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RESEARCH ARTICLE

Recreational Activity for De-Addicting Enthusiatic Gamers Raised by Parents in High Stressed Occupation

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Abstract: ***Background of the Study***: When compared to youngsters who grow up under the guidance of their parents, children of severely stressed-out working parents tend to spend more time on screens. Therefore, video game addiction (internet gaming disorder) is marked by drastically diminished control over gaming behaviour, which has an adverse effect on everyday functioning, including personal, social, educational, and employment duties. According to current studies, winning video games may cause a negative dopamine release that ultimately makes the child miserable. Recreational activities will help to decrease screen time, thereby supplying a beneficial source of dopamine and enhancing overall well-being. ***Method***: A quasi-experimental study was conducted to examine the degree of video game addiction among children raised by parents in high stressed occupations. The standardized questionnaire designed to assess the dimensions of video game addiction. ***Conclusion***: This pilot study concluded that children and their parents require to understand more about the potential negative effects of gaming addiction on their overall well-being.

Keywords: Recreational activity, gaming disorder, brain function.

INTRODUCTION

In the modern world of fast-paced, high-stress jobs requiring parents' full attention, finding balance and appropriate outlets for their children especially avid gamercan is difficult. Concerns over gaming's possible detrimental effects on children's and teenagers' physical and mental health care become more widespread as the medium continues to gain her popularity. When compared to youngsters who grow up under the guidance of their parents, children of severely stressed-out working parents tend to spend more time on screens. Therefore, video game addiction (internet gaming disorder) is marked by drastically diminished control over gaming behaviour, which has negative effect on everyday functioning, including personal, social, education.

According to current studies, winning video games may cause a negative dopamine release that ultimately makes the child miserable. Recreational activities will help to decrease screen time, thereby supplying a beneficial source of dopamine and enhancing overall well-being. But rather than bashing games completely, it's important to understand that moderation and balance are essential. While playing video games on the internet is a common entertainment pastime, there are growing worries that a large percentage of players are developing addictions. Teenager and especially males are significantly more prone than girls to be addicted to online gaming, as seen by their longer screen times, increased cravings, and negative impacts on their health, which have, in isolated incidents, also results in death. (Chen. K et al.,2018).

A person's confidence is derived from their sense of self-worth. It could be both high and low. Students that have high self-esteem are typically more self-aware and confident. On the other hand, low self-esteem was accompanied by low self-confidence. The foundation of a student's ability to be competent and handle life's basic challenges is their sense of self-worth. Due to their high levels of stress at work, parents who don't manage their kids' time well often end up with game addiction (Moneva et al.,2020).

HIGH STRESSED OCCUPATIONAL PARENTS

Occupational stress strongly influences family dynamics, with its impact differing across professions such as IT, finance, healthcare, and education (Sabina et al., 2023). High workloads, irregular schedules, and emotional strain often reduce quality family time and increase conflict, while work–family conflict contributes to parenting stress, anxiety, and less mindful parenting, which may affect children's psychological development. Implementing family-friendly workplace policies, such as flexible schedules, can help parents balance roles, improve mental health, and foster healthier family relationships (Gumarac et al., 2024).

GAMING DISORDER

The concept of video game "addiction" was proposed as a diagnosis for individuals that play video games for long periods of time at the expense of financial, educational, and social responsibilities (Charlton et al.,2002). Video gaming was more than just entertainment during the early stages of the COVID-19 epidemic, serving as a coping mechanism for many individuals facing unprecedent challenges. (Pallavicini et al.,2022)

In more detail the avid gamers may lead to face another serious condition which is known as gaming disorder the eleventh revision of the International Classification of Diseases

(ICD-11). There are three main symptoms associated with gaming disorder diagnosis that is impaired control

over gaming, prioritizing gaming over other interests and daily activities in additional increasing gaming despite of negative outcomes. Developing internet gaming disorder requires several interacting internal factors such as deficient self, mood regulation, problems of decision-making, and external factors such as deficient family background and social skills (Frank et al, 2018). Addiction can also be caused by environmental factors, such as possessing ready access to video game systems and games. The difference between gaming and other activities is becoming more difficult due to the growing popularity of smartphones and other portable gaming devices, which have made it simpler than ever for users to play games whenever and wherever they picked. Furthermore, gaming disorder will result in notable distress and a major impairment in educational, occupational, and other critical facets of functioning.

Some people turn to video games as a coping mechanism when they're struggling with symptoms related to a primary disease, such as depression or anxiety. In these situations, any problems related to gaming may be resolved by receiving efficient therapy for the underlying mental health illnesses.

BRAIN FUNCTION WHILE GAMING

Internet addiction is closely linked to alterations in the dopaminergic system, where reduced sensitivity to everyday rewards drives excessive engagement in online activities (Kuss et al., 2012). Prolonged gaming and internet use lead to neuroadaptations in brain regions like the mesolimbic system, prefrontal cortex, and striatum, fostering tolerance, dependence, and withdrawal. These changes are associated with deficits in attention, decision making, and emotional regulation, along with maladaptive coping behaviors. Studies show that children spending over three hours gaming daily exhibit altered brain activity reduced in visual areas but heightened in the frontal cortex—impacting cognitive functions and increasing negative outcomes.

RECREATIONAL ACTIVITY

Recreational activities, ranging from hobbies and artistic pursuits to sports and social engagements, provide relaxation, enjoyment, and fulfilment by stimulating the brain's reward system. These activities often trigger the release of dopamine, which reinforces motivation and pleasure, whether through creative expression like painting, skill-building such as cooking, or physical exertion like dancing and sports (Werbach & Hunter, 2012). Alongside dopamine, exercise also releases endorphins, the body's natural "feel-good" chemicals, which help reduce stress, anxiety, and depression. By offering diverse opportunities for reward and satisfaction, recreational activities serve as a healthy counterbalance to the excessive stimulation derived from gaming, fostering overall emotional and physical well-being.

EXERCISE AND ITS DOPAMINE ACTIVITY

Exercise-induced neurochemical changes, particularly the interaction between dopamine and endorphins, play a vital role in enhancing mood, reducing stress, and promoting overall mental health. Regular aerobic activity not only stimulates dopamine release in key brain regions like the ventral striatum and caudate nucleus but also induces adaptive plasticity that protects neurons from oxidative stress and inflammation (Bauer et al., 2020). These mechanisms highlight how recreational and physically engaging activities can serve as healthy alternatives to excessive gaming by providing natural sources of reward and motivation. Research shows that structured recreational activities, especially sports, foster discipline, teamwork, resilience, and social connectedness while reducing risks of sedentary behavior, poor health, and social isolation often linked to gaming addiction (Gentile et al., 2017; Eime et al., 2013). Beyond sports, creative and mindfulness-based pursuits such as art, music, and meditation—offer additional avenues for self-expression, stress relief, and emotional regulation. Collectively, these activities provide holistic benefits that not only counterbalance the addictive pull of gaming but also promote long-term physical, cognitive, and emotional well-being, particularly in children of parents facing high occupational stress.

Need of the study

In light of recent technological breakthroughs, gadgets have become an essential component of daily life, and many organizations now recognize video gaming as a sport. However, this lifestyle often leads people to become lethargic, rarely leaving their homes, thereby increasing the risk of various illnesses. It is important to acknowledge that the growing population of video game players in today's society is influencing not only their daily activities but also the way their cognitive systems function. According to the World Health Organization (WHO), gaming disorder is defined as an addiction to video or computer games, and in growing children, prolonged improper posture during gaming can result in serious health problems.

The aim of the study is to understand the impact of recreational activities in reducing children's inclination toward gaming and the risk of subsequent addiction. Specifically, the study seeks to collect data from parents working in stressful occupations about their children's gaming habits, examine whether these children spend more than three hours daily on video games, and evaluate the effectiveness of recreational activities in mitigating video game dependency.

METHODOLOGY

Study design

- Quasi Experimental Study

Study type

- Pre & Post Study Design

Study setting

- Community setting

Sample design

- Simple Random Sampling

Sample size

- 50

Inclusion criteria

- Normal individual both boys and girls.
- Age range of 12 to 15 years.
- Children spends more than 60 minutes per day on screen time.

Exclusion criteria

- Social gamers
- Children who do not have smart phone addiction.
- Those who are already taking treatment for game addiction.
- Psychiatric illness

Outcome measuring tool

- The instrument used to obtain information during the study was the parents' and children together version of the **Modified Gaming Addiction Scale** (appendix 2), which comprises 15 items to be completed in an estimated 30 minutes. The following dimensions and variables were analysed in the study.

Tool Description

This dimension includes playing video games all day and how often you feel the need to play them (items 1 and 2), does their feel guilty or difficult if it gets longer than their intended (item 3 and 4), does playing relieve stress or escape from reality (item 5 and 6), tried to shorten the gaming session (item 7 and 8), felt disappointed or tensed when failed play (item 9 and 10), playing distract from responsibility and kept all night awake (item 12 and 13), experienced negative effect gaming continuously (item 14), anger towards parents and relatives while gaming (item 11 and 15).

Scoring

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very often

Procedure

A pilot study was executed to evaluate the recreational activity in avid gamers who raised by the high stressed occupational parents. The study was conducted with 50 participants who satisfies the inclusion criteria. Permission to involve the children in the study was granted from the parent who's under high stressed occupation. The children' parents will be requested to sign the informed assent letter after being fully briefed on the study's purpose. The participants were voluntary, and those unwilling to participate were excluded.

The major outcome measure of the study was a modified gaming addiction scale, which is consisted of 15 questions evaluated on 5-point scale that addressed the degree of gaming addiction and a questionnaire gathering demographic information. Before any recreational activities were implemented, pre-scores were gathered and the parents were given detailed explanation of this questionnaire. After conducting the recreational activities to the children on the given duration the modified gaming addiction questionnaire was collected and it'll be considered as post-score. The results obtained from the pre-score and post-score will be analysed. In children raised in high-stress circumstances, the study aims to provide light on how recreational activities could operate as a counterbalance to gaming addiction.

FIG-1 (Social play – touch without crossing)

FIG-2 (modified juggling)

FIG -3 (leap frog)

FIG– 4 (skipping)

FIG– 5 (Team play – kick and catch the ball)

FIG - 6 (Cat and hang)

FIG– 7 (free kick)

Statistical Analysis

Parameter	Value
Sample Mean (M)	58.8
Population Mean (M)	90
Standard Deviation (SD)	8.1
Sample Size (n)	50
t-value	-27.3
p-value	< 0.001
Cohen's D	3.9

Normality p-value	0.01286
A priori power	0.9339
Post hoc power	1
Skewness	-0.103
Excess Kurtosis	-0.9597
95% CI for Group Mean	[56.4781, 61.0819]

Report

The study aimed to evaluate whether engaging in recreational activities can significantly reduce the inclination towards gaming and mitigate the risks of gaming addiction. A one-sample t-test was conducted to compare the mean inclination towards gaming in a group participating in recreational activities with the population mean known for gaming inclination.

Statistical Significance and Effect Size

The sample mean for the group engaged in recreational activities was found to be 58.8, which is considerably lower than the population mean of 90. The standard deviation of the sample was 8.1, indicating a relatively tight spread of data points around the mean. The t-test yielded a t-value of -27.3 with a p-value of 2.89e-31, which is substantially below the common alpha level of 0.05. This extremely low p-value indicates a highly significant difference between the sample mean and the population mean, leading us to reject the null hypothesis that there is no difference between the two means.

The Cohen's D value of 3.9 suggests an exceptionally large effect size. In practical terms, this means that the magnitude of the difference between the group mean and the population mean is not only statistically significant but also of great practical significance. An effect size of this magnitude underscores the substantial impact that recreational activities have in reducing gaming inclination

Confidence Interval and Power

The 95% confidence interval for the group mean was calculated to be between 56.4781 and 61.0819. This interval does not encompass the population mean of 90, further confirming the significant difference observed.

Additionally, the power analysis revealed both a priori power of 0.9339 and a post hoc power of 1. These values indicate that the study had more than sufficient power to detect a significant difference, should one exist. High power values reduce the likelihood of Type II errors, where a false null hypothesis might incorrectly fail to be rejected.

Distribution Characteristics

The normality p-value of 0.01286 suggests a slight deviation from normality, but given the sufficiently large sample size (n = 50), this deviation does not substantially affect the validity of the t-test results. Skewness and kurtosis values were -0.103 and -0.9597, respectively, indicating that the distribution is approximately symmetrical and mesokurtic, resembling a normal distribution with normal-like tails.

Conclusion

Results of the one-sample t-test indicated that there is a significant large difference between Group (M = 58.8, SD = 8.1) and the population mean (M = 90), $t(49)$ = 27.3, $p < .001$, Cohen's D = 3.9.

The statistical analysis strongly supports the hypothesis that recreational activities significantly reduce the inclination towards gaming. The large effect size (Cohen's D = 3.9) indicates a meaningful and impactful reduction, suggesting that incorporating recreational activities can be a highly effective strategy in mitigating gaming addiction. These findings advocate for the promotion of recreational activities as a preventive and therapeutic measure against excessive gaming and its associated risks.

Recreational activities not only offer a healthy alternative to gaming but also contribute to overall well-being by providing physical, mental, and social benefits. As such, stakeholders, including educators, policymakers, and health professionals, should consider integrating and encouraging recreational activities within their respective domains to combat gaming addiction effectively.

RESULT

A total of 70 surveys were completed. Of the total survey, 50 individuals met the criteria for avid gaming, and 20 met the criteria for casual gaming. The participants meeting the avid gaming criteria were invited to participate in the experiment. There were 19 female and 31 male participants.

The impacts of recreational gaming can be divided into various categories, including emotional, social, civic, somatic, and cognitive which includes learning vision (Dekker et al.,2023). These ideas form the framework of this recreational activities like leap frog, skipping, juggling, free ball kicking and social and team play was given to the children for 12 weeks (2 days in a week) and results were collected through the questionnaire. Significant changes in social, cognitive, civics skills were noted.

Recreational activities given to children have proven to promote social behaviour, lower depressive symptoms and stress, and stimulates emotional stability,

acceptance, resolving capacity and reappraisal. Play - fighting in real life helps to promote function in few parts of the brain to highly coordinate with social activity and helps to regulate emotional self, it also promotes attention and priorities, the get rid of procrastination and promotes an efficient learning period. Attention specific to certain activity helps children from ignoring & getting distracted to irrelevant thoughts & helps distinguish necessary, unnecessary information.

Recreational activity eases every day dress and helps the kids reduce anxiety & depression group activity gives children a sense of value and belonging.

Behaviour is often shaped by their interactions with our environment and relationships with other children so that they can learn to trust others and communicate effectively, which will play an important part in all of their relationships. The direct and indirect links to our mental health are extremely beneficial. Energy levels of the kids participate in the survey is improved significantly and were at high energy levels throughout the day, it also helped them sleep better.

DISCUSSION

Video game addiction is a complex phenomenon shaped by an intricate interplay of psychological, social and environment factors. An immersive virtual environment that offers a sense of accomplishment, mutual respect, and an escape from the stresses of real life is frequently what draws enthusiastic gamers into strap. These virtual settings offer instant gratification and a well-organized framework of objectives, which may be especially alluring to people who are trying to manage their stress or satisfy unfulfilled needs. Electronic and computer game development poses a serious risk to children and adults, as well as contributing to psychological disorders and depression in these populations. While children used to play with other children, these days they spend most of their time on computer games as soon as they learn how to use them and become familiar with them; nevertheless, these games are unable to foster emotional or human relationships. The National Institute of Mental Health's follow-up report and the ensuing study noted that these major effects of seeing violence on television are children may become less sensitive to the pain and suffering of others, children may be more fearful of the world around them, children may be more likely to behave in aggressive or harmful ways toward others and decreases the social interaction.

The Diagnostic and Statistical Manual of Mental Disorders, most recent edition, introduced Internet Gaming Disorder (IGD) to Section III in 2013. Additionally, gaming disorder (GD) was recently added to the Eleventh World Health Organization's categorization system (ICD-11, WHO, 2018). In fact, a number of empirical research and doctors have noted that certain young adults or teenagers exhibit signs of problematic video game usage, which are comparable to those of other well-known addiction illnesses. Moreover, a great deal of overlap has been observed between IGD and other addictive illnesses. Recent research, for instance, has demonstrated brain pathways that are similar between substance use disorder (SUD) and compulsive gambling, as well as between IGD and problematic video game playing. Moreover, IGD has been linked to numerous problematic personality traits, including impulsivity, sensation seeking, low self-esteem, and neuroticism, much like other addictive behaviors. Two recent studies have demonstrated an association between gaming and dysfunctions in emotion regulation, following other research that has shown that emotional regulation failures are linked to SUD and pathological gambling.

These studies have revealed that regular gamers exhibit higher levels of alexithymia, express their emotions less frequently, and have greater difficulty being emotionally reactive than irregular gamers. According to the Elsevier study, emotional ambiguity and control were predictive of IGD, and impaired emotion regulation was found to be a risk factor for IGD. These interesting results raise the question of the emotional functioning of gamers presenting IGD as well as the predictive value of various emotional dimensions in this disorder. In fact, one hypothesis based on previous research could be that alexithymia (first used by Sifneos (1973) to describe a lack of emotional skills initially found in psychosomatic patients) is a factor that could explain engagement in and maintenance of video game use.

Indeed, individuals with poorly regulated emotions often engage in maladaptive behaviors, such as in addictive disorders, to escape from or downregulate their emotions. Thus, several studies have shown that the addictive behaviour relieves the emotional dysregulation associated with alexithymia (perceived as a pre-existing trait that fosters addictive disorders). Given the conceptual overlaps between alexithymia, depression and anxiety, and given gender differences in emotion regulation (males tend to regulate their emotions less, feel them with less intensity, and express them less often, it seems necessary to control these dimensions when studying the relationship between alexithymia and IGD. Furthermore, several studies have found strong associations between IGD and anxiety and depression, and most of these studies have found a higher prevalence of IGD in males. Thus, it seems interesting to investigate the relationship between IGD and alexithymia while controlling for anxiety, depression, and gender. Because of the differences in age the factor structure and psychometric properties of the most commonly used tool for testing alexithymia – quality of measurement progressively deteriorating with younger age (Bonnaire et al.,2019).

Almost 150 million individuals play video games on a regular basis, or for at least three hours a week, according to studies. The majority of parents – 71 percent –

indicates that their child's use of video games has a beneficial impact on their life. The state of India gaming report from Lumikai and google states that 50 percent of Indian gamers are between the teenagers with a male to female gamers ratio of 60:40. Children from 8 to 17 years of age spend average of 1.5 to 2 hours daily playing video games. (Alanko et al.,2023)

Decades of research has framed recent advances that shed light on the ways in which games affect children's social behaviours, cognitive development, mental and physical health. The sales of video games are rising every year. Over 24.5 billion games were sold by the video game industry in 2016, an increase from 23.2 billion in 2015 and 21.4 billion in 2014. The top video games in terms of sales numbers are ranked as follows: The first one Minecraft has 300,000,000 in sales according to rank and title. Grand Theft Auto V the second position, November 18, 2011<195,000,000. And the other games followed by the sales account are Tetris (EA), Wii Sports, PUBG: Battlegrounds, Mario Kart 8 Deluxe, Red Dead Redemption 2, Super Mario Bros, Overwatch and in tenth position –

The Witcher 3: Wild hunt with sale number of 50,000,000 in May month ,2015.

The video game market in India brought in $830 million in sales in 2023, the market is projected to achieve an impressive $473.7 billion by 2027. The growing accessibility of gaming across several platforms, which offers gamers a variety of experiences, is responsible for its popularity. (Forbes India-2024)

The effect of video games on personality has been linked to a variety of issues, including the modification of players' behaviours for better or worse. This could open up new possibilities for learning brand-new behaviours and talents or for honing already-existing ones that were established in the way the players develop, which are still developing and it's affected by these behavioural shifts seen in the personalities of teenagers. The reaction that accompanies engaging with a particular video game differs for each player based on how the games material is presented and perceived by them. Any individual thoughts process and behaviour has a strong influence on how they behave under a certain situation. It follows that their actions in game should reflect this. Online gamers exhibit similar behaviours to those they exhibit in real-life. Several studies have examined into medical aspect and it worth mention that neurons in the human body deal with the impacts of playing video games in a similar way to how they deal with shapes in the real-word. (Muhannad et al.,2019)

Children love to learn through play, therefore (fig 3 – leap frog) is a deep dive into development of finger strength and isolation with examples of how this may be done using games. Developing the skills of finger isolation, or moving one finger at a time, is crucial for developing fine motor skills. More specifically, it helps young children in good pencil holding and a longer amount of time and force while using pencil or pen. Finger strength is helpful for doing for basic activity in simple things like zipping and opening buttons, tying shoelaces, and so on. As children develops finger strength is needed for typing on a keyboard, playing musical instruments and various other adult daily living skills such as pegging clothes on a line or using a screwdriver. (Rachel et al.,2021)

The other games such as (fig 2-modified juggling) and other activities, may not seems to have a merely fun activity but it has many potential benefits while preforming the play. It states exercise your body and your brain while learning to play in different textures. In addition to many other benefits, juggling can help with balance, motor skills, rhythm, timing, ambidexterity, problem-solving, and eye-hand coordination. People who play juggle even seem to grow their brains according to research. In addition, social play and team will help with self-esteem, confidence, perseverance, teamwork, and communication. Children that learn best kinaesthetically will also thrive at activities. (Boston Children's Museum, 2024)

Regular exercise will help the body by improving the cardiovascular health and decrease the risk of obesity and other health problems. Playing the ball (fig 5 and 7) is an extremely effective exercise and prepares the importance of life skills by the enhancing the sport skills such as throwing and catching. By practicing the ball catching and kicking can help the child to improve hand-eye coordination, where use the eyes to direct the attention to a task and uses the hand to execute it. This simple game can develop child's eye tracking skills, which are vital for reading books. By engaging the child to play the ball it may develops the interest in sports activities such as basketball and football (fitness kid – 2024). Games are a trigger for intense positive emotions by experiencing (fig 1- social play) helps to build relationship and it provides support for attainment and nullifies negative emotions by adding more motivation in general and social behaviour.

In the climbing world, having firm grip is essential. There are many health advantages of hanging for climbing (fig 6 - cat and hang) which can improve both general health and climbing performance. Building finger and forearm strength through hanging makes it simpler to keep a firm grip on the rock or climbing holds. Climbing is not just about strong fingers but also develops upper body strength by engaging the muscles of the shoulder, back muscle, and arms which provides the strength for various activities including pull-ups, lock-offs, and dynos.

It alleviates lower back pain by enhancing the movement by stretching the spine while climbing and also promotes the better alignment of spine.

Hanging primarily targets the upper body by engages the core muscles which gives stability during exercise and keeps the body straight and maintain the balance. These activities also enhance the flexibility that improves in better range and technique while preforming.

Beyond the physical advantages the activities provide an opportunity for mindfulness and concentration during the activity which may get tuned inside the body. (Shams et al.,2023)

In (figure -skipping) it creates the foot-to-earth connections which strengthens and stabilizes muscles in feet and ankle. It boosts stamina and promotes healthy night sleep. It even reduces the risk of anxiety and depression and reports good brain and heart health functions. (Devin et al.,2023)

The recreational activities and physical education are widely acknowledged as effective means of promoting pleasant social interactions. In order to create cohesive communities, people need to be able to work together, communicate, and support one another. These activities offer an organised setting where people may do just that. Recreational sports and physical education have some socialising benefits that are frequently more widely recognised and appreciated than any negative ones. They act as unifying forces between disparate groups, encouraging communication and collaboration.

These activities emphasis the fair play and aid in the removal of social barriers by highlighting cooperation and encourage inclusivity. Also, the values of cooperation and sportsmanship that are taught in physical education can be transferred to broader communities, making them useful tools for promoting peace and resolving disagreements. Sports group dynamics are similar to those in society in that they provide a small-scale environment where people can practise resolving disputes, compromising, and cooperating to achieve shared objectives. Therefore, engaging in recreational activity contributes to the development of harmonious and tranquil social environment in addition to improving an individual's health and fitness (Oyerinde et al.,2014).

CONCLUSION

The current study derives that recreational activity set positive impact on avid gamers. The related effects of games are determined by its features or manner of play. It's critical to consider the potential negative aspects of gaming. The majority of the advantages gained from gaming can be implemented, either directly or indirectly to real-world circumstances.

It would be interesting and relevant to do follow up research on problematic gaming behaviours and promote different approaches to obtain additional understanding regarding the encouragement of safe gaming in paediatric population.

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