

The study aimed to assess the digital game addiction – influence on behavioural outcomes of children aged 9-11 years. The research was conducted in Visakhapatnam district of Andhra Pradesh. The sample consists of 180 children selected from three schools. 60 children from each school who are in the age group of 9-11 years were selected.. Out of 180 samples selected, 90 children were boys and 90 were girls. Digital game Addiction Scale (Altun, M. and Atasoy, M. 2018) was employed to measure the extent of digital game addiction in children, The Revised Children's Anxiety and Depression Scale (RCADS) (chorpit, et. al 2000) was used to measure the children anxiety and depression level. The findings revealed that the majority of the children regardless of their age had high levels of digital game addiction. However, boys scored higher than girls. The children with low levels of digital game addiction had low levels of anxiety and depression symptoms in both boys and girls. The low addicted children scored low on social phobia, panic disorder, major depression, separation anxiety, generalized anxiety, and obsessive-compulsive disorders. Children with medium levels of digital game addiction had medium levels of anxiety and depression symptoms in boys and girls. Children with a high level of digital game addiction had high levels of anxiety and depression symptoms in both genders and scored high on social phobia, major depression, separation anxiety, and generalized anxiety.

Keywords: *Anxiety, Depression, Digital games and School children.*

Outcome of digital games are not limited to entertainment as it increases the motivation for playing games. As per the sources available digital gaming addictions are not only common among kids but also seen in individuals of all ages. According to Ogel, (2012), the use of computers occupies more space in human life because of the developed technology. Individuals are trying to express themselves through computers, games, and other social platforms

In the past, games played in outdoor places (playgrounds, streets, etc.) along with friends. Whereas today, people prefer to play in a virtual and indoor environment with the development of technology particularly the advancement of computers and the internet (Horzum., Ayas and CakýrBalta,2008).

Like the two faces of a coin, even these digital gadgets usage have negative and positive consequences which we often ignore to contemplate. Almost everyone around the globe is accustomed to these gadgets, even the children at a very young age are familiar with gadgets. In nowadays games that are playing in digital gadgets are far more than the games that are playing in playgrounds.

"Digital game addiction" is a condition that stems from the steady growing passion for digital games and its excessive and uncontrolled usage, which influences their cognition and behavior (Parisodet al. 2014). The most often reportable outcomes are behavioral, perceptual, cognitive, and physiological outcomes (Connolly et al. 2012).

As most of them are not engaged in outdoor games, physical and social activities which result in causing violence and fear, exhibiting insensitive and aggressive behavior. According to Griffiths and Meredith (2009), digital game addiction has many psychological and physiological effects on the individual. The psychological effects can be listed as the feeling of happiness and gaining energy during the game, ignoring family and friends, feeling of depression, and loneliness. Other physiological effects can be listed as carpal tunnel syndrome, ocular instability, headache and back pain, irregular nutrition, skipping self-care and cleanliness, and sleeping disorders.

Additionally, children with computer game addiction commonly suffer from emotional problems, like depression, stress, and anxiety-related disorders (Lim et al. 2015). Anderson and Bushman (2001) revealed that children who play more violent video games are more likely to possess increased aggressive thoughts, feelings, and behaviours, and decreased pro-social helping.

OBJECTIVES

1. To study the level of digital game addiction among the children (9-11years).
2. To study the behavioral outcomes of digital game addicted children.
3. To study the association between the level of digital game addiction and behavioural outcomes.

MATERIALS AND METHODS

Visakhapatnam district of Andhra Pradesh was the study location. 180 children were selected from three schools. 60 children from each school who exist in the 9-11 years. Out of 180 samples selected, 90 children were boys and 90 were girls. Digital game Addiction Scale (Altun, M. and Atasoy, M. 2018). The Revised Children's Anxiety and Depression Scale (RCADS) (chorpit, et. al 2000) is used for the research. The Purposive sampling technique remained embraced for the selection of respondents. Data were collected from the children (9-11years) randomly from three different schools of Visakhapatnam city and administered the tests.

Age, gender, class, and digital game addiction were identified as independent variables. The dependent variable is the behavioural outcome which includes total anxiety and depression among the sub-dimensions are social phobia, panic disorder, Separation anxiety, generalized anxiety, obsessive compulsion, and Major depression. The data was subjected to statistical scrutinity. The association between digital game addiction and behavioural outcomes were studied by using chi-square test.

RESULTS AND DISCUSSION

Digital game addiction among the children

Among 9 years old boys it was found that nearly fifty percent of them with a high level of digital game addiction followed by medium and low levels of digital game addiction whereas among girls 43.4 percent are at high in digital game addiction followed by a medium and low level.

Among 10 year children, it was found that 43.3 percent of boys at high in the digital game addiction and 40 percent of girls have resulted medium level of digital game addiction followed by low and high.

Among 11 years nearly sixty percent of the boys were at a high level of digital addiction followed by a medium to low whereas among girls 53.3 percent were at a high level of digital game addiction followed by a medium to the low level of digital game addiction. Morahan, Martin, and Shumacker (2000) shows that men were more pathological users than females. The significant variance was found between male and female users in digital game addiction. The results shows that boys are addicted to digital games more than girls (Chou et.al., 2005).

Distribution of children based on the level of digital game addiction and behavioural outcomes

58.3 percent of boys and 77.8percent of girls who had a low level of digital game addiction was showed to have a low level of anxiety and depression symptoms. Among the sub-dimensions of anxiety and depression, children were found to have low levels of social phobia, panic disorder, major depression, separation anxiety, generalized anxiety, and obsessive-compulsive disorders. These results are in line with Mannikkoet.al.(2014) children with low in digital game addiction level result in low in anxiety and depression.

Boys with a medium level of digital game addiction (47 percent) having medium level of anxiety and depression however 57.6 percent of girls were resulted to have a medium in anxiety and depression level. Among sub-dimensions of anxiety and depression, children having medium levels of social phobia, panic disorder, major depression and generalized anxiety, and a high level of separation anxiety and low level of obsessive-compulsive disorder. The children who have a higher level of exposure to violent digital game have high anxiety and depression are in the result of Ran Wei (2007).

Boys with a high level of digital game addiction (52.3 percent) were found to have high levels of anxiety and depression. Among sub-dimensions of anxiety and depression, boys were found to have high levels of social phobia, major depression, separation anxiety, and generalized anxiety and medium to the low level of panic disorder and obsessive-compulsive disorder whereas half of the girls with a high at digital game addiction had high levels of panic disorder, anxiety and social phobia and medium levels of depression, generalized anxiety and low level of obsessive-compulsive disorder. Majority of the addicted children playing violent digital games when compared to low levels of addicted children. Funk, Hagen, and Schimming (1999) found that children displayed higher frustration levels and anxiety levels after playing violent video games. Massively multiplayer online-role play gaming was significantly effected by game-related problems than players who do not engage in playing games these lines are in the finding by Kuss et.al. (2012). Klimmt et.al. (2009) reported that digital addictions lead to problematic behaviour in children. The children who play digital excessively are with behavioural problems like social phobia, separation anxiety, introversion, and depression these lines are in the findings of Kneer et.al. (2014). Children cope with emotional distress by playing online games, but the excessive use of online games for a long time separated the individuals from real-life relationships caused severe mental health problems such as depression by Wang et.al.(2019).

Mean difference in the levels of digital game addiction

It can be inferred that there is a significant difference between the boy's and girl's scores of the level of digital game addiction. The result shows that

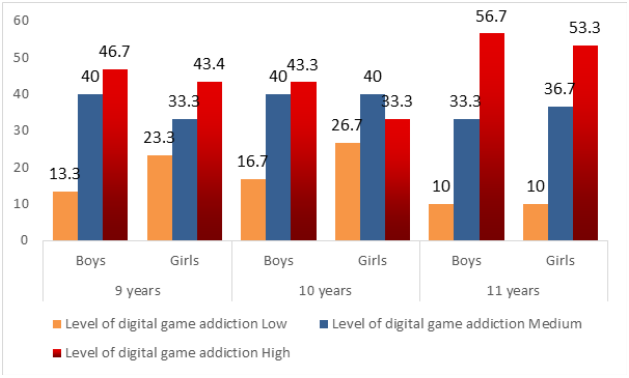

Fig 1. Digital game addiction among children

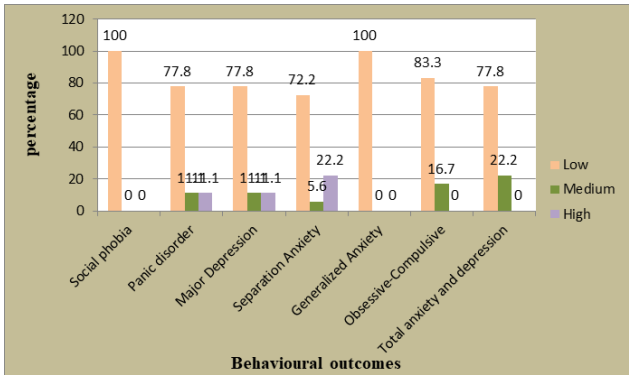

Fig 2. Behavioural outcomes of girls with low levels of digital game addiction

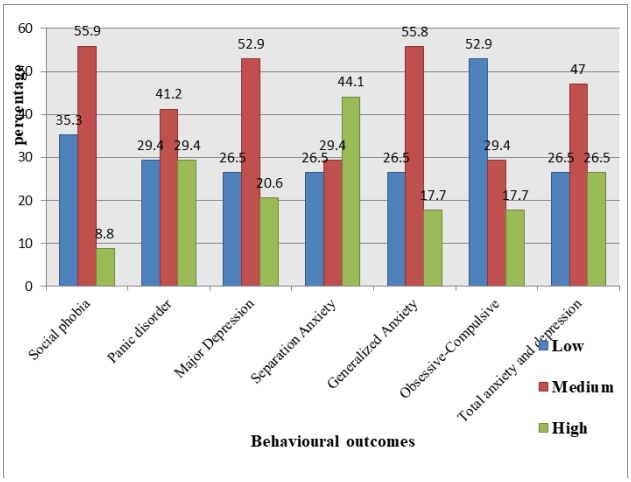

Fig 3. Behavioural outcomes of boys with medium levels of digital game addiction

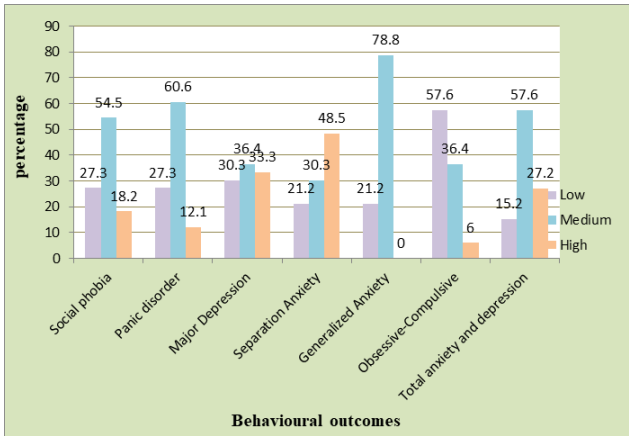

Fig 4. Behavioural outcomes of girls with medium levels of digital game addiction

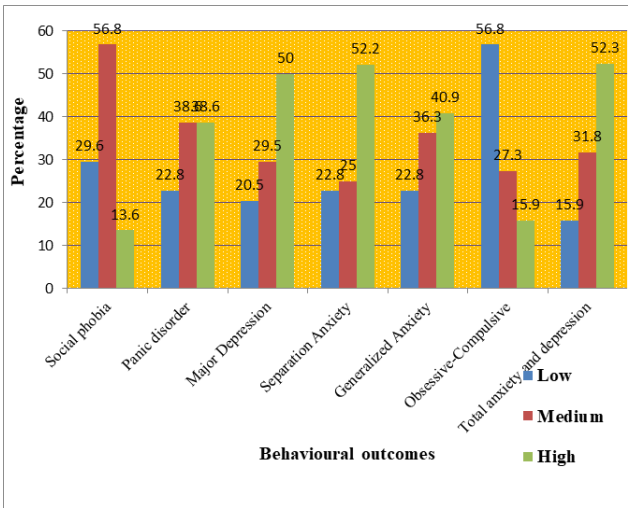

Fig 5. Behavioural outcomes of boys with high levels of digital game addiction

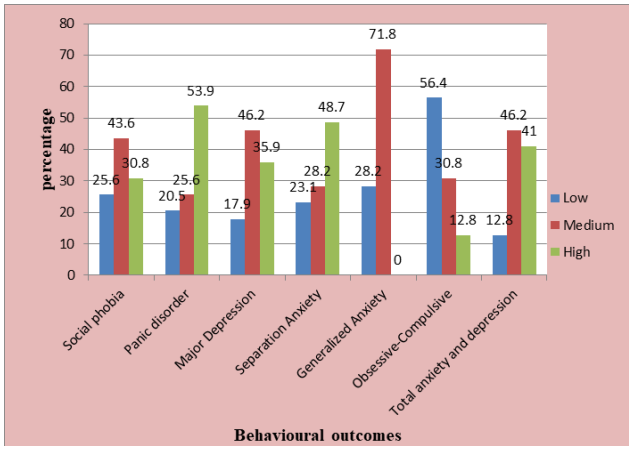

Fig 6. Behavioural outcomes of girls with high levels of digital game addiction

Table 1. Behavioural outcomes of boys with low levels of digital game addiction N=12

Dimension	Variable					
	Behavioural outcomes					
	Low		Medium		High	
	N	%	N	%	N	%
Social phobia	11	91.7	1	8.3	0	0
Panic disorder	9	75	2	16.7	1	8.3
Major Depression	8	66.6	2	16.7	2	16.7
Separation Anxiety	9	75	2	16.7	1	8.3
Generalized Anxiety	9	75	1	8.3	2	16.7
Obsessive-Compulsive	8	66.7	1	8.3	3	25
Total anxiety and depression	7	58.3	2	16.7	3	25

Table 2. Behavioural outcomes of girls with low levels of digital game addiction N=18

Dimension	Variable					
	Behavioural outcomes					
	Low		Medium		High	
	N	%	N	%	N	%
Social phobia	18	100.0	0	0.0	0	0.0
Panic disorder	14	77.8	2	11.1	2	11.1
Major Depression	14	77.8	2	11.1	2	11.1
Separation Anxiety	13	72.2	1	5.6	4	22.2
Generalized Anxiety	18	100.0	0	0.0	0	0.0
Obsessive-Compulsive	15	83.3	3	16.7	0	0.0
Total anxiety and depression	14	77.8	4	22.2	0	0.0

Table 3. Behavioral outcomes of boys with medium levels of digital game addiction N=34

Dimension	Variable					
	Behavioural outcomes					
	Low		Medium		High	
	N	%	N	%	N	%
Social phobia	12	35.3	19	55.9	3	8.8
Panic disorder	10	29.4	14	41.2	10	29.4
Major Depression	9	26.5	18	52.9	7	20.6
Separation Anxiety	9	26.5	10	29.4	15	44.1
Generalized Anxiety	9	26.5	19	55.8	6	17.7
Obsessive-Compulsive	18	52.9	10	29.4	6	17.7
Total anxiety and depression	9	26.5	16	47.0	9	26.5

Table 4. Behavioural outcomes of girls with medium levels of digital game addiction N=33

Dimension	Variable					
	Behavioural outcomes					
	Low		Medium		High	
	N	%	N	%	N	%
Social phobia	9	27.3	18	54.5	6	18.2
Panic disorder	9	27.3	20	60.6	4	12.1
Major Depression	10	30.3	12	36.4	11	33.3
Separation Anxiety	7	21.2	10	30.3	16	48.5
Generalized Anxiety	7	21.2	26	78.8	0	0.0
Obsessive-Compulsive	19	57.6	12	36.4	2	6.0
Total anxiety and depression	5	15.2	19	57.6	9	27.2

Table 5. Behavioural outcomes of boys with high levels of digital game addiction N=44

Dimension	Variable					
	Behavioural outcomes					
	Low		Medium		High	
	N	%	N	%	N	%
Social phobia	13	29.6	25	56.8	6	13.6
Panic disorder	10	22.8	17	38.6	17	38.6
Major Depression	9	20.5	13	29.5	22	50
Separation Anxiety	10	22.8	11	25	23	52.2
Generalized Anxiety	10	22.8	16	36.3	18	40.9
Obsessive-Compulsive	25	56.8	12	27.3	7	15.9
Total anxiety and depression	7	15.9	14	31.8	23	52.3

Table 6. Behavioural outcomes of girls with high levels of digital game addiction N=39

Dimension	Variable					
	Behavioural outcomes					
	Low		Medium		High	
	N	%	N	%	N	%
Social phobia	10	25.6	17	43.6	12	30.8
Panic disorder	8	20.5	10	25.6	21	53.9
Major Depression	7	17.9	18	46.2	14	35.9
Separation Anxiety	9	23.1	11	28.2	19	48.7
Generalized Anxiety	11	28.2	28	71.8	0	0.0
Obsessive-Compulsive	22	56.4	12	30.8	5	12.8
Total anxiety and depression	5	12.8	18	46.2	16	41.0

Table 7. Significant difference in the levels of digital game addiction of Boys and Girls (overall) N= 180

Gender	Mean	S.D	Z – value
Boys	9.66	3.43	12.76**
Girls	7.22	3.33	

Table 8. Behavioural outcomes of 9 years children N=60

Level of digital game addiction	Behavioural outcomes			Chi-square value
	Low	Medium	High	
Low	8	2	1	17.54 **
Medium	6	10	6	
High	3	10	14	

Table 9. Behavioural outcomes of 10 years children N=60

Level of digital game addiction	Behavioural outcomes			Chi-square
	Low	Medium	High	
Low	9	3	1	13.65 **
Medium	5	12	7	
High	4	9	10	

Table 10. Behavioural outcomes of 11 years children N=60

Level of digital game addiction	Behavioural outcomes			Chi-square
	Low	Medium	High	
Low	4	1	1	12.26 *
Medium	3	13	5	
High	5	13	15	

the boys scored higher on digital game addiction.

Muller et.al. (2014) found that 84 percent of boys and 42.8 percent of girls played online games regularly and statistically significant difference resulted in level of digital game addiction.

Association between the level of digital game addiction and behavioural outcomes of children

There was a significant relationship found between the level of digital game addiction and behavioural outcomes of all the age group children. The children having a low level of digital game addiction were found to have low levels of social phobia, panic disorder, major depression, separation anxiety, generalized anxiety, and obsessive-compulsive disorders. The children with a medium level of digital addiction were found to have the medium level in social phobia, panic disorder, major depression, and generalized anxiety and high in separation anxiety level and low in obsessive-compulsive disorder, and the children having a high in digital game addiction were resulted to have a high level in social phobia, major depression, separation anxiety, and generalized anxiety and medium to the low level of panic disorder and obsessive-compulsive disorder

CONCLUSION

The study revealed that the majority of the children regardless of gender were playing adventurous and violent games on mobile and have health problems like headaches and eyesight. Both boys and girls were equally obsessed with mobile games and had medium to the high level of digital game addiction. However, boys scored more than the girls on behavioural outcomes. Children having low levels of digital addiction were found to have less anxiety and depression scores compared to the children of medium and high levels of digital game addiction. The majority of children were engaged in playing violent games where it is required to kill the enemies as fast as they can to achieve subsequent levels and obtain the incentives. It had been observed that both the sex are equally enjoying the digital games and comparing their levels with their contemporaries. This often results in anxiety, phobia, excitement, and panic disorders. The children with a high level of digital game addiction had high levels of anxiety and depression symptoms and also high in social phobia, major depression, separation anxiety, and generalized anxiety and medium to the low level of panic disorder and obsessive-compulsive disorder. The children with a medium level of digital game addiction had a medium level of social phobia, panic disorder, major depression and generalized anxiety, and a high level of separation anxiety and low level of obsessive-compulsive disorder. Hence parents need to have a check on the amount Of the time spent on digital games and facilitate them in balancing their academic and recreational activities. Children got to be counseled about the ill effects of digital game addiction to scale back the health, emotional, behavioural, and psychological disorders.

LITERATURE CITED

Anderson C A and Bushman B J 2001 Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. Psychological Science.12 (5): 353-359.

Aswathy V, Devika E and Girish S 2019 A Study on Impact of Online Gaming and Its Addiction among Youth with Special Reference to Kerala. *International* Journal of Management, IT &Engineering.9(6): 308-316.

Ayogdu-karaaslan I 2015 " Digital games and digital violence awareness: a comparative study analysis carried out on parents and children". *The journal of* international social research.8(36): 806-818.

Chou C, Condron L and Belland J C 2005 A Review of the Research on Internet Addiction.Educational Psychology Review. 17(4): 363–383.

Connolly T M, Boyle E A, MacArthur E, Hainey and Boyle J M 2012 Asystematic-literature review of empirical evidence on computer games and serious games. ELSEVIER. 661-686.

Funk J, Hagan J and Schimming J 1999 Children and electronic Games:A Comparison of parents and children's perceptions of children's habits and preferences in a united state sample. Sage Journal.85: 883-888

Griffith M D and Meredith A 2009 Video game addiction and its treatment.Journal of contemporary psychopathy.39(4): 247-253.

Horzum M B, Ayas T and Cakirbalta O 2008 Computer game addiction scale for children. Turkish psychological counseling and guidance journal. 3(30): 76-88.

Jayalakshmi G, Ranganathan Chidambaram Ramasundaram Srikumar Vijayakumar R 2017 Online game addiction among adolescents in Pondicherry, India.Journal of addictive behaviour, Therapy & Rehabilitation. 6(2): 1-2.

Klimmt C, Schmid H and Orthman J 2009 Exploring the enjoyment of playing browser games. Cyberpsychology and behaviour. 12(2): 231-234.

Kneer J, Rieger D, Ivory J D and Ferguson C 2014 Awareness of risk factors for digital game addiction: interviewing players and counselors. International journal of mental health addiction.12(8): 585-599.

Kuss D J, Louws J and Weirs R W 2012 Online game addiction? Motives predict addictive play behaviour in massively multiplayer online role – playing games. Cyberpsychology, behaviour and social networking.15: 480-485.

Mannikko N, Mendes L, Barbosa F and Reis L.P. 2014 Health determinants related to digital game playing: a systematic review. Journal of health science. 4(3): 53-67.

Morahan-Martin J and Schumacher P 2000 Incidence and correlates of pathological internet use among college students. Computers in Human Behaviour. 16(1): 13–29.

Muller K W, Janikian M, Dreier M, Wolfling K Beutel M E, Tzavara C, Richardson C and Tsitsika A 2014 Regular gaming behaviour and internet gaming disorder in Europe adolecents: results from a cross-national representative survey of prevalence, predictors and psychopathalogical coorelates. Europe child adolescent psychiatry.24 (3): 565-574.

Ogel K 2012 Internet addiction, understanding the psychology of internet and overcoming addiction.Istanbul publishing.2.

Parisod H, Aromaa M, Kauhanen L, Kimppa K, Laaksonen C, Lappanen V, Pakarinen A R N Smed J and Salantera S 2014 The advantages and limitations of digital games in children's health promotion.Finnish Journal of eHealth and eWelfare. 6(4): 164-172.

Ran wei 2007 Effects of playing violent video games on chinese adolescents, pro- violence attitude, attitudes towards others and aggressive behaviour. CyberPsychology and Behaviour. 10(3): 371-380.

Wallenius M and Punamaki R L 2008 Finnish longitudinal study on parent-child communication, sex, age and direct aggression.Journal of applied developmental psychology.29(4): 286-294.

Wang J L, Sheng J R and Wang H Z 2019 The Association between Mobile Game Addiction and Depression, Social Anxiety, and Loneliness.Frontiers in public health.7:1-6.

Zamani E, Ali K, Chesmi M, Ahmed A and Nasim H 2010 Effect of addiction to computer games on physical and mental health of female and male students of guidance school in city of Isfahan .Journal of addiction and health. 1(2) 98-104

Zoorbaz S D, Ulas O and Kizildag S 2014 Relation between video game addiction and inter family relationships on primary school students. Educational sciences: Theory and practice. 15(2): 489-497.

Received on 03.09.2020 and revised on 05.12.2020