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Original Research Article

Video Gaming and its Experiences with Enhanced Skills and Improved Well Being in First Year M.B.B.S Students

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Abstract

Introduction: Learning and studying by new media technologies have taken shape for new academic experiences which, nowadays preferred by many college students. Video gaming can be categorized as first in the list. It can have impact on skill development and mental well-being also in the lives of medical students. Assessment of playing video games in freshers; first MBBS medical students, their experiences and its impact on wellbeing is the motive of our study.

Materials and Methods: Study was conducted in medical students at Dr DY Patil medical college Pimpri, Pune. Framed questionnaire was answered and analysed.

Results: Our study had video game genre, its description, examples with gender preferences, reason for playing, onset, hours of playing. On the other hand problem solving, logical thinking and hand eye coordination skills was good in male gamers while female gamers, found to be average and positive outlook of well-being in gamers.

Conclusion: Video games can be beneficial. Skills like problem solving, logical thinking and hand eye coordination was identified more in male gamers than female gamers. These skills can be useful professionally and personally as well. It can be enhanced, wellbeing seems to be improved. Gamers had a positive outlook with better wellness than non-gamers, but at the same time can have an influence on health maybe in long run.

Keywords: Gamers, Health, Medical Students; Technology; Wellness.

Introduction

Every year a large number of students gets enrolled in medical profession. They go through various adjustments in new environment with intensive medical curriculum, stressful exams, clinical cases, assignments and research projects. Therefore students like to get some relief from these stressors by spending their leisure time enjoying their hobbies, recreational activities they love, one of them is playing video games. [1]

Video games were originally played in arcades or on home computers and dedicated consoles. However, as the number of screens in most people‘s lives has eventually increased like smart phones, tablets, laptops so too has the number of devices on which it is possible to access some form of playful activity. Studies in college students shows that their learning preferences have been strongly shaped by new media technologies like video games, virtual reality environments, etc. [2] Even though video games play an important part in the lives of medical students, there are very few known studies conducted on them. When surveyed the students, physical and mental well-being was decreased, probably connected with emotional exhaustion and low sleep quality due to the profession chosen by them. Well-being can be defined in terms of happiness and overall life satisfaction. Well-being is distinct from the mere absence of distress and includes achieving a high QOL (quality of life) in multiple domains (physical health, mental health, emotional health, spiritual health, etc).[3,4] There are also few studies on development of skills in medical students who engage themselves in video gaming. In our study we found that gamers achieved certain skills such as problem solving, logical thinking and hand eye coordination skills which would be beneficial to them in their profession now or in future. In order to relax, students use various coping mechanisms. Video gaming can act as as a stress buster and motivates the gamer and gives pleasant feeling and encouragement, but constant playing can make an individual addicted and leads to detrimental health problems. [5,6] Recent researchers have found both positive and negative effects of video games. The present study seeks to

examine the well being and experiences of gaming with skills in the medical students.

Material and Methods:

Study was conducted at the university of Dr DY Patil medical college hospital & research centre, Pimpri, Pune after obtaining approval from the institutional ethics committee(IEC),period was from June to August 2016.Study and control groups were included(50 each).Male gamers(25)and female(25)gender wise. Informed consent was obtained. Detailed instructions were given. Questionnaire tool:14-item/statements questionnaire of well-being describing the experience of each last 2 weeks by Warwick-Edinburgh mental well-being Scale(WEMWBS)©NHS Health Scotland, University of Warwick and Edinburgh,2006.

Video Game History Questionnaire: Questions asked about previous use of particular types of video games, frequency and self-identified as a 'gamer'. While 'non-gamer' never ever played or either very rarely played.3 games were used. limbo; an artistic 2D black & white platform puzzle game, a nameless boy searching for his lost sister, a unique approach to game development in which creative decisions. Angry birds; a logic based video game. Piano tiles;a single-player mobile game based on hand-eye coordination. Results were taken and statistically matched with the control group(non-gamers) and also amongst gamers with gender difference.

Observation and Results:

Total of 100 medical students(50 gamers and 50 non-gamers aged between 18 and 21years (M=19.06, SD=0.97) participated in the study. None of the subjects had any past illness. Male students played games regularly with a median 2 hours/day more often than female students. Video game preferences with skills and effect on their well-being was analysed in percentage frequency (%).

Table 1.Reason for playing video games in both male and female gamers in percentage frequency (%).

Fig 1 showing reason of playing video games in males and female gamers. Mostly played as stressbuster (M;44%, F:32%), addiction (M;20%:F;0%), fun (M;16%:F; 36%), passing time(M;12%:F;24%) and excitement(M;8%:F;8%)

Table 2.Showed different video game genre and its description, examples & their choices in percentage frequency (%) of gamers. It summarizes the eight genres, all strategy, fantasy, action, adventure, FPS, RPG and online with the examples.

Table 3. Percentage (%) frequency of problem solving, logical thinking and hand eye coordination in male and female gamers (N=50). Categorized as poor, average and good. Male gamers as compared to female gamers were better in above skills. Although females did fairly well too. The difference between the groups was found to be statistically significant.

Table no 4: It gives the (%) frequency of well-being in gamers and non-gamers, where the majority had a positive effect after playing games.

Table 1: Reason for playing video games in both male and female gamers in percentage frequency (%)

Reason of playing	Males N=25	Females N=25
Addiction	5(20)	0(0)
Stress buster	11(44)	8(32)
Passing time	3(12)	6(24)
Fun	4(16)	9(36)
Excitement	2(8)	2(8)

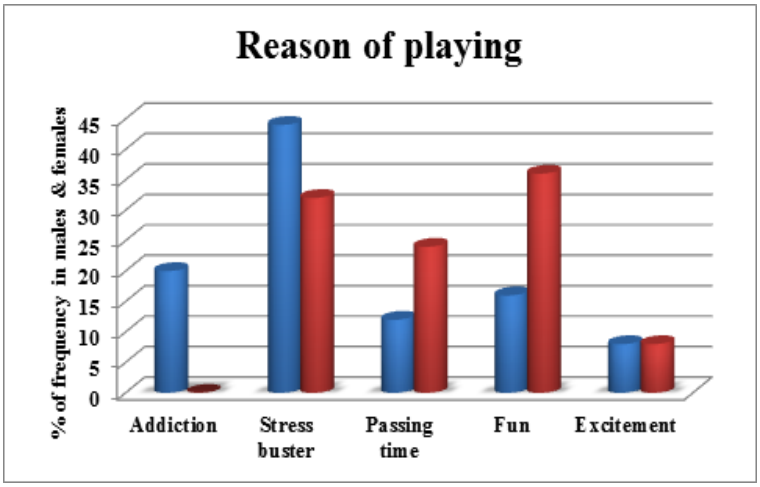

Figure 1: depicts reason of playing video games in males and female gamers

Table 2: Video game genre and its description, examples & percentage frequency of gamers

Genre	Description	Examples	% of Gamers
All	All genres among the study category	Any	20(10)
Fantasy	Games that let you assume a fantasy character	Final Fantasy, Legend of Zelda	36(18)
Strategy	Games that use strategic planning skills	Age of Empire	24(12)
Action	Game that simulates exciting or violent action	God of War	28(14)
FPS	Games where you shoot other characters	Quake, DukeNukem	16(8)
Online	Games that have element of chance.	Rummy, Solitaire	24(12)
RPG	Games that let you assume character(s)	Elder Scrolls V: Skyrim, Star Wars	24(12)
Adventure	Games where you go an adventure	Resident evil, tomb raider	24(12)

Table 3: Percentage (%) frequency of problem solving, logical thinking and hand eye coordination in male and female gamers (N=50)

Male Gamers	Skills	Poor/Slow	Average	Good
	Problem solving	4(16)	10(40)	11(44)
	Logical thinking	3(12)	10(40)	12(48)
	Hand eye coordination	2(8)	13(52)	10(40)
Female Gamers	Problem solving	6(24)	12(48)	7(28)
	Logical thinking	1(4)	13(52)	11(44)
	Hand eye coordination	2(8)	13(52)	10(40)

Table 4: (Percentage %) frequency of well – being in gamers and non-gamers

Statements	Gamers (N=50)	Non-Gamers (N=50)
I've been feeling optimistic about the future	84(42)	60(30)
I've been feeling useful	80(40)	4(2)
I've been feeling relaxed	84(42)	64(32)
I've been feeling interested in other people	70(35)	60(30)
I've had energy to spare	90(45)	40(20)
I've been dealing with problems well	80(40)	42(21)
I've been thinking clearly	84(42)	40(20)
I've been feeling good about myself	92(46)	30(15)
I've been feeling close to other people	72(36)	30(15)
I've been feeling confident	80(40)	30(15)
I've been able to make up my own mind about things	80(40)	34(17)
I've been feeling loved	76(38)	32(16)
I've been interested in new things	80(40)	40(20)
I've been feeling cheerful	80(40)	30(15)

Discussion:

Medical education is a very demanding field. Burden of information in medical profession and loads of competition makes the learner anxious, depressed and stressed. Stress can be best managed by regular exercise, meditation or other relaxation techniques, sports and playing video games. Medical students are learning new coping strategies to handle stress by engaging themselves in playing video games. [7] In past video games were considered in a category of childish and waste of time. Current scenario has changed. If we see the medicine profession, it has been regarded as a honourable career, but comes with sacrifice, competition, hard work, physical mental, emotional turmoil, which has an impact on health and well-being on medicos. The strongest predictor of well-being is the academic stress which the undergraduate students face. To relieve from stress, medicos often play video games in their spare time. Our study based on video gaming in medical students and well-being, had subgroups of 50 respondents who were self-identified as game players and provided game play data with their game choices. We found that gamers had a overall a positive and a bright outlook, enhanced wellness than the non-gamers.

There is more cynical and hedonistic orientation during medical school as well as significant elevations and increase in depression and anxiety. [8]

Most of the research focused on the detrimental effects of games. Few research has been conducted on good effects of video gaming in medical students.

Research says playing video games in moderation could have a potentially positive effect on young people‘s wellbeing. In our study(Table 4)shows wellness more in gamers. High levels of well-being is experienced when one is engaged in interesting activities and are satisfied and happy with their life. [9] Probable reason could be due to release of neurotransmitter such as dopamine. Playing video games has been shown to trigger dopamine release in the brain, which is closely associated with reward seeking, addiction and learning. Some studies have come to a conclusion that young people are already engaging in video games to regulate their emotions and forget their worries. More recently, another study examined the causal effect of playing games on virtual surgical endoscopy skills with a relatively more scientifically rigorous research design. [10] Our study also presented with a significant influence on problem solving skills, logical thinking and hand eye coordination(Table 3)by three different games; limbo, angry birds and piano tiles 2,very few gamers had poor hand eye coordination. One study, with world of warcraft players, was co-relational, making it impossible to discern whether playing the game improved problem solving or people with better skills in the first place were drawn toward this type of open-ended role-playing game. [11]

In United States, several studies showed the use of computer games as a tool in teaching learning. However, many studies argued that computer games pose disadvantages to student’s academic performance. Several studies also have documented negative influence between computer game uses. But the promise of video games can make a great stir in the field of education, maybe in future. Indeed, problem solving seems central to all genres of video games (including those with violent content).Most people think of video games as entertainment. It is interesting to note that the earliest applications of video games in health occurred because someone clever made an innovative interface so the typically sedentary games could be used to motivate patients and engage adolescent and adult patients in physical therapy and activity. Play is therefore often conceptualized as a means of stress management which has a key role in helping patients manage aversive or shameful aspects of their illness through playing video games. [12]

There is a growing interest about video games as a means to educate and train people. [13] In fact when it comes to education, medical curricula designers also should consider including video games as teaching tools, be it surgical or medical, so students will not be stressed because of their academic demand and competition rather they will have motivation and healthy well-being.

In U.S video gaming represents a multibillion-dollar industry and entertainment-related use is increasing among participants of all ages. Thus far, the entertainment and educational power of this medium for pro-social purposes has centered on younger participants, focusing on education, disease management for youth with particular common conditions (e.g. asthma, juvenile diabetes) and promotion of physical activity.[14] Video gaming has its own benefits even in health industry. It can be useful for doctors and patients too. Griffith argued that although there are educational, social and therapeutic benefits to video games play, but in excess leads to addiction, playing 24x7/week and in some cases to a gambling problem. [15]

Thus, technological gadgets and its applications like video gaming though necessary seem to have influenced our health and lifestyle in a negative direction due to overuse but keeping in mind the positive effects also. These problems and awareness needs to be addressed timely. [16] There has been various hypothesis proposed and tried to explain the relation between video gaming, learning, and wellbeing.

In a study of 143 adults who played one of three video games (Bejeweled 2, Bookworm Adventures or Peggle) for 20 minutes, it was found that mood, learning and thereby well being too, significantly improved regardless of the type of video game played. [17] It should be noted that none of the games used in this study would be considered violent games.

The perceived learning environment, when defined not only as the physical setting of the medical school, but also as its social norms, atmosphere, and characteristics, has implications for students ‘well-being and study success.[18] Wellbeing has two main components, subjective wellbeing and psychological wellbeing. Subjective wellbeing relates to "feeling good”, and incorporates the emotions of happiness, contentment, interest, engagement, confidence and affection. [19] Psychological wellbeing is about good psychological functioning. This includes self-acceptance, autonomy, environmental mastery, purpose in life, personal growth and having close supporting relationships. [20]

It is interesting to note that the earliest applications of video games in health occurred because someone clever made an innovative interface so that the typically sedentary games could be used to motivate patients to engage adolescent and adult patients in physical therapy and physical activity. The medical profession, for over 20 years, has voiced a number of concerns about video game playing. What effect do these games have on young players, patients? Does the type of game played matter? In future can video games be used in training, education and also as a therapy? Given that well-designed video games utilize principles known to effectively drive changes in the brain, there is a real reason for video games to

remain the subject of close scientific study. Play is therefore often conceptualized as a means of stress management. Thus, play as stress management probably has a key role in helping patients manage aversive or shameful aspects of their illness through playing video games.[12] While medical students should pose good mental and physical health for the development and maintenance of qualities of medical professionalism and their well-being as the precursor to physician wellbeing, represents a critical aspect of medical training. In fact medical curricula designers also should consider including video games as teaching tools, be it surgical or medical so that health care system can be delivered safely and effectively and medical students will not be stressed out because of their academic demand and competition rather they will have more motivation and healthy well-being.

Strength of this study is that although our sample is representative of medical students. Here our observations can help to assess the role of video gaming related to well being and their experiences alone making it a positive impact on medical students. On the other hand, this study has limitations. Indulging for long hours may have a negative impact on health and wellbeing. Data may not be have been sufficient enough to allow the final conclusions. Therefore, cohort studies are also needed in future to further understand the long term effects of video gaming. Furthermore studies need to be conducted in a larger and other professionals too,and in still much younger age groups.

Conclusion:

The present study concluded that there is a difference in well being in gamers and non-gamers. Whole process of gaming is based on individual attitudes of the player, experiences, skills and memories. Many studies opined on negative effects of games. Basically, it allows the medical students to learn and apply theoretical and practical knowledge, skills in a clinical setting. Hence, more games should be tailored for medical students. Thus, video games can be the next generation tools for mental training, cognitive and skill development with fun too.

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References

1. Ali A, Fahad A, Abdullah N, Mohammed B, Abdulrahman A, Mohammed A. Effect of video games on medical students' academic performance: A two-institutions, cross-sectional study. Int J Sci & Eng Res. 2017; 8(9):653-658.
2. Frederick K, Craig G, Ananda S and Michael F. Medical student attitudes toward video games and related new media technologies in medical education. BMC Med educ. 2010;10 (50):1-11.
3. Leplege A, Hunt S. The problem of quality of life in medicine. JAMA. 1987; 278:47-50.
4. Spilker B. Quality of Life and Pharmacoeconomics in Clinical Trials.;2nd ed.1-9. New York, NY: (Raven Press).
5. Daniel P and Valéria de Q. Influence of burnout and sleep difficulties on the quality of life among medical students. Pagnin and de Queiroz Springer Plus. 2015;4:676.1-7.
6. A primer on medical student well-being. American Medical Student Association/Foundation. 2001;1-15.[Last cited on 2022 Dec].Available from https://www.uc.edu/cont ent/dam/uc/University%20Health%20Services/docs
7. Mona S. Perception of stress and coping strategies by medical students at King Saud University. Riyadh. Saudi A J Ta Uni Med Sci. 2014; 9(1):30–35.
8. Wolf TM. Stress, coping and health: enhancing well-being during medical school. Med Educ 1994;28(1):8-17.
9. Diener E. Subjective well-being. Psychological bulletin.1984;95:542-575.
10. Schlickum M, Hedman L, Enochsson L, Kjellin A & Fella¨nder-Tsai L. Systematic video game training in surgical novices improves performance in virtual reality endoscopic surgical simulators: A prospective randomized study. World J Sur. 2009; 33:2360-2367.
11. Steinkuehler C & Duncan, S. Scientific habits of mind in virtual worlds. J Sci Edu Tech 2008; 17:530-543.
12. Pamela M. Kato. Video games in health care: Closing the gap. Review general psychology. Am Psychol Assoc. 2010;14(2):113-121.
13. Durkin K. Video games and young people with developmental disorders. Rev Gen Psychol. 2010; 14:122-140.
14. Entertainment Software Association. Game Player Data. www.theesa.com/facts/ gameplayer.asp [Last cited on 2021 November]
15. Griffiths MD. Video game addiction: further thoughts and observations. Int J Ment Health Addic. 2008;6:182-185.
16. Subha K, Sushil N, Anitha A. Influence of technological gadgets on health and lifestyle of medico. Nat J Physiol, Pharm Pharmacol. 2020; 10(3):201-205.
17. Russoniello, C.V., O'Brien, K., & Parks, J.M. The effectiveness of casual video games in improving mood and decreasing stress. J Cybth and Rehab. 2009; 2:53-66.

18. Huppert F.A. Psychological Well-being: Evidence Regarding its Causes and Consequences. Applied Psychology: Health and Well-Being. 2009; 1:137-164.
19. Ryff D & Singer B. Psychological well-being and ill-being: do they have distinct or mirrored biological correlates? Psychotherapy & Psychosomatics. 2006; 75:85-95.
20. Kwan Min Lee & Wei Peng. What Do We Know About Social and Psychological Effects of Computer Games? A Comprehensive Review of the Current Literature. Review of Computer Game Studies. 2006;1-60.