

Relationship between Video Games Usage and Mental Health: A Cross-sectional Study in Population of Jammu and Kashmir

Dr Marya Majid Shah¹, Dr Iqra Azeem^{*2}, Dr Mursleen Majid Shah³, Dr Linah Maryam⁴

¹Junior Resident Ascoms

²Junior Resident GMC Kathua.

³General Surgery Resident Ascoms

⁴Anesthesia Resident ASCOMS

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Abstract

Introduction- Video game usage is widespread, and it may come with certain precursors as well as consequences. Previous studies have explored the impact of video games on mental health, with mixed results. The focus should not only be on the potential harms but also understanding the potential benefits and therapeutic opportunities of video games. So this study was planned to identify correlation between video game usage and mental health.

Material and Methods- The present study was an observational cross-sectional study done on the Jammu and Kashmir residents playing video games for a total of 4 weeks. This survey enrolled 152 gamers who were randomly selected from various online gaming groups. Pre-structured questionnaire was used to collect demographic and gaming data. Google forms were used for data collection. On various gaming forums, a link was posted that redirected participants to an integrated survey platform flashing an online self-administered questionnaire. All the statistical analyses were carried out using SPSS version 20.0.

Result- The study showed male dominance with most of the participants from the age group of 18-24years. In present study, 67.1% participants used video games to deal with stress or emotional challenges and 58.6% users perceived gaming as a stress relieving activity. Our study exhibited a predominantly positive emotional state prior to engaging with the games, with a significant majority feeling excited and happy. 59.2% responders felt a sense of happiness after a gaming session. Overall mental well-being was self assessed by the participants on the scale of 1 to 10 and a uniform distribution of participants was seen on the scores of 7, 8, 9 and 10. Majority of participants picked entertainment followed by stress relief as the main reason that motivates them to play games.

Conclusion- The current study revealed that potentially video gaming to be associated with positive effects on mental well being and social relationships. Playing video games does not cause psychological problems, but playing for long hours and playing specific genres could lead to the development of gaming disorder. Public health authorities must monitor excessive use of video games among individuals.

Keywords- Video games, mental health, gamers, participants, gaming, stress etc.

Introduction-

In recent years, the world has witnessed unprecedented growth in the popularity of video games. A video game is defined as “a game which we play thanks to an audiovisual apparatus and which can be based on a story”[1] The rise of digital technology along with a global pandemic that forced everyone into isolation, video games has become an integral part of modern entertainment. As young people in other affluent nations, adolescents in India are likely to have access to and utilize electronic devices. The small city of Jammu, located in North India, is no exception. The city’s youth, in particular, have shown a strong affinity for video games, with many spending several hours each day playing games on their mobile phones, personal computers, or gaming consoles. Video game usage is widespread, and it may come with certain precursors as well as consequences. Previous studies have explored the impact of video games on mental health, with mixed results. Some studies have suggested that excessive gaming can lead to negative consequences such as addiction, social isolation, and decreased attention

span.[2] Playing video games as a diversion can lead to a reduction in academic performance, leading to anxiety and depression among students. On the other hand, other studies have found that certain types of video games can have positive effects on mental health, such as reducing stress and anxiety. Video gaming is known to have some benefits such as improving focus, multitasking, and working memory, but it may also come with costs when it is used heavily. There is mixed evidence on the psychological effects of video games. While excessive use can be harmful, moderate use can have emotional, psychological and social benefits, with games successfully being used in treating anxiety and depression. A study found that action video games improved cognitive function and reduced stress levels in older adults. Despite these findings, there is still a lack of research on the impact of video games on mental health in small cities in India. More data are required to understand how and for whom these benefits occur. The city of Jammu is exciting due to its unique cultural context and demographics. Jammu has a predominantly rural population with limited access to entertainment options, making video games a popular form of leisure activity. Researchers, politicians and public commentators typically associate video games with negative outcomes, such as violence and addictiveness. Increasingly, the impact of violent videogames is being considered from a more nuanced perspective with an understanding that publication bias and the emphasis on the use of laboratory measures of aggression may exaggerate relationships between video game violence and aggression, and not accurately predict real life behavior.[3] Video game addiction has been described as a gaming disorder and the inclusion of gaming disorder under mental health conditions in International Classification of Diseases (ICD) -11[4] by World Health Organization (WHO) has made it essential for the mental health clinicians to gain a balanced understanding of their patients' gaming habits. Overall, meta-analyses showed that playing video games in and of it does not involve negative consequences.[5] The focus should not only be on the potential harms but also understanding the potential benefits and therapeutic opportunities of video games.[6] So this study was planned to identify correlation between video game genre, player demographics and mental wellbeing. Further our study also aimed to examine the types of video games being played and the frequency of playing to identify any patterns or correlations with mental health outcomes.

Material and method-

The present study was an observational cross-sectional study done on the Jammu and Kashmir residents playing video games for a total of 4 weeks. The inclusion criteria involved people of any age and sex, who had some gaming background. A convenience random sampling technique was used. People who were not willing to participate, had intellectual disability and were not residents of Jammu and Kashmir were excluded from the study. Informed consent was taken before filling out the form and since it's a survey study ethical committee approval wasn't required. Pre-structured questionnaire was used to collect demographic and gaming data along with the other multiple factors related to the gaming habits of the participants. Google forms were used for data collection. On various gaming forums, a link was posted that redirected the participants to an integrated survey platform flashing an online questionnaire. Google form was filled by 153 people but due to incomplete data given by one gamer, the study included only 152 participants. Socio demographic data included age, sex, educational qualification and employment status of the participants. Gaming data included the type of games they play, motivation to play games, duration of playing video games, hours per week spent in playing video games, multiplayer online gaming, gaming with friends or alone, feeling of sense of community and connection with other gamers, frequency to communicate with other gamers, positive and negative changes in mood or emotions based on gaming habit, gaming as stress relieving activity, stress or anxiousness while playing, late night gaming sessions, influence of gaming on sleep quality, feeling of gaming habits to be addictive, feeling before and after a gaming session, and mental well being on the scale of 1 to 10. These collected data basically included socio-demographics, sociability among gamers, video gaming habits, mental health status, sleeping habits, and perceptions of video game-related side effects. Data were summarized using numbers and percentages. All the statistical analyses were carried out using SPSS version 20

Result-

The present study was conducted on the video gamers of any age and sex. According to the age of the participants, they were grouped into 4 age groups. Most of the participants belonged to the age group of 18-24years with 84(55.3%) subjects followed by 25-34years, <18years and 35-44years with 49(32.2%), 12(7.9%) and 7(4.6%) cases respectively. As shown in table 1, males made about 100(65.8%) of the gamers and women were 52(34.2%). Our study also viewed at the level of education among the gamers, a little more than 1/3rd i.e. 57(35.5%) of the users had bachelor's degree, followed by 27(17.8%) being high school graduate with diploma. Professional degree,

high school without diploma, masters degree, some college credit without degree, doctorate degree, trade/technical/vocational training holders were 23(15.1%),13(8.6%), 12(7.9%), 7(4.6%), 6(3.9%), and 4(2.6%) respectively in our study, whereas 3(2%) did not even complete their schooling. Reflecting on the status of employment, 68(44.7%) subjects were employed and over one-third i.e. 54(35.5%) of the participants were unemployed. 17(11.2%) subjects were in process of looking for employment and 13(8.6%) preferred not to reveal their employment status.

Table 1- Distribution of participants based on the demographic variables.

Demographic variable		n(%)
Age	Under 18years	12(7.9%)
	18-24years	84(55.3%)
	25-34years	49(32.2%)
	35-44years	7(4.6%)
Sex	Male	100(65.8%)
	Female	52(34.2%)
Educational Level	Doctorate degree	6(3.9%)
	Masters degree	12(7.9%)
	Bachelors degree	57(35.5%)
	Professional degree	23(15.1%)
	Trade/technical/vocational training	4(2.6%)
	High school graduate with diploma	27(17.8%)
	High school without diploma	13(8.6%)
	Some college credit without degree	7(4.6%)
	Schooling not completed	3(2%)
Employment Status	Employed	68(44.7%)
	In process of looking for employment	17(11.2%)
	Unemployed	54(35.5%)
	Prefer not to say	13(8.6%)

When it comes to spending time playing video games, as depicted in table 2, the response was extremely mixed. Majority of the responders i.e. 64(42.1%) showed that they were playing video games since more than ten years and the rest 34(22.4%), 23(15.1%), 17(11.2%) and 14(9.2%) participants were into the gaming from last 1-2years, 3-4years, 5-6years and 7-8years respectively. Most users, i.e. 46(30.3%) on their self-assessment, believed that they spend on an average one hour per week on playing video games and only 1(0.7%) participant each believed it to be 60+hours and 40-50hours per week. This group was of hardcore enthusiasts who devoted significant portions of their time to gaming. 30(19.7%), 29(19.1%), 24(15.8%), 11(7.2%), 8(5.3%) and 2(1.3%) users devoted 4-10hours, 1-4hours, 10-20hours, 20-30hours, 30-40hours and 50-60hours in playing games. These players dedicated more time to gaming, possibly engaging in longer sessions. Clearly, when it comes to multiplayer gaming, majority of the responders felt their moods to be on higher side as 102(67.1%) preferred multiplayer gaming over playing alone which included 50(32.9%). Playing with friends during gaming provides social interaction and a better bond with friends. However, the data showed that 67(44.1%) preferred to play alone compared to bare 21(13.8%) that preferred to play with friends. 52(34.2%) preferred to play alone as well as with friends. 2(1.3%) preferred to play with others and 10(6.6%) preferred to play with others as well as alone. In our study, 102(67.1%) participants used video games to deal with stress or emotional challenges. 50(32.9%) did not used it as coping mechanism.

Table 2- Distribution of participants based on their responses to the questionnaire.

Variable		n(%)
Duration of playing video games	1-2years	34(22.4%)
	3-4years	23(15.1%)
	5-6years	17(11.2%)
	7-8years	14(9.2%)
	8-9years	0(0%)

Hours per week spent in playing video games	10+years	64(42.1%)
	1hour	46(30.3%)
	1-4hours	29(19.1%)
	4-10hours	30(19.7%)
	10-20hours	24(15.8%)
	20-30hours	11(7.2%)
	30-40hours	8(5.3%)
	40-50hours	1(0.7%)
	50-60hours	2(1.3%)
	60+hours	1(0.7%)
Multiplayer online gaming	Yes	102(67.1%)
	No	50(32.9%)
Playing games with friends or alone	I play alone	67(44.1%)
	I play with friends	21(13.8%)
	I play with friends as well as alone	52(34.2%)
	I play with others	2(1.3%)
	I play with others as well as alone	10(6.6%)
Used a video game to cope with stress and emotional challenge	Yes	102(67.1%)
	No	50(32.9%)

As shown by figure 1, a significant majority of users felt excited i.e. 84(55.3%) and happy i.e. 56(36.8%) prior to engaging with the games. 22(14.5%) felt relieved and 16(10.5%) users felt safe before playing games. Conversely, negative emotions were relatively low, with only 25(16.4%) reporting feelings of stress and 8(5.3%) experienced depression. A small percentage i.e. 3(2%) and 5(3.3%) expressed being worried and nervous respectively. As far as feelings after a gaming session are concerned, 90(59.2%) responders felt a sense of happiness after a gaming session. About 74(48.7%), 31(20.4%) and 14(9.2%) responders felt relieved, excited and safe respectively after a gaming session. Feeling of being stressed, depressed, worried and nervous was shown by 11(7.2%), 5(3.3%), 2(1.3%) and 1(0.7%) users respectively after a gaming session.

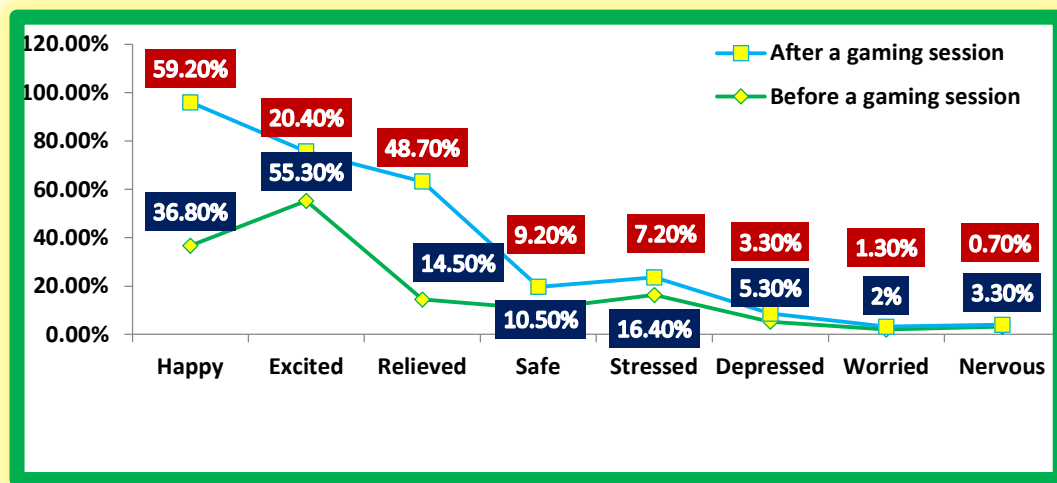


Figure 1- Comparison of feeling of the participants before and after a gaming session.

As clearly visible from figure 2, 68(44.7%) gamers felt sense of community and connection with other gamers, while 56(36.8%) did not had such feeling and 28(18.4%) were uncertain about their answer. 89(58.6%) subjects perceived gaming as a stress relieving activity, whereas 27(17.8%) answered no and 36(23.7%) were unsure about it. 72(47.4%) users felt stressed or anxious while playing videos games and 50(32.9%) subjects did not had such feeling and 30(19.7%) were doubtful about their feeling. 60(39.5%) users believed that the gaming habits were addictive and 59(38.8%) believed it to influence their sleep quality. 67(44.1%) and 75(49.3%) did not find their

gaming habit to be addictive and to influence their sleep quality respectively. However the rest 25(16.4%) were unsure about their habit being addictive and 18(11.8%) were uncertain about the influence of gaming habits on their sleep quality.

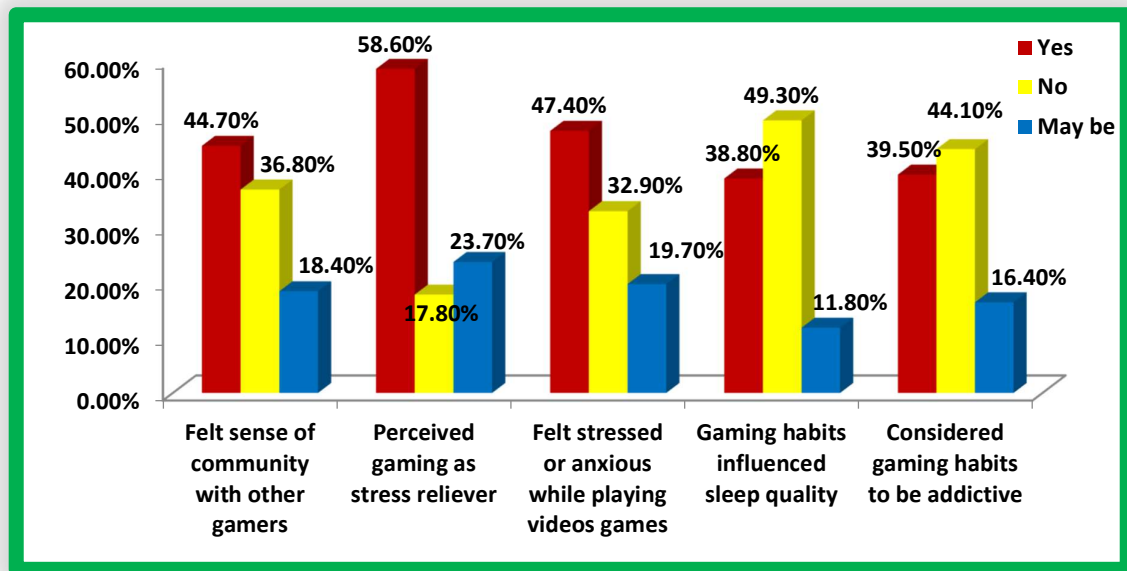


Figure 2– Distribution of participants and comparison of their responses based on different questions.

Figure 3 depicts that 85(55.9%) users noticed positive changes in mood or emotions based on their gaming habits. 27(17.8%) did not notice such changes and 40(26.3%) were unsure about the positive changes. However maximum i.e. 83(54.6%) of the responders did not notice any negative changes. 41(27%) subjects felt negative changes and the rest 28(18.4%) cases were doubtful regarding any negative changes in mood or emotions based on their gaming habits.

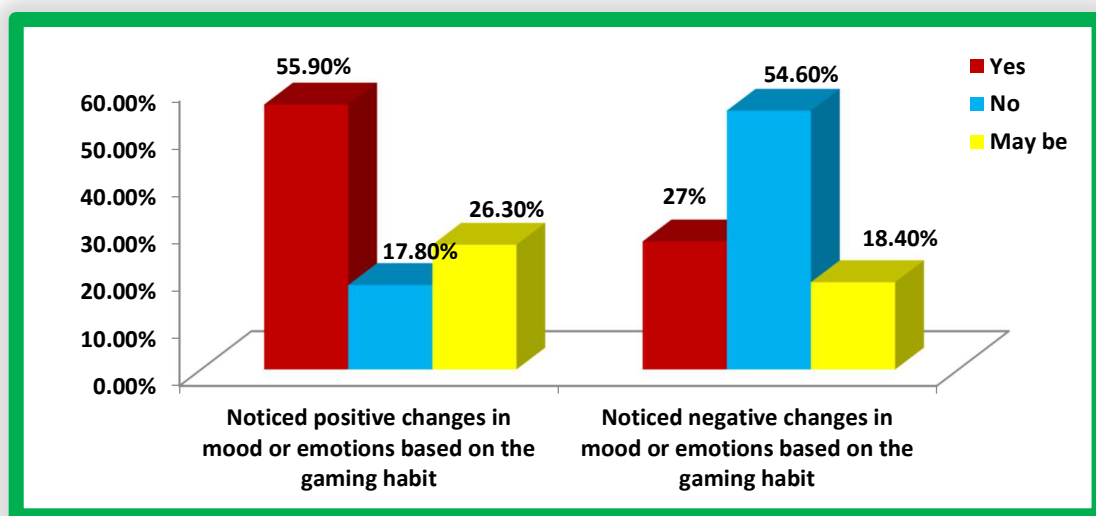


Figure 3- Comparison of positive and negative changes in mood or emotions of the participants based on their gaming habits.

Maximum of the gamers i.e. 38(25%) communicated occasionally with other gamers followed by 26(17.1%) users each who rarely or never communicated with others gamers as seen from figure 4. The rest 25(16.4%), 22(14.5%)

and 15(9.9%) participants communicated frequently, very rarely and very frequently with the other gamers respectively. Majority of the respondents i.e. 42(27.6%) of our study were occasionally engaged in late night gaming sessions followed by 26(17.1%) users were very frequently engaged. 22(14.5%) gamers never got engaged in late night sessions followed by 21(13.8%) gamers each who were frequently or rarely engaged and the rest 20(13.2%) users were very rarely engaged in late night sessions.

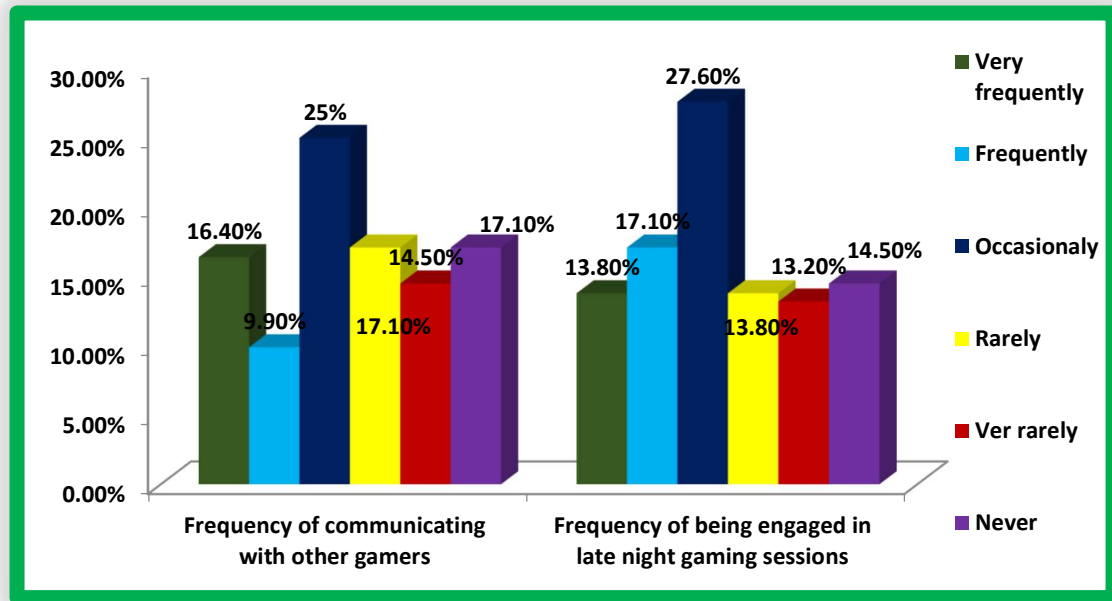


Figure 4- Distribution of participants based on their responses to different questions.

Figure 5 depicts the type of games played by the gamers. Majority of the users i.e. 92(60.1%) played shooters followed by 79(51.6%), 53(34.6%), 49(32%), 42(27.5%), 35(22.9%), and 30(19.6%) gamers who played action-adventure, strategy, racing, sports, puzzlers and simulation games respectively. Survival horror and board game/card game were played by 28(18.3%) users each. 19(12.4%), 13(8.5%) and 11(7.2%) gamers played MMORPG, sandbox and trivia games respectively. Party games and typing games were played by 8(5.2%) users each. The rest 2(1.3%) and 1(0.7%) gamers played RPG and other type of games respectively.

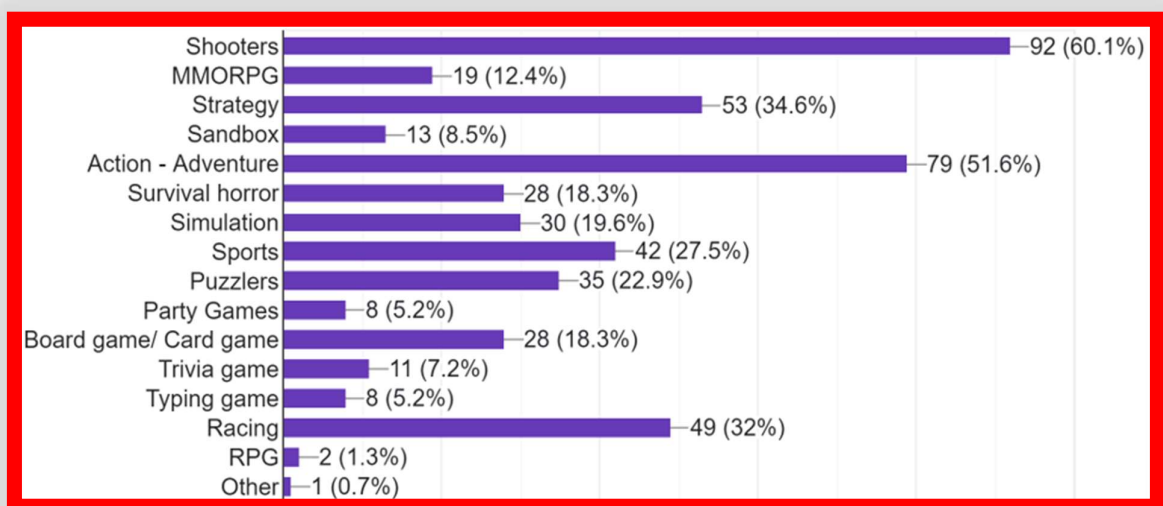


Figure 5- Distribution of subjects based on the types of games they play.

Figure 6 clearly depicts that maximum of the participants i.e. 127(83%) play games for their entertainment followed by 92(60.1%), 44(28.8%), 34(22.2%), 30(19.6%) and 2(1.3%) gamers who played for stress relief, achievement in a game, mastery of the game, social interaction and for exploring beautiful games respectively. 1(0.7%) participant each play games for exploring characters and philosophical questions, being engaged during spare time, for many more reasons and they just like to play them or consider games as a work of art.

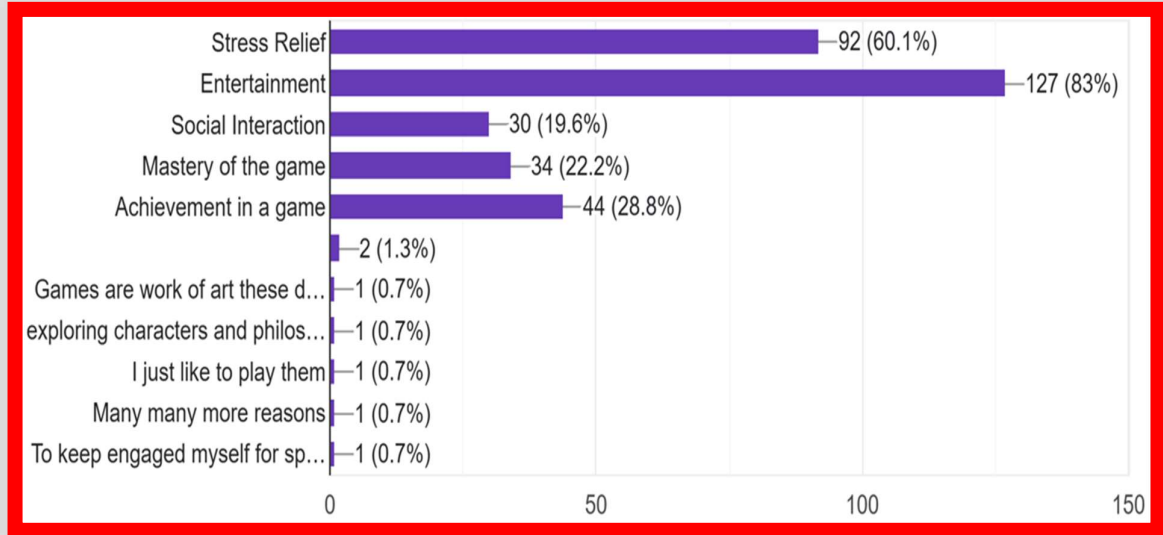


Figure 6- Distribution of participants based on their motivation to play games.

In current study participants rated their mental well being on the scale from 1 to 10 and as clearly seen from figure 7, majority of the users i.e. 31(20.4%) rated themselves with the score 8 followed by 24(15.8%), 23(15.1%) and 21(13.8%) gamers with score 6, 9 and 7 respectively. Score 5 and 10 each was rated by 18(11.8%) users each. 7(4.6%) gamers rated 1 and 6(3.9%) gamers rated themselves with score 3 of the mental well being. Score 2 and 4 each was rated by 2(1.3%) gamers each.

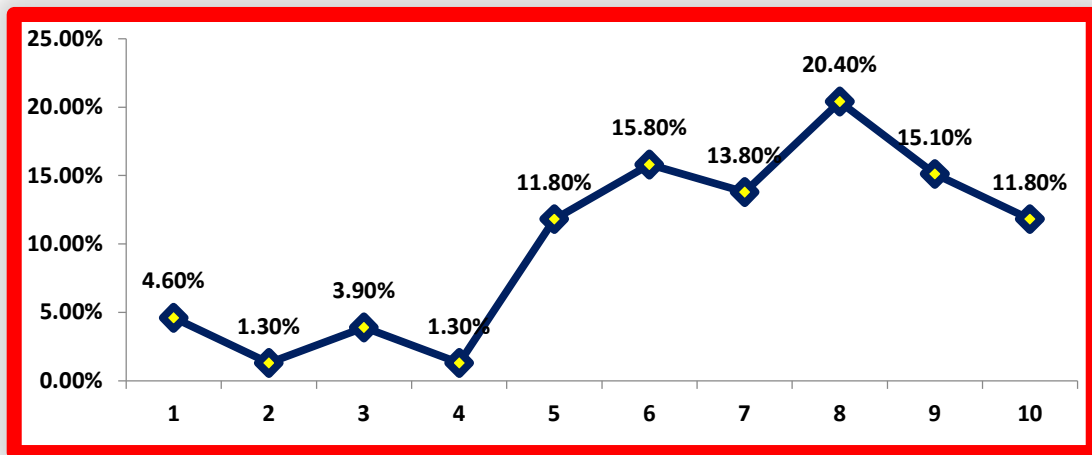


Figure 7- Distribution of participants based on the mental well being reported by them on the scale of 1 to 10

Discussion-

Video games usage is common nowadays and since 1980, video games have existed. Video games have developed to the point that they can now be played on consoles and mobile devices which may have both positive and negative effects. So, this survey was done through a self-administered online questionnaire to see relationship

between the extents of video games impact on mental well-being of the individuals. Most of the participants of our study belonged to the age group of 18-24years. Males made about 65.8% of the gamers, suggesting video gaming to be more popular activity among men than women. Study by Alrahili N et al.,[7] is in agreement with our study as their study also showed male dominance although mainly gamers were of age from 12-16years. Most users, i.e. 30.3% on their self-assessment, believed that they spend on an average one hour per week and others spent more than 1 hour in gaming, possibly they were engaged in longer sessions. However our this finding is in contrast to an American study[8] and to the study by Alrahili N et al.,[7] as they reported the gamers to spend minimum of ≥ 5 hours/day in gaming. The data of our study revealed that 39.5% gamers felt their gaming habits to be addictive with 17.1% users being very frequently engaged in late night gaming sessions effecting sleep quality of 38.8% gamers. This finding of our study is much higher than the study by Saquib et al.,[9] as in their study, only 16% were addicted to video gaming. Study by Anantha Eashwar VM et al.,[10] and Kemp C et al.,[11] also documented poor sleep quality among participants with higher prevalence of video gaming. Other studies conducted by Rohilla S et al., (22.8%)[12] and Singh S et al. (3.6%),[13] also found much lower prevalence of gaming addiction. These differences in prevalence could be due to the individual preference differences and addictive nature of the type of various video games. Our study showed considerable variation in participants' communication with other gamers. 67.1% subjects of our study preferred multiplayer gaming. This majority indicates that most players enjoyed interacting with others in online games, cooperative modes, or competitive matches. Study by Kowert et al.,[14] and Mazurek et al.,[15] revealed that video games provide a platform for gamers to connect socially. Playing with friends during gaming provides social interaction and a better bond with friends. However, our data showed that 44.1% preferred to play alone. Thus most participants enjoyed solo gaming experiences, whether for relaxation, immersion, or personal enjoyment. This finding is also supported by Kowert et al.,[16] as they found video gamers to have no or less real-life friends and another study by Lemmens et al.,[17] also revealed loneliness among gamers. In our study a significant proportion of participants i.e. 27% reported negative changes in their mood or emotions as a result of their gaming habits and 47.4% users felt stressed or anxious while playing videos games. A review article[18] is in agreement with our study as it also showed relation of video gaming with increased aggression, depression and decreased social behavior. Study by Milani et al.,[19] revealed stress, maladaptive coping and psychosomatic problems as potential consequences of video games. The dynamics of different genres of video games must be understood as the addictive character of specific genres may have a role in video game addiction. So the responders were asked to identify the type of games they played most, they showed interest in shooter games like overwatch, fortnite, and counter strike. This suggests that gamers prefer playing online multiplayer with other gamers. Such games are more competitive compared to rest of the games in the questionnaire. Single-player action-adventure games with less competitive edge and the games requiring problem-solving capabilities were also popular among the users. In study by Scharkow et al.,[20] also younger gamers preferred action games and older players were into games of skills. Study by Elliott L et al.,[21] and Anantha Eashwar VM et al.,[10] also found action-adventure games, to be associated with video game addiction. Stress or emotional challenges can be difficult to deal with and in our study, 67.1% participants used video games to deal with stress or emotional challenges. Participants likely turned to gaming to manage their emotions, find distraction, or seek relief. Gamers themselves rated their overall mental well-being on a scale of 1 to 10 and a uniform distribution was seen on the scores of 7, 8, 9 and 10. 58.6% subjects perceived gaming as a stress relieving activity and a low percentage of "no" responses suggest that a very small proportion of participants experienced negative or no emotional changes. This reinforces the overall positive trend observed in the data. Study by Primack et al.,[22] is in harmony with our findings as their study emphasized on the benefits of playing games. The participants in present study exhibited a predominantly positive emotional state, prior to engaging with the games, with a significant majority feeling excited and happy. A study on video gamers also highlighted certain potential benefits from using video games.[23] Other positive emotions in our study, and a small percentage of negative emotions contributed to a relaxed and comfortable atmosphere for the participants as they prepared to engage with the games suggesting a generally optimistic outlook. This positive emotional landscape likely contributed to a more enjoyable and fulfilling gaming experience, enhancing engagement and potentially influencing the overall outcomes of the study. Study by Anantha Eashwar VM et al.,[10] documented less incidence of moderate to severe depression among gamers. Studies by Desai V et al.,[24] Kowal M et al.,[25] and Russoniello CV et al.,[26] are also in harmony with our study as they revealed lesser depression and improved cognitive skills in depressed patients who were into video gaming. Another study also pointed out enhanced mood and less stress among people

who play video games.[26] Video gaming is indeed a dopamine inducing activity that releases a feeling of happiness as reconfirmed by 59.2% responders of our study as they felt a sense of happiness after a gaming session. A clear majority of 55.9% reported positive changes in their mood or emotions after gaming. This suggests that gaming is having a tangible impact on participants' emotional well-being. Our findings are supported by Granic et al.,[27] as their study suggested therapeutic use of the video games. Majority of the participants of our study picked entertainment and stress relief as the main reason for their motivation to play games. Stress relief and entertainment in specific serves as a good indicator that video games play a role in helping with the mental health of a person. Study by Colder Carras et al.,[28] is in concordance with our study as they also observed positive effects and benefits of video gaming. Notably, a dominant theme emerged from these reflections, indicating that a significant proportion of participants utilized gaming as a stress-relieving mechanism, with many reporting that it provided a healthy outlet for managing anxiety and tension. However, there is equal possibility that people who tend to struggle forming real life social interaction turn to recreational activities like video games. Therefore, further studies focused on relationship between mental health and video game usage needs to be done.

Conclusion-

The current study advances the understanding of gaming by identifying the precise relationships between video gaming and psychological functioning. According to the study, younger men who consistently play video games for extended periods of time are more prone to develop a video game addiction. In present study, video gaming was potentially found to be associated with positive affect and social relationships, but it has also been linked to a tendency for isolation. Our study revealed the preferred game genres of the gamers and their reasons for gaming which advanced the knowledge of distinct and varied relationships between video gaming and mental health. Study showed that playing video games does not directly cause psychological issues, playing certain genres and for extended periods of time can cause gaming disorders, which can result in anxiety, unhealthy coping mechanisms, and disturbed sleep, all of which can cause psychological issues. To prevent excessive video gaming, public health officials should set up educational initiatives and keep an eye on people's video gaming habits. It may be possible to carry out further community-based research on video game addiction, and long-term studies to find any additional addictions brought on by playing video games.

Conflict of interest: None

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