The Research of Medical Science Review

Received: 06 December, 2024
Accepted: 06 January, 2025
Published: 13 January, 2025

ISSN: 3007-1208 | 3007-1216
Volume 3, Issue 1, 2025

EFFECTS OF VIDEO GAMING ON SLEEP QUALITY, SOCIAL INHIBITION AND MENTAL HEALTH AMONG YOUNG ADULTS

Laraib Khalid[1], Ateeqa Javed[2], Maria Javed[3]

*[1,2,3]*Riphah International University Gulberg Greens Campus, Islamabad, Pakistan*

*[1]khalidlaraib581@gmail.com, [2]atiqach46@gmail.com, [3]Javedmaria138@gmail.com

ABSTRACT

Video gaming is a popular activity among young adults, but its impact on key aspects of mental and physical well-being warrants deeper investigation. This article examines the effects of video gaming on sleep quality, social inhibition, and mental health. Drawing from empirical studies and psychological frameworks, it explores both the positive and negative consequences of gaming. The findings suggest a nuanced relationship, where gaming can enhance cognitive skills and social connectedness but may also contribute to sleep disturbances, increased social inhibition, and mental health challenges in excessive use cases. The present study examined the relationship between video gaming, sleep quality, social relation, and mental health of young adults. Moreover, the study investigated the negative effect of video gaming on sleep quality, social relation and mental health of young adults. The study was based on correlational survey research design. Participants comprised of young adults (N=120) belonged from Wah cantt, Taxila, Karachi, Rawalpindi, and Islamabad. Both males (n= 54, 45%) and females (n= 66, 55%) participated in the study. Data were collected using purposive random sampling technique. Four standardized instruments including Video Gaming Experience Questionnaire (VEQ) (Barry Dauphin & Grant Heller, 2008), Mental Health Screening Questionnaire (Sharma P & Devkota G, 2019), Sleep Quality Scale and Sleep Variables Questionnaire (SQS) (Chol Shin, 2012), Social Inhibition Scale (Gronbach's, 2018) were used for data collection. Correlation matrices & Linear regression analysis was applied for testing the hypothesis. Video gaming is positively correlated with Sleep quality (r = .39, P<.01), Social inhibition (r = .40, P< .01) and Mental health (r = .28, P< .01). Video gaming positively predicted Sleep quality (β = .39, p < .001), Sleep inhibition (β = .40, p < .001), mental health (β =.28, p < .001). The findings revealed that there is positive correlation and video gaming has great impact on sleep, social inhibition and mental health of young adults.

Keywords: *Video gaming, sleep quality, social inhibition, mental health.*

INTRODUCTION

Video games create a 'virtual world' where gamers may look for challenges and thrills securely and meet their adventure and excitement requirements. Video games have become a favorite pastime for many young people. While gaming can be fun and even beneficial in some ways, it can also have negative effects on sleep, social life, and mental health. This article explores how gaming impacts these aspects of life and what young adults should be aware of to maintain a healthy balance.

Video game and sleep quality

Previous studies has investigated the effects of video gaming on sleep quality: frequent video game playing before bedtime or at night has been linked to later bedtimes, a shorter sleep duration, increased sleep onset latency and more daytime tiredness (Adam et al., 2007; Eggermont and Van den Bulck, 2006; King et al., 2013; Van den Bulck, 2004b). However, most studies to date have focused on children and adolescents rather than adults. Although video gaming is a popular pastime among adolescents (Rideout et al., 2010), previous research has identified a substantial proportion of video gamers among adults too (Lenhart et al., 2008). Indeed, gamers are found to be between 30 and 35 years old on average (Lenhart et al., 2008; Williams et al., 2008). Over half of American adults aged 18 years and older played video games, and about one in five (21%) of them played almost every day. Almost half (45.1%) of the respondents (n = 562) in a study by Weaver et al. (2009) identified themselves as gamers. In Belgium, where the current study was conducted, one in four adults were playing video games on a weekly basis (IPSOS MediaCT, 2012).

Previous studies has been found that younger adults are significantly more likely to play video games compared with older adults, studies have found that older gamers tend play more frequently. Lenhart et al. (2008) found that one-third of the gamers aged 65 years and older played almost every day, compared with one in five for the younger group.

Video gaming and mental health

Video gaming is known as to have some significant benefits such as improving focus, multitasking, and working memory, but it may also come with costs when it is used heavily. By spending a predominant part of the bed time gaming, excessive video gamers are at risk of showing lower educational and career attainment, problems with peers, and lower social skillset includes, loss of control, and adverse results of exorbitant gaming. While it's anything but an issue of discussion whether dangerous video gaming play ought to be viewed as a social compulsion, it's anything but a psychological problem has been explained since the arrival of the DSM-5 in 2013. In the DSM-5, the American Psychiatric Association (2013) characterized Internet Gaming Disorder with analytic rules firmly identified with Gambling Disorder. By and large, this choice has been upheld by different researchers (e.g., Petry et al., 2014) however has additionally caused contentions. Researchers have censured the determination of demonstrative measures and the ambiguous meaning of the Internet Gaming Disorder build, which excludes offline games from being identified with habit-forming use (e.g., Griffiths et al., 2016; Bean et al., 2017). Several analysis, literature evaluations, and meta-analyses have targeted on the correlates of labyrinthine video play, generally assessed as a time with dependency marking the upper stop of the size (e.G., Ferguson et al., 2011; Kuss and Griffiths, 2012). The degree of addictive computer game use has been determined to be related to character traits that embody low shallowness (Ko et al., 2005) and occasional self-efficacy (Jeong and Kim, 2011), tension, and aggression (Mehroof and Griffiths, 2010), and even to scientific symptoms of depression and anxiety disorders (Wang et al., 2018). Potential outcomes of on-line game use are recognized furthermore, that embody a loss of actual-lifestyles friends (Kowert et al., 2014a), pressure and nonadaptive header (Milani et al., 2018), decrease psychosocial nicely-being and loneliness (Lemmens et al., 2011), neurotic issues (Müller et al., 2015; Milani et al., 2018), and shriveled tutorial success (Chiu et al., 2004; Gentile, 2009).

Video game and Social Interaction

Video games have rapidly become a universal aspect of child development (Lenhart et al. 2008), and their quick rise to prominence has stimulated scientific inquiry and public concern (Ferguson 2013). With researchers stressing that children may be particularly susceptible to the influence of video game playing (Bushman and Huesmann 2006; Lobel et al. 2014a), the effects of video games on children's psychosocial development remains highly debated. Video games have thus been widely studied as a potential cause for aggressive cognitions and behavior (Anderson et al. 2010; Carnagey and Anderson 2004), emotional problems such as depression (Tortolero et al. 2014), and hyperactivity and inattention (Gentile et al. 2012). In these lines of research, video games are seen as a compelling entertainment medium whose clever use of feedback loops and positive reinforcement schedules train unhealthy habits of mind (Gentile and Gentile 2008a, b). Conversely, researchers have recently begun to look at video games as a domain for training healthy habits of mind (Adachi and Willoughby 2012; Granic et al. 2014). From this perspective, many video games reward communication and cooperation as well as

resolving negative emotions such as frustration. Moreover, video games seem to provide a context for the fulfillment of self-deterministic needs, thereby positively contributing to psychological well-being (Ryan et al. 2006).

The current paper adds to the discussion on gaming's positive and negative consequences with data from a longitudinal study that could address the relations between different forms of video game playing and the psychosocial development of children. Here, psychosocial development refers broadly to the psychological and social changes children undergo during development, including changes in patterns of internalizing and externalizing problems, attention, and how children relate to peers. In a recent review we argued for the potential of video gaming to afford psychosocial benefits (Granic et al. 2014). This perspective focuses on gaming as a modern and meaningful form of play, and therefore as a context where children's developmental needs can be met (Fisher 1992; Verenikina et al. 2003). Just as traditional forms of play provide positive contexts for children's psychosocial development (Erikson 1977; Piaget 1962; Vygotsky 1978), so too video games seem to afford promise (Adachi and Willoughby 2012; Granic et al. 2014). This promise is in part due to the ubiquity of gaming; with between 90 and 97% of children playing video games (Lenhart et al. 2008), it seems that social development has partly migrated from physical playgrounds to digital ones. Moreover, video games have become particularly in the past decade a more social and emotionally rich entertainment medium. Thus, modern video games may provide a context for children to bond with others and learn the benefits of cooperation.

The aim of this study is to explores the impact of video gaming on sleep quality, social behavior, and mental health among young adults, a group particularly vulnerable to the effects of excessive gaming. With gaming increasingly integrated into daily life, it is crucial to understand how it affects well-being. Sleep disturbances, social withdrawal, and mental health challenges are often associated with gaming, yet many gamers report benefits such as stress relief, enhanced mood, and improved social skills. This research seeks to provide a balanced perspective, addressing both the risks and potential benefits of gaming. By doing so, it aims to inform gamers, families, and mental health professionals about healthy gaming practices and their role in promoting overall well-being.

Literature Review

Video games collectively mean a game which its gameplay experience largely depend on the human-machine interaction through an electronically displayed graphical interface outputted by a device. It includes three platforms of video games: computer games, mobile games and console (Gmeboy, PlayStation, Wii, Xbox, etc.) games (Lim, Cheong, & Saw 2015). The use of electronics, including videogames, the previous study had been shown to affect sleep amount of time spent playing videogames and amount of gaming during the hour before bed would predict sleep quality, sleep quantity, and sleep onset latency (Amanda 2015).

In addition, computer games today typically come with multiplayer gaming after the advancement of video games and the internet, where players can compete or collaborate with other players around the world through the internet to accomplish in-game objectives. The first most popular game is PUBG allow players to play solo, duo or in squad. Solo player fight against 99 other players to become the last one standing, in duo they group up with a friend or someone random as a team of two to fight against other Duos and become the last duo or one standing and In Squad players group up with three other friends or someone random. The team can be as big as a group of four. Some of the most popular online games are now free-to-play for most players. E.g. GTA, Minecraft, Warframe and Genshin etc.

Video-gaming has become one of the most preferred leisure activities among adolescents, with prevalence rate being as high as 75% in some of the industrialized countries. Video games provide a 'virtual world' where the gamer can seek challenges and thrills in a safe way and fulfill his need for adventure and excitement. The popularity of video-games has raised concern over their possible impact on the physical, mental and emotional well-being of an individual (Babu, Ravindra P. N., & Mudabasappago 2019).

Sleep is a physiological need to ensure that individuals shake off the weariness of the day and rest to be prepared for the next day (Nag and Pradhan 2012). The quality of sleep is as important as its duration for health and for optimal body functioning. Long duration of sleep but in a poor quality will not provide the expected benefit (Kabrita et al. 2014; Pilcher et al. 1997). A good sleep quality and sufficient sleep duration will increase the physical performance of the individual as well as his/her mental performances, such as attention, perception and

learning while also increasing the quality of life (Şenol et al. 2012; Karagozoglu and Bingöl 2008). An insufficient sleep or a long but poor quality sleep will cause daytime sleepiness in individuals as well as slowness in perception and increase in level of inattention (Dewald et al. 2010).

Alternatively, misuse of the video game can potentially lead to dependence upon the game for social interaction, sleep deprivation, and even a decrease in academic performance (Lo et al., 2005, Cole & Griffiths, 2007). Social isolation and loneliness have a negative effect on health and wellbeing among older people. In order to minimize social isolation, numerous technology-based approaches have been offered; however, research demonstrating the role of different kinds of technologies and their efficacy in coping with social isolation among seniors is scarce (Khosravi & Wiewiora 2016).

Study by McMillan and Morrison (2006) has shown that the internet is mostly used by teenagers to establish communication with estranged family members from a family viewpoint. This means that using the internet as a networking medium will offer a sense of comfort for teens that might not be available in a face-to-face interaction. This study is to demonstrate that excessive gaming is strongly correlated with adverse effects such as social isolation and depression reports actual findings on how gaming activates pleasure circuits to a certain degree, which leads to impulsive behavior that prevent children from engaging in active social lives (Landau, S., & Nguyen, T. 2019).

Few studies have examined into the link between video games and depression, and the majority of them did not evaluate violent material particularly, and even fewer investigated into the relationship in preadolescent or adolescent youngsters. Furthermore, the findings of these research have been mixed: Some researchers discovered a relationship that varies by gender, while others discovered nothing. (Kanouse & Schuster 2014). The relationship between video games and aggression, as well as the relation between violent video games and depression, has not been thoroughly researched. The relationship between video game content and depression seems reasonable in light of research showing that real-life violence exposure, whether as victims or witnesses, is associated to negative mental health outcomes such as anxiety, depression, and post- traumatic stress disorder in children and adolescents. (Fowler, Tompsett, Braciszewski et al. 2009).

Despite the negative impacts on physical and mental health, perhaps the most significant danger posed on modern children by video games is the capacity for social isolation. While this is not almost as much of an issue as many experts suggest due to the fact that online multiplayer games promote a more streamlined interaction and collaboration avenue, it has been recognized that the genre most responsible for spawning introverts and eliminating children from being active members of their real community is the form of single-player role-playing games (Levine, 2015).

Previous research contributes significantly to the literature, but many gaps have been found, including a non-random sampling, self-reported data, and limited demographic data. Maximum previous researches has worked on adolescents. The current study examined the effect of video gaming on sleep quality and social life among young adults. The purpose of current study is to investigate video gaming effect on sleep quality and social relation, to find negative gaming effect on young adult's social life and to discover relationship between video gaming and social relation among young adults.

Methodology

A sample consisted of 120 youngsters ranging from 15 to 35 years, was collected through purposive sampling from different cities of Pakistan. Among the sample 55% were females and 45% were males. The inclusion criteria of study were male and female's young adults with age range 15 to 35. The participants were video gaming players. The participants other than young adults not participated in the study. Non video gamers were not included. Video gamers with age range above than 35 and less than 15 also were also excluded.

Assessment Measures

Video Gaming Experience Questionnaire (VEQ)

The scale was developed by Barry Dauphin and Grant Heller in 2008. It contained 22 questions of VG experiences. All items were scored on a 7-point Likert Scale from 1 (never/not at all) to 7 (very/frequently). Cronbach's Alpha for the VEQ was 0.828.

Mental Health Screening Questionnaire

The scale was developed by Sharma P & Devkota G in 2019. The designed scale is a 15-item instrument to assess psychological distress. Participants responded using a one-point format for Q1-15: 1=Yes, 0 = No. Higher scores indicate higher ratings on the dimension assessed. There is no specific score or cutoff for defining psychological distress in the questionnaire. The value of Cronbach alpha of the test scores is 0.7577 which is satisfactory. The overall reliability of scale is 0.85 which shows that the scale is standardized.

Sleep Quality Scale and Sleep Variables Questionnaire (SQS)

This scale was developed by Chol Shin. Consisting of 26 items, the SQS evaluates six domains of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty waking, and sleep satisfaction. An initial psychometric evaluation conducted by Yi and colleagues [1] found an internal consistency of .92, a test-retest reliability of .81. Using a four- point, Likert-type scale, respondents indicate how frequently they exhibit certain sleep behaviors (0 = "few," 1 = "sometimes," 2 = "often," and 3 = "almost always").

Social Inhibition Scale (SIS)

This scale developed by Gronbach's, Consisting of 15 items. Respondents will ask to rate these items on a 4-point response scale (from 0 = false to 3 = true), Cronbach's α (SIQ15-I = 0.93; SIQ15-S = 0.88; SIQ15- W = 0.86) and corrected item-total correlations between 0.58 and 0.80 indicated a high level of internal consistency. Cronbach's α of the total SIQ15 scale was 0.94.

Demographic Form

On a demographic sheet various characteristics of participants such as age, gender, family system (joint/nuclear), and marriage (love/arrange), education and location were documented. All the instruments were used with the permissions of their concerned authors.

Table 1

Respondent's demographic data

Variable	Category	Frequency	Percentage%
Gender	Male	54	45
	Female	66	55
	Total	120	100
Religion	Islam	120	100
Age	15-25 year	73	60.8
	26- 35 year	47	39.2
	Total	120	100
Marital Status	Single	82	68.3
	Married	32	26.7
	Other	6	5.0
	Total	120	100
Education	Primary	1	0.8
	Secondary	14	11.7
	Higher secondary	35	29.2
	University	70	58.3
	Total	120	100
Socio economic status	Lower class	8	6.7
	Middle class	89	74.2
	Upper class	23	19.2
	Total	120	100
occupation	Employed	34	28.3
	Unemployed	22	18.3
	Student	64	53.3

Total	120	100

Table 1 shows that adult's participants were chosen for this study and their age group ranges from 15 to 35 from both genders. The sample size was N = 120, 54 males and 66 females were participated in this study. Mean age of the participants is 25. This data indicate that 0.8% of sample was taken from primary, 11.7% from secondary, 29.2% from higher secondary and 58.3% from university. In lower class 6.7%, 74.2% from middle class and 19.2% from upper class were participated in this research. This data indicate that 28.3% employed 18.3% unemployed and 53.3% were participated in this study this show that that students are relatively more involved in gaming.

Procedure

This study used correlational survey design to study the effects of Video Gaming on Sleep Quality, Social Inhibition and Mental Health among Young Adults. The informed consent was provided to participants who were willing. Before the administration of questionnaire, the aim of the study was briefed to the participants. It took 25 to 30 minutes to complete the questionnaire. After the data collection, finally the results were analyzed through Statistical Package for Social Sciences (SPSS). Through result of analysis run by SPSS hypothesis were tested.

Results

To analyze the data descriptive, different analysis has been used to study the relationship between variables through Pearson product correlation. Moreover, linear regression included predictors and outcome variables.

Table 2

Psychometric Properties for Scale

Scale	*M*	*SD*	Range	Cronbach's
Video Gaming Experience Scale	76.53	23.68	22-130	.85
Sleep Quality Scale	9.544	9.54	16-60	.75
Social inhibition Questionnaire	8.193	8.19	2-42	.81
Mental Health Screening Questionnaire	2.960	2.96	2-15	.65

Table 2 shows that psychometric properties of variables used in this study. The Cronbach's value for Video Gaming Experience Scale and Social inhibition Questionnaire were .85 and .81 (>.80) which indicated the high internal consistency. The Cronbach's value for Sleep Quality Scale was .75 (>.70) which indicate satisfactory internal consistency. The Cronbach's value for Mental Health Screening Questionnaire .65 (<.70) indicate the low internal consistency.

Table 3

Correlation of study variables

Variables	VG	SQ	SI	MH
VG	1			
SQ	.39**	1		
SI	.40**	.32**	1	
MH	.28**	.23*	.37**	1

Note: M= Mean, SD= Standard Deviation and *p< .05, **P< .01, ***p<.001 VG= Video Gaming; SQ= Sleep Quality; SI= Social Inhibition; MH= Mental Health

Table 3 indicates the correlation between variables. Result shows that Video gaming is significantly correlated with Sleep quality (r = .39, P< .01), Social inhibition (r = .40, P< .01) and Mental health (r = .28, P< .01). Sleep Quality is significantly correlated with social inhibition (r= .32, P< .01) and mental health (r = .23, p< .05). This shows that there is positive correlation and video gaming has great impact on sleep, Social Inhibition and mental health of young adults.

Table 4

Simple Linear Regression showing coefficients of Video gaming and Sleep Quality

Variables	*B*	β	*S.E*

Constant	26.97***		2.73
Video gaming	.16***	.39	0.34
R^2	.15		

Note: SE=Standard Error of Estimate, B= Unstandardized Beta, *B*= Standardized Beta

Table 4 shows Liner Regression showing the effect of Video gaming on Sleep Quality among young adults in Pakistan. The value of R^2 is .15 revealed that the predictor variable .15% variance in the dependent variable with F (1, 118) = 21.34, $p < .001$. The finding reveled that video gaming positively predicted Sleep quality (β = .39, $p < .001$).

Table 5

Simple Linear Regression showing coefficients of Video gaming and Social Inhibition

Variables	*B*	β	*S.E*
Constant	11.74***		2.34
Video gaming	.14***	.40	0.30
R^2	.16		

Note: SE=Standard Error of Estimate, B= Unstandardized Beta, B= Standardized Beta

Table 5 shows Liner Regression showing the effect of Video gaming on Social Inhibition among young adults in Pakistan. The value of R^2 is .16 discovered that the predictor variable .16% variance in the dependent variable with F (1, 118) = 21.91, $p < .001$. The finding revealed that video gaming positively predicted Social Inhibition (β = .40, $p < .001$).

Table 6

Simple Linear Regression showing coefficients of Video gaming and Mental Health

Variables	*B*	B	*S.E*
Constant	4.96***		.89
Video gaming	.04***	.28	.11
R^2	.08		

Note: SE=Standard Error of Estimate, B= Unstandardized Beta, B= Standardized Beta

Table 6 shows Liner Regression showing the effect of Video gaming on Mental Health among young adults in Pakistan. The value of R^2 is .0.4 revealed that the predictor variable .04% variance in the dependent variable with F (1, 118) = 9.86, $p < .001$. The finding discovered that video gaming positively predicted Mental Health (β = .28, $p < .001$).

Discussion

The present study is aim to examine the video gaming effect on sleep quality and social relation. Moreover the study aimed to investigate relationship between variables.

The use of video games is widespread among young people, partially because of developments in the Internet and its associated innovations that have led to the availability of video games to young people. (Evans, & Lenhart, 2015). In response, literature has emerged about how playing video games can have a negative effect on young people (Hull, Williams, & Griffiths, 2013).

In the past 30 years, video games have become an increasingly common profession. Extensive research has been conducted to examine the aspects of addiction to video games and the consequences of violence in video games broader and complementary aspects from the general effect of using video games. The purpose of this study is to provide important information about the relationship between potential problems/disorders and beneficial aspects of gender-based violence and relationship style and self-esteem.

The Cronbach's α value for Video Gaming Experience Scale and Social inhibition Questionnaire were .85 and .81 (>.80) which indicated the high internal consistency. The Cronbach's α value for Sleep Quality Scale

was .75 (>.70) which indicate satisfactory internal consistency. The Cronbach's α value for Mental Health Screening Questionnaire .65 (<.70) indicate the low internal consistency.

The Second hypothesis "there is a significant relationship between video gaming, sleep pattern, mental health and social relation among young adults" was supported in the present study. There is positive correlation and video gaming has great impact on sleep quality, social inhibition and mental health of young adults. The findings are in line with the existing body of the theoretical and empirical knowledge as high level of certainty enhanced the effect of video gaming on sleep pattern, metal health and social inhibition.

A growing body of literature has investigated the effects of video gaming on sleep quality: frequent video game playing before bedtime or at night has been linked to later bedtimes, a shorter sleep duration, increased sleep-onset latency and more daytime tiredness (Adam et al., 2007; Eggermont and Van den Bulck, 2006; King et al., 2013; Van den Bulck, 2004b).

The propose our findings was that a multi-facet conceptualization of social inhibition could offer a helpful framework for learning psychological mechanisms Underlying individual variations in perceived social stress (Denollet, 2013). Social isolation and loneliness have a negative effect on health and wellbeing among older people. Social inhibition may further increase in adulthood when people are motivated to make a particular impression on others but doubt that they will do so because they expect unsatisfactory reactions from others (Asendorpf, 1990; Schlenker and Leary, 1982).

Many who played video games every day for less than an hour had more friends, less emotional difficulties, and were less hyperactive than their peers. And those youngsters who play more than three hours a day the consequences are the opposite: excessive gamers are less sociable and more frustrated.

In the last years, the significant boom in using video games (VG) has been raising health issues that remain insufficiently understood (khazaal et al., 2016) . The World Health Organization [WHO] 2018 has recently included "gaming disorders" in the list of mental health conditions. Indeed, several research projects have been exploring VG addiction from a behavioral, emotional, brain circuits and genetic perspectives (Griffiths et al., 2012; Dong et al., 2017). Linear regression was run to check negative affect of video gaming on mental health. The finding revealed that video gaming has negative effect on mental health. Various studies focus on longitudinal measures that attempt to demonstrate causal relationships between violent videogames and aggression. Many of these studies rely on self-reported measures of aggressive feelings or attitudes (Shibuya et al., 2008; Möller and Krahé, 2009; Anderson et al., 2010 Lemmens et al., 2011)

Conclusion

The aim of present study examined the impacts of Video gaming on Sleep quality and Social relation and mental health, we also investigated the relationship between video gaming and social relation, Sleep quality and mental health among young adults. Our findings suggest that video gaming has negative effect on Sleep quality, mental health and social interaction. This research show that there is positive correlation and video gaming has great impact on sleep, social inhibition and mental health of young adults. These types of researches in future should be implemented to guide and spread awareness video gaming has negative effect on mental health sleep and social relation. We only focus on the negative consequences of video gaming and we do not focus positive aspects it also has positive outcome if video gaming is played with certain restriction and time bounding it has positive impact on mental health. Future researchers are needed to explore the positive effect.

REFERENCES

Adam, E. K., Snell, E. K., & Pendry, P. (2007). Sleep timing and quantity in ecological and family context: a nationally representative time-diary study. Journal of family psychology: *JFP journal of the Division of Family Psychology of the American Psychological Association* (Division 43), 21(1), 4–19. https://doi.org/10.1037/0893-3200.21.1.4

Babu, Ravindra. P. N., & Mudabasappagol (2019) Impact of video-games on academic performance and sleep duration in medical students. *Indian Journal of Clinical Anatomy and Physiology*;6(4):396–400 https://doi.org/10.18231/j.ijcap.2019.086

Dewald, J. F., Meijer, A. M., Oort, F. J., Kerkhof, G.A., Bögels, S. M. (2010). The influence of sleep quality, sleep duration and sleepiness on school performance in children and adolescents: A meta-analytic review. *Sleep Medicine Reviews, 14*:179-189, https://doi:10.1016/j.smrv.2009.10.00

Griffiths MD (2019). The therapeutic and health benefits of playing videogames. In: Attrill-Smith A, Fullwood C, Keep M, Kuss DJ, eds. The Oxford Handbook of Cyberpsychology. Oxford University Press; 2019:485-505. https://doi: 10.1093/oxfordhb/9780198812746.013.27

Kabrita, C. S., Hajjar-Muça, T. A., Duffy, J. F. (2014). Predictors of poor sleep quality among Lebanese university students: association between evening typology, lifestyle behaviors, and sleep habits. *Nature and Science of Sleep, 6*:11-18, https://doi:10.2147/NSS.S55538

Khosravi, Pouria., Rezvani., Azadeh, & Wiewiora, Anna (2016). The impact of technology on older adults' social isolation. *Computers in Human Behavior*, 63, pp. 594-603. https://eprints.qut.edu.au/95916/

King, D. L., Delfabbro, P. H., & Griffiths, M. D. (2013). Video game structural characteristics: A new psychological taxonomy. International Journal of Mental Health and Addiction, 11(1), 90-106. https://doi.org/10.1007/s11469-012-9396-4

Kowert, R., & Quandt, T. (Eds.). (2015). The video game debate: Unravelling the physical, social, and psychological effects of video games. Routledge.

Kuss, D. J., & Griffiths, M. D. (2012). Internet gaming addiction: A systematic review of empirical research. *International Journal of Mental Health and Addiction*, 10(2), 278-296. http://link.springer.com/content/pdf/10.1007%2Fs11469-011-9318-5.pdf

Landau, S., & Nguyen, T. (2019). Effects of Gaming on Children's Brains: Depression and Social Isolation. *Advances in Social Sciences Research Journal*, 6(9) 291-302. https://dio:10.14738/assrj.69.4856

Lemola, S., Perkinson-Gloor, N., Brand, S., Dewald-Kaufmann, J. F., & Grob, A. (2015). Adolescents' sleep patterns and psychological functioning: A mediation model linking sleep to academic performance. Journal of Adolescence, 45, 45-54. https://doi.org/10.1016/j.adolescence.2015.09.004

Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2009). Development and validation of a game addiction scale for adolescents. Media Psychology, 12(1), 77-95. https://doi.org/10.1080/15213260802669458

Lim, Y. Q., Cheong H. Q., & Saw, S. Q. (2015). The correlation of Video games with positive affect and negative affect Among Utar undergraduate students. http://eprints.utar.edu.my/2329/1/PY-2016-1203425.pdf

McMillan , S., & Morrison, M. (2006). Coming of age with the internet: A qualitative exploration of how the internet has become an integral part of young people's lives. *New Media and Society*, 8, 73-95.

Michelle et al. (2016) Video Gaming in a hyper connected World: A Cross-sectional Study of Heavy Gaming, Problematic Gaming Symptoms, and Online Socializing in Adolescents doi:10.1016/j.chb.2016.11.060

Nag, C., Pradhan, R. K. (2012). Impact of television on sleep habits. *Biological Rhythm Research,* 43:423-430, https://doi:10.1080/09291016.2011.599630

Pilcher, J. J., Ginter, D. R., & Sadowsky, B. (1997). Sleep quality versus sleep quantity: relationships between sleep and measures of health, well-being and sleepiness in college students. *Journal of psychosomatic research*, 42(6), 583–596. https://doi.org/10.1016/s0022-3999(97)00004-4

Redmond, Dustin L. (2010). The effect of video games on family communication and interaction. *Graduate Theses and Dissertations*. 11614. https://lib.dr.iastate.edu/etd/11614

Şenol, V., Soyuer, F., Akça, R. P., Argün, M. (2012). Adolesanlarda uyku kalitesi ve etkileyen faktörler [The sleep quality in adolescents and the factors that affect it]. *Kocatepe Tıp Dergisi [The Medical Journal of Kocatepe], 13*:93-102.

Tortolero, S. R., Peskin, M. F., Baumler, E. R., Cuccaro, P. M., Elliott, M. N., Davies, S. L., Lewis,

T. H., Banspach, S. W., Kanouse, D. E., & Schuster, M. A. (2014). Daily violent video game playing and depression in preadolescent youth. *Cyberpsychology, behavior and social networking*, 17(9), 609–615. https://doi.org/10.1089/cyber.2014.0091

Von der Heiden, J. M., Braun, B., Müller, K. W., & Egloff, B. (2019). The Association Between Video Gaming and Psychological Functioning. *Frontiers in psychology*, 10, 1731. https://doi.org/10.3389/fpsyg.2019.01731