

Harmful Effects of Video Games on Youths: A Study

Ejimkonye PO, Barabash IV

References

1. Aguilar Cordero, MJ, Ortegón Piñero, A., Mur Villar, N., Sánchez García, JC, García Verazaluce, JJ, García García, I., & Sánchez López, AM (2014). Physical activity programs to reduce overweight and obesity in children and adolescents: systematic review. *Hospital Nutrition*, 30 (4), 727-740.
2. Ayenigbara, I. O. (2018). Gaming Disorder and Effects of Gaming on Health: An Overview. *Journal of Addiction Medicine and Therapeutic Science*, 4(1), 1-3..



WJMER

World Journal of Medical Education and Research

An Official Publication of the Education and Research Division of Doctors Academy



The Pandemic Has Snatched a Generation of British Children. Adults Have Turned a Deaf Ear to Their Tormented Cries

The Impact of a Global Pandemic on the Mental Health of Children: The Silent Screams

Changes in Medical Education as a Consequence of the COVID-19 Pandemic: A Reflective Piece

The Transition from Face-to-Face to Virtual Teaching: The Challenges and Opportunities

Harmful Effects of Video Games on Youths: A Study

Media Manipulators: How Social Media Companies Are Creating and Exploiting Teenagers' Insecurities

The Importance of Safeguarding Children and Young People During the COVID-19 Pandemic: A Message to Clinicians



ISSN 2052-1715

Special Issue



Harmful Effects of Video Games on Youths: A Study

Ejimkonye PO¹, Barabash IV

Institution

¹Stavropol State Medical University, Stavropol, Russia

Abstract

Video games are enjoyed by today's youngest generation. This research, which was conducted on a number of youths in Stavropol State Medical University, aims to show the harmful effects of this silent killer on students. The playing of these games has to be placed under a microscope and given as much attention as possible because it is the source of certain health-related issues.

Key Words

Video Games; BMI (Body Mass Index); RR (Respiratory Rate); HR (Heart Rate)

WJMER, Vol 25: Issue 1, 2020

Corresponding Author:

Miss Praise O. Ejimkonye ; E-mail: ejimkonyepraise@gmail.com

Background

Video games have always been a disturbing entertainment amongst the youths of Stavropol State Medical University, Russia. It has been observed that quite a percentage of students play games, irrespective of the time of the day and other activities that are happening. The adverse effects of video games on these students are increasingly disturbing because these games are more accessible now. Unlike before, they can be played on any computing device, such as mobile phones, tablets, computers, and televisions (Ayenigbara, 2018). They can now be easily moved from one place to another.

Aim

The purpose of this research is to comprehensively examine game-play research to highlight the negative effects of video games. This research explores how video games can be related to obesity, cardio-metabolic deficit, bad performance in school and work, and other related aspects.

Introduction

Video games are a source of entertainment for a wide population and have various effects on an individual's well-being. Video game addiction is problematic since it causes psychological dependency on video games which, in a long

run, will hinder the normal functioning of the individual.

The first effect of video games that this article will consider is obesity, which is defined as abnormal or excessive fat accumulation that presents a risk to health. A crude population measure of obesity is the body mass index (BMI): a person's weight (in kilograms) divided by the square of his or her height (in metres). A person with a BMI of 30 or more is generally considered obese. A person with a BMI equal to or more than 25 is considered overweight (Aguilar Cordero MJ, 2014).

Overweightness and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer. Once considered a problem only in high income countries, overweightness and obesity are now dramatically on the rise in low - and middle-income countries, particularly in urban settings (WHO 2020).

The next effect of video games is stress, which is a physical, mental, or emotional factor that causes bodily or mental tension. Stress can be external (from the environment, psychological, or social situations) or internal (illness, or from a medical procedure). Stress can initiate the "fight or flight" response, a complex reaction of

neurologic and endocrinologic systems (medicine.net).

I will also explain the effect on the cardiovascular system, which can result in cardiovascular diseases which can be referred to as health problems that affect the heart and blood vessels.

Materials and Methods

The study is a cohort study that included twenty (20) youths from Stavropol State Medical University in Russia. All students are residents in the university hostel. A questionnaire was used as a means to obtain information from the 20 respondents. I also made use of a sphygmomanometer to obtain their blood pressure during the gaming period and an hour after they completed their game. While they were gaming, their heart rate and respiratory rate were also measured. A weighing scale was also used to measure their weight, and a stadiometer was used to measure their height.

Result and Discussion

Obesity and Video Gamers

The students' level of obesity was measured using their BMI, which is the weight of the individual in kilograms divided by the square of their height in meters (m^2). A normal BMI is between 18.5 and 24.9. A total of 75% of the participants had an increase in BMI ranging from 25.2 to 32.5. Only 15% of the participants had a BMI within the normal range.

This can be associated with the fact that, whilst playing games, gamers generally consume a significant amount of junk food, which has high caloric content and low nutritional value (Ebong, 2014). They also tend to have limited physical activity and to miss classes in order to keep up with their gaming habits. This leads to increased amount of fat stored in the body and intra-abdominal fat. This is a major concern, as obesity and excess weight increase the risk of hypertension, dyslipidemia, and insulin resistance (Weiss, 2004), as well as Type 2 Diabetes, which is the product of the aforementioned factors (Steinberger, 2003).

Stress and Video Gamers

The stress level was measured by taking the heart rate (HR), blood pressure (BP) and respiratory rate (RR) of the participants. These measurements were taken before they gamed, during the game, and after the game. Each was taken twice, and the average was calculated.

The study reported here measured an increase in HR, BP and RR in the 20 young men when they played a video game. This game became a stressor, which causes the stress hormone to signal the body to circulate more energy by the functioning of the cardiovascular system (Porter, 2019). The mean systolic BP for the entire group was considerably higher during play than before or after. HR was also significantly higher during play. In view of these results, other cardiovascular changes might be expected to occur during video-game playing. Although the changes reported here were minor, even minor cardiovascular alterations could potentially prove serious in individuals with cardiovascular disease. It is important to note that violent video games, which were played by 100% of the students, increase aggression, and stress increases aggression. Players also tend to argue and stay angry for a while after playing the games. We can say that the players were under chronic stress, according to (Dhabar F. S., 1997), because they played these games for several hours per day for weeks.

Cardiovascular Diseases

Though the adverse effect of video games in the heart of the circulatory system was not directly measured, the possibility of the students having a cardiovascular problem was related to their obesity, which 75% of the students had, and their stress level, which was present in 100% of the students.

Obesity is a risk factor for cardiovascular diseases, such as hypertension, atrial fibrillation and arteriosclerosis (Carbone, 2019). Obesity causes heart failure by changing the structural and functional composition of the heart. It increases the risk of atrial fibrillation and sudden cardiac death by altering the

myocardial structure. An increase in BMI leads to an increase in systolic blood pressure (Schmieder, 1993), which can be due to the activation of the sympathetic nervous system or the renin-angiotensin system (Ebong, 2014) (Rabbia F. S., 2003).

Stress can result in problems such as coronary heart disease and hypertension by decreasing an individual's heart rate variability and increasing heart rate, blood pressure, and respiration rate (Porter, 2019).

Conclusion

Video games have a small but definite effect on BMI, body composition, and stress levels. If not controlled, addiction can lead to challenges in the health of youths.

References

1. Aguilar Cordero, MJ, Ortegón Piñero, A., Mur Villar, N., Sánchez García, JC, García Verazaluze, JJ, García García, I., & Sánchez López, AM (2014). Physical activity programs to reduce overweight and obesity in children and adolescents: systematic review. *Hospital Nutrition*, 30 (4), 727-740.
2. Ayenigbara, I. O. (2018). Gaming Disorder and Effects of Gaming on Health: An Overview. *Journal of Addiction Medicine and Therapeutic Science*, 4(1), 1-3..
3. Carbone, S., Canada, J. M., Billingsley, H. E., Siddiqui, M. S., Elagizi, A., & Lavie, C. J. (2019). Obesity paradox in cardiovascular disease: where do we stand?. *Vascular Health and Risk Management*, 15, 89.
4. Dhabar F. S., M. B. (1997). Acute stress enhances while chronic stress suppresses cell-mediated immunity in vivo: a potential role for leukocyte trafficking. *Brain Behav. Immun.* 286-306.
5. Ebong, I. A., Goff Jr, D. C., Rodriguez, C. J., Chen, H., & Bertoni, A. G. (2014). Mechanisms of heart failure in obesity. *Obesity research & clinical practice*, 8(6), e540-e548..
6. Porter, A. M., & Goolkasian, P. (2019). Video games and stress: How stress appraisals and game content affect cardiovascular and emotion outcomes. *Frontiers in psychology*, 10, 967..
7. Rabbia, F., Silke, B., Conterno, A., Grosso, T., De Vito, B., Rabbone, I., ... & Veglio, F. (2003). Assessment of cardiac autonomic modulation during adolescent obesity. *Obesity research*, 11(4), 541-548..
8. Schmieder, R. E., & Messerli, F. H. (1993). Does obesity influence early target organ damage in hypertensive patients?. *Circulation*, 87(5), 1482-1488.
9. Steinberger, J., & Daniels, S. R. (2003). Obesity, insulin resistance, diabetes, and cardiovascular risk in children: an American Heart Association scientific statement from the Atherosclerosis, Hypertension, and Obesity in the Young Committee (Council on Cardiovascular Disease in the Young) and the Diabetes Committee (Council on Nutrition, Physical Activity, and Metabolism). *Circulation*, 107 (10), 1448-1453.
10. Weiss, R., Dziura, J., Burgert, T. S., Tamborlane, W. V., Taksali, S. E., Yockel, C. W., ... & Sherwin, R. S. (2004). Obesity and the metabolic syndrome in children and adolescents. *New England journal of medicine*, 350(23), 2362-2374.

The World Journal of Medical Education & Research (WJMER) is the online publication of the Doctors Academy Group of Educational Establishments. It aims to promote academia and research amongst all members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from all parts of the world. The journal intends to encourage the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting-edge technology and those who need to innovate within their resource constraints. It is our hope that this interaction will help develop medical knowledge & enhance the possibility of providing optimal clinical care in different settings all over the world.



WJMER

World Journal of Medical Education and Research

An Official Publication of the Education and Research Division of Doctors Academy



Special Issue