EXAMINATION OF THE PREVALENCE AND PREDICTORS OF VIDEOGAME ADDICTION AMONG SCHOOL CHILDREN

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Abstract

This is a school-based cross-sectional study that investigated the prevalence and predictors of videogame addiction among school children. A total of 86 schoolchildren enrolled in basic education in Enugu State Nigeria participated in the survey. The videogame addiction scale for children was utilized during data collection. The data collected were analyzed using cross tabulation (frequency and percentage), bivariate statistical analyses. The results showed that the prevalence rates of video game addiction among school children are high. The results also demonstrated that age and gender predict videogame addiction among school children. Therefore, this study concluded that the prevalence rates of video game addiction among school children are accountable by age and gender emerged as significant predictors. Given these findings, school counsellors and other relevant practitioners should design a sustainable intervention to reduce the high degree of video game addiction among school children.

Keywords: Basic schools; Age; Gender; Videogame addiction Schoolchildren.

1 INTRODUCTION

Game dependence is defined by the American Psychological Association (APA) as a pattern of excessive and prolonged Internet gaming that leads to a cluster of cognitive and behavioral symptoms, such as accelerated loss of control over gaming, tolerance, and withdrawal symptoms, similar to those seen in substance use disorders (APA, 2013). The latest videogames have more engaging visual and audio effects, as well as faster event rates that stimulate ongoing play (Ng et al. 2005). Other types include adventure, action, fighting, platform, racing/driving, role-playing, puzzle, shooter, sports, simulation, and strategy (Lee et al., 2014). This can lead to people spending too much time playing video games. Excessive gaming can also be influenced by motivations and expectations (Haagsma et al. 2013).

These include inability to control one's actions and continuing to do so despite negative consequences (Henderson 2001), an excessive and compulsive use of videogames that causes social and/or emotional problems and the gamer's inability to control this excessive use. Despite these problems, and an excessive and compulsive use of videogames that causes social and/or emotional problems and the gamer's inability to control this excessive use despite these problems (Henderson 2001; Lemmens et al. 2009).

According to the findings, children in Nigeria spend an excessive amount of time on digital technology on a daily basis (Adepetun, 2021). They do this by watching television, playing video games, or going online. On average, a Nigerian child can spend up to three hours every day in front of a screen. In extreme circumstances, some children may spend up to 10 hours or more every day in front of the computer, bordering on addiction (Adepetun, 2021). Nigeria ranked sixth from the bottom of a list of 30 peer countries in the 2020 Child Online Safety Index report, which demonstrated higher levels of disordered use of technology among children in Nigeria (Adepetun, 2021). The Nigerian Communications Commission (NCC) conducted the study, which found that digital technology addictions take many forms, including excessive video clip viewing, obsessive video game playing, and uncontrolled browsing and conversing on social media. The survey found that children around the world enjoy watching video content, listening to music, and spending time on social media. Adepetun (2021) also stated that Nigerian children spend a significant amount of time on their mobile devices playing already downloaded videogames. According to the findings, WhatsApp is the most popular social networking app among Nigerian children, with 87 percent using it, followed by Facebook with 85 percent and Instagram with 57 percent (Adepetun, 2021).

Video game technology has become widely adopted, not just by younger but also by older generations. The VG industry has evolved at a dizzying pace during the previous decade (Kefalis et al., 2020). According to a study conducted in Bagdad, video games were used by nearly 94.6 percent of primary school children, with gender distributions of 97.4 percent for boys and 88.7 percent for girls, indicating that the vast majority of children played video games, with only 5.4 percent not playing at all (Dhiaa and Tawfeeq, 2016). According

to studies, males report more issues related with video gaming than females (Brunborg et al. 2013; Ferguson et al. 2011). One study discovered that being young was a significant predictor of hazardous video game usage (Mentzoni et al. 2011). More research is needed to determine the sociodemographic characteristics that influence the likelihood of acquiring a video game addiction (Wittek, et al 2016). The research literature on the impact of other demographic factors is scarce (Wittek, et al 2016). This addicted behaviour has been shown to have relationship with conduct problem. When schoolchildren are victims or offenders in peer-to-peer interactions, such as bullying, revenge porn, self-harm, destructive and violent behaviors like "happy slapping," conduct risk rises to the fore (Adepetun, 2021). Radicalism, racism, tribalism, hate speech, and other discriminating materials and imagery are among the others (Adepetun, 2021).

Excessive online game playing has been linked to melancholy, anxiety, aggression, trait anxiety, neuroticism, loss of appetite, sleep disturbances, and physical inactivity in a number of studies (e.g., Anderson and Murphy 2003; Charlton 2002; Chumbley and Griffiths 2006; Wallenius et al. 2007). Excessive and compulsive videogame play has also been linked to poor psychosocial well-being (Lemmens et al. 2011), lower daily life satisfaction (Wang et al. 2008), poor academic performance (Gentile et al. 2004; Skoric et al. 2009; Rehbein et al. 2010), and aggression and narcissism (Gentile et al. 2004; Skoric et al. 2009; (Kim et al. 2008). Many studies have found benefits of videogame playing, such as high intrinsic motivation (Wan and Chiou 2007), enjoyment (Lim and Lee 2009; Thomas and Martin 2010), educational, social, and/or therapeutic advantages (Griffiths 2002, 2005; Griffiths 2010), skills enhancement (Gee 2007; Dickey 2011), simulation opportunities to explore environments without risk (Aldrich 2005), and knowledge promotion of computer memory concepts (Griffiths 2010) (Papastergiou 2009). One of the most popular pastimes among children is playing video games. They appear to prefer videogames to television because they provide them more power and allow them to participate more actively (Greenfield 1984). Children aged 2 to 17 in the United States spend an average of 7 hours a week playing video games (Gentile and Walsh 2002). It is also disturbing that to date, there have been very few clinical studies that assess the effectiveness of methods of treating problem video game playing (King, Delfabbro, & Griffiths, 2010). Given this, we investigated the prevalence and predictors of videogame addiction among school children enrolled in basic education in Enugu State Nigeria.

2 METHODOLOGY

2.1 Design

This is a cross-sectional survey design.

2.2 Ethical Compliance

The Faculty of Education at the University of Nigeria granted permission to undertake this research. When the parents and teachers gathered for the Parents-Teachers Association meeting, they offered their informed agreement orally behalf of the children. Condition assessment and inclusion criteria were used to evaluate all of the children whose parents offered their assent.

2.3 Measure

The Videogame Addiction Scale for Children (Monacis, Griffiths, Cassibba, Sinatra, & Musso, 2020) is a 21-item self-report measure that evaluated children's levels of videogame addiction. The scale (VASC) has four dimensions: impaired self-control (1-6 items), reward/reinforcement (7-13 items), issues (14-17 items), and involvement (18-21 items). The VASC reliability was observed to be between 0.75 and 0.80. The reliability ratings for each subscale were 0.85 for poor self-control, 0.87 for reward/reinforcement, 0.75 for issues (14-17 items), and 0.75 for engagement (18-21 items). As reported by Yilmaz et al., the older version of VASC was also trustworthy (0.89). (2017). The VASC was scored on a five-point Likert scale, with 1 equaling never and 5 equaling very often. The score is calculated by adding the total items (21 items) to 105, with higher scores indicating a higher level of videogame addiction. The current researchers tested it on children in Nigeria to ensure that it was internally consistent.

2.4 Participants and Procedure

This research was carried out in Enugu, Enugu State, Nigeria. There were 56 boys and 30 girls among the 86 pupils that took part in the study. They were screened using dependent measures to determine the problem's baseline. They were also evaluated for eligibility based on inclusion and exclusion criteria. The inclusion criteria were as follows: a) must be between the ages of 4 and 12; b) must have the characteristics of the disorder as defined in the International classification of diseases and DSM-IV; c)

must be permitted by the parents; d) must be between the ages of 4 and 12; e) must be between the ages of 4 and 12; f) must be between the ages of 4. Those that were excluded did not have the permission of their parents, have other disorders-related issues, and unavailable for the study. A self-report questionnaire on pencil and paper was distributed. When the questionnaires were finished, participants returned them to the researchers.

2.5 Method of Data Analysis

The information gathered was statistically examined. To evaluate the data acquired for this study, crosstabulation (frequency and percentage) and bivariate statistical techniques were used to investigate the data.

3 RESULTS

Table 1: Frequency and percentage of the videogame addiction among the participants.

s/n	Statements	Never	Rarely	Sometimes	Often	Very Often
	Impaired self-control					
1	I cannot resist playing videogames even if it negatively affects my life.	0(0.0%)	1(1.2%)	32(37.2%)	44(51.2%	9(10.5%)
2	Even if I control the amount of time that I spend playing videogames, after a while I continue to play again uncontrollably.	0(0.0%)	2(2.3%)	45(52.3%)	37(43.0%)	2(2.3%)
3	I feel that whatever I do, I am not able to control the time I spend playing videogames	0(0.0%)	0(0.0%)	17(19.8%	60(69.8%)	9(10.5%)
4	I cannot stop playing videogames even if I think I have spent so much time playing them	0(0.0%)	0(0.0%)	86(100.0%)	0(0.0%)	0(0.0%)
5	I am not interested in anything else while playing videogames	0(0.0%)	1(1.2%)	9(10.5%)	32(37.2%)	44(51.2%)
6	Although I want to reduce the amount of time that I spend playing videogames, I fail every time	0(0.0%)	1(1.2%)	32(37.2%)	44(51.2%)	9(10.5%)
	Reward/reinforcement					
7	I forget my problems while playing videogames	0(0.0%)	2(2.3%)	45(52.3%)	37(43.0%)	2(2.3%)
8	In videogames, defeating my enemies/leaping up a level gives me pleasure	0(0.0%)	0(0.0%)	17(19.8%	60(69.8%)	9(10.5%)
9	In videogames, defeating my enemies/leaping up a level makes me feel stronger than my enemies.	0(0.0%)	0(0.0%)	86(100.0%)	0(0.0%)	0(0.0%)
10	I think playing videogames is very enjoyable activity	0(0.0%)	1(1.2%)	9(10.5%)	32(37.2%)	44(51.2%)
11	In videogames, defeating my enemies/leaping up a level increases my self-esteem	0(0.0%)	1(1.2%)	32(37.2%)	54(51.2%)	9(10.5%)
12	I do not feel bored when I play videogames	0(0.0%)	2(2.3%)	45(52.3%)	37(43.0%)	2(2.3%)
13	I feel happy when I play videogames	0(0.0%)	0(0.0%)	17(19.8%)	60(69.8%)	9(10.5%)
	Problems					
14	Playing videogames prevents me from fulfilling my responsibilities	0(0.0%)	0(0.0%)	86(100.0%)	0(0.0%)	0(0.0%)
15	Playing videogames prevents me from eating regular meals	0(0.0%)	1(1.2%)	9(10.5%)	32(37.2%)	44(51.2%)
16	The games I play prevent me from spending time with my family	0(0.0%)	1(1.2%	32(37.2%)	44(51.2%)	9(10.5%)
17	I have sleeping problems due to playing videogames	0(0.0%)	2(2.3%)	44(52.3%)	37(43.0%)	2(2.3%)
	Involvement					
18	I always talk about videogames with my friends	0(0.0%)	0(0.0%)	17(19.8%)	60(69.8%)	9(10.5%)
19	I make friends via online videogames	0(0.0%)	0(0.0%)	86(100.0%)	0(0.0%)	0(0.0%)
20	I see my videogames/games characters in my dreams	0(0.0%)	1(1.2%)	9(10.5%)	32(37.2%)	44(51.2%)
21	I act like videogame characters in my daily life activities	0(0.0%)	1(1.2%)	32(37.2%)	44(51.2%)	9(10.5%)

Table 1 shows that 86 of the participants representing 1(1.2%) rarely, 32(37.2%) sometimes, 44(51.2%) often and 9(10.5%) very often find it difficult to resist playing videogames even if it negatively affects my life. In item 2, out of the 86 participants, majority 45(52.3%) sometimes and 37(43.0%) responded that even if they control the amount of time that they spend playing videogames, after a while they continue to play again uncontrollably. In the item 3, the majority 60(69.8%) often feel that whatever they do, they are not able to control the time they spend playing videogames. For item 4, all the participants, 86(100.0%) agreed that they sometimes cannot stop playing videogames even if they think they have spent so much time playing them. Regarding the item 5, 32(37.2%) often and 44(51.2%) very often are not interested in anything else while playing videogames. Regarding item 6, 32(37.2%) out of the 86 participants sometimes want to reduce the amount of time that they spend playing videogames, they fail every time. While 44(51.2%) often want to reduce the amount of time that they spend playing videogames, they fail every time. For item 7, majority of the participant 45(52.3%) sometimes and 37(43.0%) often forget their problems while playing videogames. In terms of item 8, 60(69.8%) participants defeating their enemies/leaping up a level makes them feel stronger than their enemies in videogaming. Regarding item 10, 32(37.2%) often and 44(51.2%) very often agreed that they think playing videogames is very enjoyable activity. The results in Table 1 indicate that the schoolchildren excessively engage in videogames. This implies that the prevalence rates of video game addiction among school children are high.

Table 2: Correlation analysis of gender and age as predictors of videogame addiction.

		Gender	***Age***	***VASC***
Gender	Pearson Correlation	1	.009	.061
	Sig. (2-tailed)		.931	.578
	N		86	86
Age	Pearson Correlation		1	.111
	Sig. (2-tailed)			.309
	N			86
VASC	Pearson Correlation			1
	Sig. (2-tailed)			
	N			

Keys: VASC=Videogame addiction scale for children, Sig.= Significance

Table 2 shows that age and gender predict videogame addiction among schoolchildren in Enugu State Nigeria, r (86) = .111; r (86) = .061. Also, the result shows age and gender do not significantly predict videogame addiction among schoolchildren in Enugu State Nigeria, p = .309; p = .578. This implies that an increase in the age and gender of schoolchildren will bring about a corresponding increase in their videogame addiction. However, the increase in videogame addiction is not significant.

4 DISCUSSION

The results showed that the prevalence rates of video game addiction among school children are high. The results also demonstrated that age and gender predict videogame addiction among school children. A number of studies have connected excessive online gaming playing to depression, anxiety, hostility, trait anxiety, neuroticism, lack of appetite, sleep difficulties, and physical inactivity (e.g., Anderson and Murphy 2003; Charlton 2002; Chumbley and Griffiths 2006; Wallenius et al. 2007). Excessive and obsessive videogame play has also been associated to reduced daily life satisfaction (Wang et al. 2008), poor academic performance (Gentile et al. 2004; Skoric et al. 2009; Rehbein et al. 2010), and violence and narcissism (Gentile et al. 2004; Skoric et al. 2009; Rehbein et al. 2010). (Kim et al. 2008). Many studies have discovered benefits of videogame play, including high intrinsic motivation (Wan and Chiou 2007), enjoyment (Lim and Lee 2009; Thomas and Martin 2010), educational, social, and/or therapeutic benefits (Griffiths 2002, 2005b; Griffiths 2010a, b), skills enhancement (Gee 2007; Dickey 2011), simulation opportunities to explore environments without risk (Aldrich 2005), and knowledge promotion of computer memory concepts (Griffiths 2010a, b) (Papastergiou 2009). Playing video games is one of the most popular pleasures among children. They appear to prefer videogames to television because they provide them more control and allow them to engage in more active participation (Greenfield 1984).

In the United States, children aged 2 to 17 spend an average of 7 hours per week playing video games (Gentile and Walsh 2002).

Children in Nigeria, according to the data, spend an inordinate amount of time on digital technology on a daily basis (Adepetun, 2021). They do this through watching TV, playing video games, or surfing the internet. A Nigerian child can spend up to three hours a day in front of a screen on average. Some children may spend up to 10 hours or more per day in front of the computer in extreme circumstances, bordering on addiction (Adepetun, 2021). In the 2020 Child Online Safety Index study, Nigeria was ranked sixth from the bottom of a list of 30 peer countries, indicating higher levels of disordered technology usage among Nigerian children (Adepetun, 2021).

By implication, the current findings, like those of other qualitative and quantitative studies, are far-reaching, particularly among primary teachers, counsellors, and parents. As a result of this research, these specialists should employ CBT assumptions in assisting youngsters who play internet-related games excessively at home and at school. Some of the kids may be doing it without realizing the consequences. Counselors and primary school instructors should collaborate with parents, who may be able to provide vital information that will help experts treat and guide such children in their schools (Ede et al 2020).

5 CONCLUSION

Given the advancement of technology in recent times, people across ages use internet for business, education, banking and entertainment. Children and young adolescents use it to entertain themselves at homes, schools and social environments. However, the alarming rates of engagement and dependence on internet videos, games and other media contents are pervasive and worrisome. This concern brought about the present research. Therefore, this study concluded that the prevalence rates of video game addiction among school children are accountable by age and gender emerged as significant predictors. School counsellors and other relevant practitioners should design a sustainable intervention to reduce the high degree of video game addiction among school children.

5.1 Limitation and Strengths

This study has some methodological flaws that may affect the generalizability of the present findings. We think using only schoolchildren is one of the greatest weakness of the study.

Regarding the strengths, this study is one among the few studies in Nigeria that have investigated videogame dependency.

REFERENCES

[1] American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorder (5th ed.). Washington, DC: Author.

[2] Aldrich, C. (2005). Learning by Doing: The essential guide to simulations, computer games, and pedagogy in e-learning and other educational experiences. Pfeiffer, San Francisco, CA.

[3] Anderson, C. A., & Murphy, C. R. (2003). Violent Video Games and Aggressive Behavior in Young Women. *Aggressive Behavior, 29*(5), 423–429. https://doi.org/10.1002/ab.10042

[4] Brunborg, G.S, Mentzoni, R.A, Melkevik, O.R, Torsheim, T., Samdal, O., Hetland, J., Pallesen, S. (2013). Gaming addiction, gaming engagement, and psychological health complaints among Norwegian adolescents. *Media Psychology,* 16:115–128. doi: 10.1080/15213269.2012.756374.

[5] Chumbley, J., & Griffiths, M. (2006). Affect and the Computer Game Player: The Effect of Gender, Personality, and Game Reinforcement Structure on Affective Responses to Computer Game-Play. *CyberPsychology & Behavior, 9*(3), 308–316. https://doi.org/10.1089/cpb.2006.9.308

[6] Dhiaa, S., & Tawfeeq, W.A. (2016). Prevalence of exposure to violent video games and media among primary school children in Baghdad city. Tikrit Medical Journal, 21, 128-143

[7] Dickey, M. D. (2011). Murder on Grimm isle: The impact of game narrative design in an educational game based learning environment. British Journal of Educational Technology, 42(3), 456–469.

[8] Ede, M.O., Omeje C. J., Ncheke, D.C. Agah, J. J., Chinweuba N.H., Amoke, C.V. (2020). Assessment of the effectiveness of group cognitive behavioural therapy in reducing Pathological Gambling. Journal of Gambling Studies, doi: 10.1007/s10899-020-09981-y

[9] Ferguson, C.J., Coulson, M., Barnett. J. (2011). A meta-analysis of pathological gaming prevalence and comorbidity with mental health, academic and social problems. *Journal of Psychiatric Research,* 45, 1573–1578. doi: 10.1016/j.jpsychires.2011.09.005.

[10] Gee, J.P. (2007) Good Video Games and Good Learning: Collected Essays on Video Games, Learning and Literacy. Peter Lang, New York.

[11] Gentile, D. A., & Walsh, D. A. (2002). A normative study of family media habits. Journal of Applied Developmental Psychology, 23, 157–178.

[12] Gentile, D. A., Lynch, P. J., Linder, J. R., & Walsh, D. A. (2004). The effects of violent video game habits on adolescent aggressive attitudes and behaviors. Journal of Adolescence, 27, 5–22

[13] Greenfield, P.M. (1984) Mind and Media: The effects of Tele-vision. Computers and Video Games. Harvard University Press.

[14] Griffiths, M. D. (2002). Internet gambling in the workplace. In M. Anandarajan & C. Simmers (Eds.), Managing web usage in the workplace: A social, ethical and legal perspective (pp. 148-167). Hershey, PA: Idea Publishing.

[15] Griffiths, M. D. (2005a). A "Components" Model of Addiction within a Biopsychosocial Framework. Journal of Substance Use, 10, 191-197. http://dx.doi.org/10.1080/14659890500114359

[16] Griffiths, M.D. (2010) The role of context in online gaming excess and addiction: Some case study evidence. International Journal of Mental Health Addiction, 8, 119-125. http://dx.doi.org/10.1007/s11469-009-9229-x

[17] Haagsma, M.C., King, D.L.,Pieterse, M.E. & Peters O. (2013) Assessing Problematic Video Gaming Using the Theory of Planned Behavior: A Longitudinal Study of Dutch Young People. Int J Ment Health Addiction (2013) 11:172–185 DOI 10.1007/s11469-012-9407-0

[18] Henderson, E. C. (2001). Understanding addiction. Oxford, Mississippi: University Press of Mississippi.

[19] Kefalis C. (2020). The Effects of Video Games in Memory and Attention. International Journal of Engineering Pedagogy (IJEP), 10:51-61.

[20] Kim, M., Oh, H., and McNiel, D. (2008). Determinants of online shoppers' satisfaction in Korea. Applied Economics Letter, 15, 10, 805–808.

[21] Lee, J.H., Karlova, N., Clarke, R.I, Thornton, K, Perti, A. (2014). Facet Analysis of Video Game Genres. In Conferenc,125-39

[22] Lim, S.-J. and Lee, K.-J. (2009) Partial replacement of fish meal by cottonseed meal and soybean meal with iron and phytase supplementation for parrot fish Oplegnathus fasciatus. Aquaculture, 290, 283-289. doi:10.1016/j.aquaculture.2009.02.018

[23] Mentzoni, R.A, Brunborg GS, Molde H, Myrseth H, Skouverøe KJM, Hetland J, Pallesen S. (2011). Problematic video game use: estimated prevalence and associations with mental and physical health. *Cyberpsyhology, Behavior and Social Networking,* 14, 591–596. doi: 10.1089/cyber.2010.0260.

[24] Ng, T. W., Eby, L. T., Sorensen, K. L., and Feldman, D. C. (2005). Predictors of objective and subjective career success: a meta-analysis. Pers. Psychol. 58, 367–408. doi: 10.1111/j.1744-6570.2005.00515.x.

[25] Papastergiou, M. (2009). Digital Game-Based Learning in High School Computer Science Education: Impact on Educational Effectiveness and Student Motivation. Computers & Education, 52, 1-12 http://dx.doi.org/10.1016/j.compedu.2008.06.004

[26] Rehbein, F., Kleimann, M., & Moble, T. (2010). Prevalence and risk factors of video game dependency in adolescence: Results of a German nationwide survey. Cyberpsychology, Behaviour and Social Networking, 13(3), 269-277. doi:10.1089/cyber.2009.0227

[27] Skoric, M. M., Ching Teo, L. L., & Neo, R. L. (2009). Children and video games: Addiction, engagement and scholastic achievement. CyberPsycology & Behavior, 12(5), 565-572. doi: 10.1089=cpb.2009.0079

[28] Thomas, N.J. & Martin, F.H. 2010). Video-arcade game, computer game and Internet activities of Australian students: Participation habits and prevalence of addiction. Australian Journal of Psychology 62(2), 59-66.

[29] Wallenius M, Punamäki R, Rimpelä A (2007). Digital game playing and direct and indirect aggression in early adolescence: The roles of age, social intelligence, and parent-child communication. J. Youth Adolesc., 36(3): 325-336.

[30] Wan, C. S., & Chiou, W. B. (2007). The Motivations of Adolescents Who Are Addicted to Online Games: A Cognitive Perspective. Adolescence, 42, 179-197.

[31] Wang, A. I., et al. (2008). An Evaluation of a Mobile Game Concept for Lectures. Proceedings of the 2008 21st Conference on Software Engineering Education and Training - Volume 00, IEEE Computer Society.

[32] Wittek, C. T., Finserås, T. R., Pallesen, S., Mentzoni, R. A., Hanss, D., Griffiths, M. D., & Molde, H. (2016). Prevalence and Predictors of Video Game Addiction: A Study Based on a National Representative Sample of Gamers. International Journal of Mental Health and Addiction, 14(5), 672–686. https://doi.org/10.1007/s11469-015-9592-8