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Original Article

Psychiatry/Mental Health Section

E-Sports, Anxiety, Aggression and Psychological Well-being: A Cross-sectional Study

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ABSTRACT

Introduction: Electronic sports or e-sports is also known as online gaming, professional gaming, computer gaming. Nowadays E-sports has gained a lot of popularity in the area of research. The people actively participate in it and most people even consider it as their career option. Although these sports has both positive and negative effects on the life of an individual.

Aim: To investigate the relationship between E-sports, anxiety, aggression, and psychological well-being among adolescents and young males and females.

Materials and Methods: This cross-sectional study was conducted in Delhi and National Capital Region (Noida, Gurugram, Faridabad), from November 2020 to April 2021, included 102 participants within the age range of 16-27 years. The quantitative research method was adopted using descriptive survey method. The following questionnaire were used i.e. Problematic Online Gaming Questionnaire Short-Form (POGQ-SF) Hamilton Anxiety Scale (HAM-A); Buss-Perry Aggression Questionnaire (BPAQ) and Psychological Well-being scale-Short Form (PWB-SF). All these questionnaires were free to use. Pearson's correlation method was used to assess the correlation between E-sports, anxiety, aggression, and psychological well-being and the p-value of 0.01 was considered as statistically significant.

Results: There was no significant relationship found between eSports and anxiety among participants (r-value=0.112, p-value>0.01). There was a significant positive correlation between eSports and aggression (r-value=0.377; p-value<0.01). Which indicated that participants with high level of problematic gaming had high level of aggression. Also, a significant negative correlation was found between eSports and psychological well-being (r-value=-0.259; p-value<0.01).

Conclusion: From the present study, it can be concluded that participants who scored higher in problematic E-sports had higher level of aggression and poorer psychological well-being.

Keywords: Electronic sports, Problematic gaming, Professional gaming

INTRODUCTION

E-sports, also known as 'Competitive gaming', is an increasing type of team play made possible by interactive systems, such as video games. In the past few years, the industry is in demand has taken place and is earning revenue in the millions. Viewing the demand for the E-sports, the players have also risen in the last few years [1] and this has raised revenues for players as well by winning from the competition, sponsorships, and earned income from their live broadcasts (online streaming) [2]. People indulging in online games could be for enormous reasons, including overcoming challenges, reducing stress, socializing with other people, and entertainment [3]. As per Wagner (2006) E-sports has been described as "a field of sports activity in which individuals develop and train psychological and physical skills in the use of information technologies" [4]. Although the definition cannot be suitable for all the other aspects of E-sports. This has been corrected by recent definition of defining E-sports as a type of sports where virtual networks promote the key aspects of the sport; the input of players, teams and the performance of the E-sports system are facilitated by human and computer interacting components. Finally, computer games are perceived as competitive and organic approach to gaming.

As discussed the popularity of E-sports has grown in recent years and same is been noticed in India, as in September last year India won bronze in E-sports last year [4]. This exemplify the increasing rate of e sports and has immense potential in India as well. The game designers were 25 in 2010, and that figure has increased up to 250 till date, with more each year entering this list [5]. Huge companies such as PayTm, Alibaba, Tencent and even Nazara have heavily invested in the Indian gaming industry, which has become one of the five best mobile gaming countries [5].

With popularity comes challenges and the same is being faced by India's E-sports sector. The Indian gaming community is not very developed right now. There is really no other major publisher with a local presence in India, except Tencent, and that is just what it lacks [6]. E-sports will need to have educational institutions, much like every other sport, to support aspiring gamers improve their talents [6]. There is currently no specific E-sports academic institutions in India, but it is expected that some institution will be established in the coming years. Even though India's video game industry is somewhere around four years old, there is a lot to reflect upon the sports industry, relative to countries such as China and North America [6]. While 5G is in the process, as the high-speed internet is the E-sports sector's cornerstone, the process needs to be increased. Mentioned above studies state that E-sports have enormous challenges with respect to its demands and maintaining their place in the technology field. With the challenges come different issues related to mental and physical both. As per research, it has been reflected that computer games are criticized for all manner of negative mental health consequences. Few research has suggested that gaming leads to people feeling nervous, frustrated, irritated, or even aggressive [7]. Nevertheless, adaptive cognitive patterns, depressive thoughts and behaviours, low self-esteem, depression, and poor academic success are often correlated with inappropriate and intense video gaming [7].

There is a link between computer games and heightened depression and anxiety [8]. The relationship, however, does not inherently mean association, since people who are sad or depressed are attracted to video games because they help alleviate adverse emotions. People build a pattern of gaming that allows them to get lost in reality. Therefore, people eventually wind up being, inevitably, sad. If

an individual is addicted to video games and goes nowhere else in life, then they are likely to have lower self-worth and trust. Moreover, players are judged for these things as they go out into the actual world, and since they are not adjusted to being judged, they feel very awkward. They are starting to sit indoors to stop going outside. This makes their self-esteem low [9].

Moreover, joining online communities to chat about playing games, interact with one another for playing, and talking through headsets helps players feel that they are part of something. Internet peers are becoming more familiar and soothing, while people in the real world seem more provoking and threatening. This affects the overall relationship with friends and family also gets affected. The brain has the power in the future to perceive possible concerns. That is what is called anxiety if this skill gets out of balance. Video games do not actually induce fear, so sometimes it causes anxious feelings as they take control over an individual's life and they start neglecting more crucial things. These ramifications lie in the future. There is a strong relationship between anxiety and E-sports. Due to video games, people feel varying levels of anxiety, which keeps them captivated to playing video games. The more time people spend playing games, the more are the chances of increasing their anxiety. However, the researchers have not yet ascertained that the cause of anxiety is more directly related to playing E-sports games, research appeared to demonstrate that E-sports and anxiety are related. This implies that both have no cause-and-effect relationship but both are related to each other and contribute to each other [10].

A study done by Tham SM et al., to examine the symptoms of anxiety and depression in problematic gamers (Those who do gaming more than the normal amount) showed an increasing amount of anxiety among players [11]. An online survey was conducted with 361 participants, from universities and esport groups. A path-analysis was conducted to identify the symptoms of anxiety and depression associated with E-sports. It was found that problematic gaming (excessive and detrimental use of video games) has been strongly correlated with diminished real-world social support and enhanced in-game social support. Also, problematic gaming has maintained a major direct impact on depression and anxiety [11]. Aggressive behaviour is one in which physical, as well as emotional harm, is done to other people. It may vary from verbal violence to the degradation of the property of the victim. Colman AM, described aggressive behaviour as “a behaviour in which the primary cause is to injure a person physically or mentally" [12]. The causes of aggressive behaviour include family size personal relationship, environment, person’s health and experience in life, and his or her own personality. Moreover, aggressive behaviour is further divided into: Hostile, instrumental, emotional, rational, physical, and verbal aggression [13].

Researchers have found that violent online games promote aggressive ideas, behaviours patterns, and emotions, whether it is for the long-term or short-term [14]. Playing violent E-sports also reduces the likelihood of prosocial behaviour such as helping people in need and showing empathetic behaviour towards people [15]. Even though men spend more time than women in playing E-sports but the impact of violent games can be harmful to both males and females, which promotes aggressive behaviour patterns.

Adachi PJ and Willoughby T, conducted a study on E-sports and aggression, in which competitive online games were found to be positively associated with aggression [16]. Spending most of the day on a computer screen has a lot of negative effects on a person which can be physical, psychological, or emotional. E-sports athletes are subject to cognitive and emotional stressors in many tournaments [17]. Moreover, internal stressors contribute to team conflicts such as in-game interaction, critique, loss of trust, etc, whereas external stressors can come from the crowd and other competitors [18]. Online gaming affects an individual’s mental health and at the same time harms physical health. Research has revealed that online gaming also harms one’s ability to think. Further, it has also been found that playing games for more than three to four hours can lead to addictive behaviour in children. Symptoms such as psychiatric disorders, lack of motivation, functional deficiency, deceit, and withdrawal can be caused by the intense playing of E-sports [19]. Moreover, people who spend less time playing E-sports have higher levels of psychological well-being as compared to those who spend more time on E-sports. Also, people who have less psychological well-being, have more chance of developing depression. Also, Goh C et al., studied E-sports and psychological well-being. This study aimed to examine the effect of online gaming on psychological well-being [20]. Exploratory analyses and a cross-sectional method were used to assess the association between playing hours and psychological well-being. Hence, the findings found that there was a strong correlation between more playing time and lower psychological well-being.

Further, according to research done by KocadağM, on E-sports and well-being [21]. The research sample comprised 368 individuals from all over the world. The web-based questionnaire and the psychological well-being scale were used to gather data obtained across the Steam Community and Facebook. In this research, adolescents' psychological well-being was contrasted with facets of their job status and everyday playtime. In line with the findings, professional E-sports athletes had slightly poorer psychological well-being than that of the other two working classes. And, the group of two who play over than six hours a day has slightly poorer psychological well-being than that of the group of two who play fewer than six hours a day [21].

Viewing the above literature and there are fewer researchers which have considered the effects of E-sports on psychological factors in the Indian population. In association with the above review of literature, this study focuses to identify the relationship of E-sports with anxiety, aggression, and psychological well-being among youth. Furthermore, the present research was intended to provide ample solid evidence and a scientific basis to encourage new research projects on the relatively unexplored effects of E-sports in terms of mental health. The present study aimed to understand the relationship between E-sports, anxiety, aggression, and psychological well-being among youth. The objective of the study was to understand the relationship between E-sports, anxiety, aggression, and psychological well-being among youth.

The null hypothesis of the study was that there would be no significant relationship between E-sports, anxiety, aggression, and psychological well-being, whereas the alternative hypothesis of the study was that there would be a significant relationship between E-sports, anxiety, aggression, and psychological well-being.

MATERIALS AND METHODS

This cross-sectional study was conducted in Delhi and National Capital Region (Noida, Gurugram, Faridabad), from November 2020 to April 2021, included 102 participants within the age range of 16-27 years. Ethical clearance was obtained (AIPS/RB2021/02).

The sample of the study comprised 102 participants both male (n=51) and female (n=51). The sample size was calculated digitally, using Google form. The participants were randomly selected and most of the participants were in the age range of 18-26 years (n=97). Lastly, the purposive sampling technique was used for the selection of samples.

Inclusion and Exclusion criteria: Subjects with an exposure to eSports, with age group of 16 to 27 years, and belonging to an urban Indian community were included in the study. Whereas, any participant beyond the age group of 16-27 years and having rural and semi-urban populations were excluded from the study.

Questionnaires

The independent variable of the study was eSports and the dependent variables were anxiety, aggression, and psychological

well-being. The study included four different questionnaires and the data collection was done on online platforms.

Problematic Online Gaming Questionnaire Short-Form (POGQ-SF) [22]

Problematic Online Gaming Questionnaire (POGQ-SF) was used in this study to assess the problematic gaming in the participants. Papay O et al., developed this scale to evaluate problematic and non-problematic online gaming in players. This is five points likert scale that ranges from 1 "strongly disagree" to 5 "strongly agree." The scale has twelve items. The score range is between 12 and 60. For problematic players, the cut-off score is 32.

POGQ is a free-to-use and appropriate tool for determining problematic online gaming, promoting potential research, and supporting the implementation of prevention and recovery services by legal officials and healthcare professionals.

Hamilton Anxiety Scale [23]

Hamilton Anxiety Scale (HAM-A) was used in this study to measure the anxiety level of participants. The scale was developed by Hamilton M, in 1959 and it requires 10-15 minutes to complete. The scale consists of 14 items and this is a four-point Likert scale that ranges from 0 to 4. The scale can be used on adolescents, children, and adults. Also, this scale is free to use.

Moreover, the score range of the scale is between 0-56, the participants falling under the range of 0-17 are considered to have low anxiety, 18-24 mild to moderate anxiety, and 25 above, moderate to severe anxiety.

Bussy-Perry Aggression Questionnaire [24]

Bussy-Perry Aggression Questionnaire (BPAQ) was used in this study to measure the level of aggression in the participants. The scale has 29 items and it was developed by Buss and Perry in 1992. This is a five-point Likert scale and it requires 15-20 minutes to complete.

Moreover, the scale has four sub-factors, which are physical aggression, verbal aggression, anger, and hostility and the total score range of the scale is between 29 and 145. The BPAQ is a widely used scale and it is very easy to administer. Also, this scale is free to use.

According to the instructions of the scale, the cut-off score for aggression is 87,

- The participants falling below the cut-off score consider having a low level of aggression
- Participants falling above the cut-off score consider to have a high level of aggression.

Psychological well-being scale-Short Form [25]

Psychological well-being scale-short form (PWB-SF) was used in this study to measure the level of psychological well-being of the participants and it is free to use. The psychological well-being scale was developed by psychologist Ryff CD and Keyes CLM, and it is free to use. The scale has 18 items that measure the well-being and happiness of an individual. It is a seven-point likert scale and it requires 5-10 minutes to complete. A higher score indicates a higher psychological well-being of an individual.

Similarly, according to the instructions of Psychological well-being Scale (Ryff, 1995), the participants falling under the range

- 36-70 consider having low levels,
- 71-105 consider moderate level, and
- 106-140 consider high levels of psychological well-being

Procedure

To study the relationship between E-sports, anxiety, aggression and psychological well-being, an online survey was conducted on 102 participants, both male (n=51) and female (n=51) and the sample size was calculated through Google Forms. All the participants were from India. Questionnaires were sent to the participants via Google form and they were requested to answer each question truthfully according to the given instruction. Their demographic details were also taken through Google forms and most of the participants were in the age range of 18-26 years (n=97). Further, informed consent was taken before filling the questionnaires. They were told that the details they gave about themselves and their responses will be kept completely confidential and would be used exclusively for research purposes.

The Google form consisted of four different questionnaires, which measured the level of anxiety, aggression, psychological well-being, and problematic gaming among participants. The participants were supposed to rate each statement by selecting a response that best describes them. Most of the participants were from Delhi, Gurugram, and Noida and for each questionnaire, all participants were given instructions as stated in the respective questionnaires [22-25]. Lastly, the scores of the participants were carefully recorded.

STATISTICAL ANALYSIS

For each of the four variables, mean, standard deviations, and frequency were calculated. In addition, the raw scores of each variable were tabulated and interpreted using the scoring keys. Pearson's correlation test was used to assess the correlation between E-sports, anxiety, aggression, and psychological well-being. The same has been represented graphically. The p-value of 0.01 was considered as statistically significant.

RESULTS

The sample of the study comprised 102 participants both male and female. The participants were youth between the age group of 16 to 27 years. Mean, median, standard deviation, and skewness were calculated for problematic E-sports. Anxiety, aggression, and psychological well-being among participants [Table/Fig-1].

Descriptive statistics	E-sports	Anxiety	Aggression	Psychological well-being
Mean	26.02	11.23	77.51	82.21
Median	24.50	8.50	77	80
Standard deviation	9.318	8.506	19.37	12.08
Skewness	0.286	0.850	0.375	0.411

[Table/Fig-1]: Mean, Median, and Standard deviation of E-sports.

As it can be seen from [Table/Fig-1], the mean for E-sports was found to be 26.02 with a median and standard deviation of 24.50 and 9.318, respectively. Similarly, the mean for anxiety was found to be 11.23 with a median and standard deviation of 8.50 and 8.506, respectively. Moreover, the mean, median and standard deviation obtained for aggression were 77.51, 77, and 19.37, respectively. The mean for psychological well-being was found to be 82.21 with a median and standard deviation of 80 and 12.08, respectively.

Correlational analysis: To understand the relationship between E-sports, anxiety, aggression and psychological well-being a Bivariate correlation (Pearson's Constant) was conducted. Also, to better understand the relationship between E-sports and sub-factors of psychological well-being, a correlation was measured. The data indicating the relationship between E-sports, anxiety, aggression, and psychological well-being is represented in [Table/Fig-2]. It was found that E-sports was not significantly related to

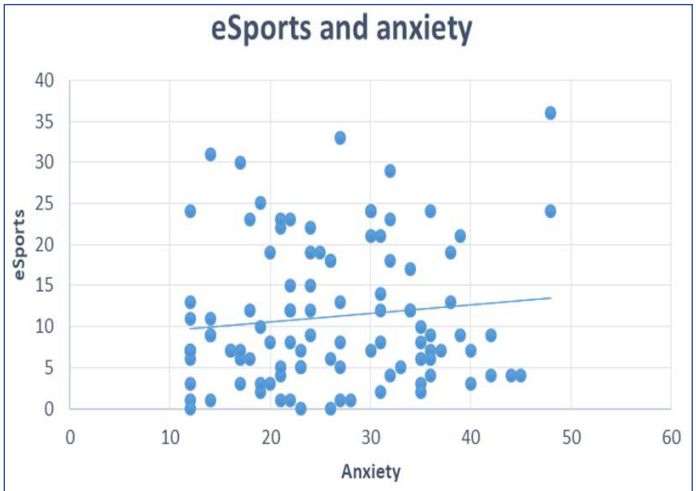
Variables	1	2	3	4
E-sports	1			
Anxiety	0.112	1		
Aggression	0.377**	0.520**	1	
Psychological well-being	-0.259**	-0.204**	-0.329**	1

[Table/Fig-2]: Correlation table for E-sports, anxiety, aggression and psychological well-being.
**Correlation was significant at the 0.01 level (2-tailed)

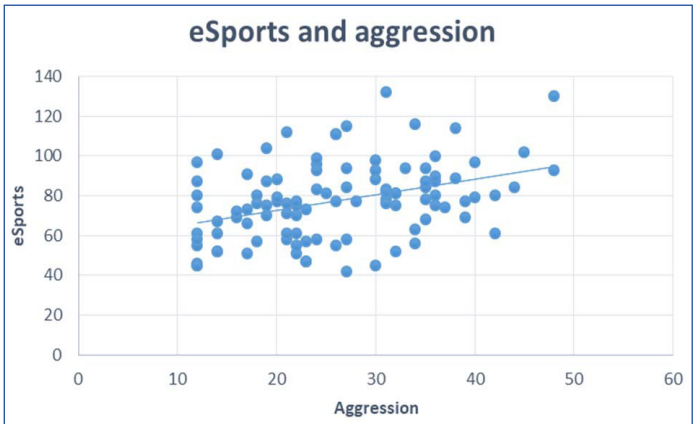
anxiety (r-value=0.112, p-value> 0.01). Further, a significant positive correlation was found between E-sports and aggression (r-value=0.377, p-value<0.01), whereas a significant negative correlation was found between psychological well-being (r-value=-0.259, p-value<0.01) and and E-sports. The data has been graphically represented in [Table/Fig-3-5].

From [Table/Fig-3] it can be seen that there was no correlation between E-sports and anxiety. This means that there was no significant relationship between E-sports and anxiety and neither of the variables has an influence over the other.

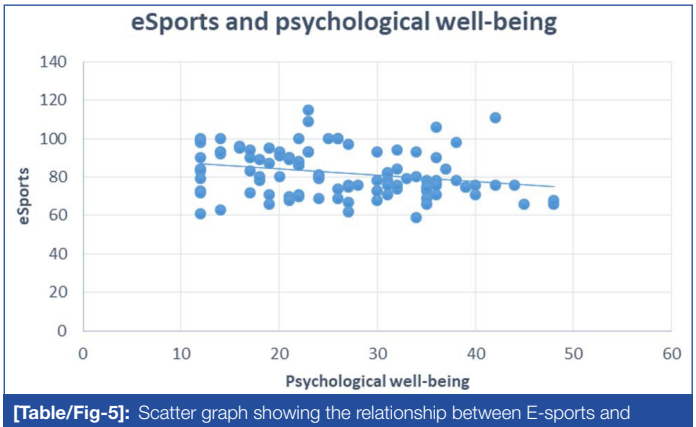
From [Table/Fig-4] it can be seen that the variables, E-sports and aggression, have a positive correlation. This means that if the level of problematic gaming increases, aggression also increases. From [Table/Fig-5] it can be seen that the variables, E-sports and psychological well-being, have a negative correlation. This means that if the level of problematic gaming increases, psychological well-being decreases.



[Table/Fig-3]: Scatter graph showing the relationship between E-sports and anxiety.



[Table/Fig-4]: Scatter graph showing the relationship between E-sports and aggression.



[Table/Fig-5]: Scatter graph showing the relationship between E-sports and psychological well-being.

Mean, median, standard deviation, and skewness were calculated for problematic E-sports, anxiety, aggression, and psychological well-being among participants. According to the instruction of problematic gaming (excessive and detrimental use of video games) scale, the cut-off score for problematic gamers was 32. Based on this, it was found that 27 participants were falling under the category of problematic gamers [Table/Fig-6].

Interval	N	Interpretation
12-32	75	Non-problematic
32-62	27	Problematic

[Table/Fig-6]: Interpretation table of problematic and non-problematic gamers.

Based on HAM-A scale, it was found that 75 participants had a low level of anxiety, 21 participants had mild to moderate level of anxiety and six participants had moderate to severe levels of anxiety [Table/Fig-7].

Interval	N	Level of anxiety
0-17	75	Low
18-24	21	Mild to moderate
25-40	6	Moderate to severe

[Table/Fig-7]: Interpretation table of level of anxiety according to HAM-A scale.

Based on Bussy-Perry Aggression Questionnaire (BPAQ), it was found that 32 participants were falling under the category of a higher level of aggression [Table/Fig-8].

Interval	N	Level of aggression
30-86	70	Low level
87-145	32	High level

[Table/Fig-8]: Interpretation table of level of aggression according to Bussy-Perry Aggression Questionnaire (BPAQ).

Based on PWB-SF, it was found that 17 participants had low level of psychological well-being, 81 participants had a moderate level of psychological well-being and four participants had high levels of psychological well-being [Table/Fig-9].

Interval	N	Percentage (%)	Level of psychological well-being
36-70	17	16.7%	Low
71-105	81	79.4%	Moderate
106-140	4	3.9%	High

[Table/Fig-9]: Interpretation table of level of psychological well-being based on PWB-SF.

Further, a Bivariate correlation was conducted to understand the relationship between E-sports, anxiety, aggression, and psychological well-being. There was no significant relationship found between eSports and anxiety among participants (r-value= 0.112, p-value>0.01). There was a significant positive correlation between eSports and aggression (r-value=0.377; p-value<0.01). Which indicated that participants with high level of problematic gaming had high level of aggression. Also, a significant negative correlation was found between eSports and psychological well-being (r-value=-0.259; p-value<0.01) [Table/Fig-2]. Which indicated that participants who scored high on problematic E-sports had a poor level of psychological well-being.

DISCUSSION

E-sports, also known as 'Competitive gaming', is an increasing type of team play made possible by interactive systems, such as video games. In a study done by Praveen A, it was found that there was no significant relationship between digital gaming and psychological well-being. Total of 415 adolescents were the participants in this study and a cross-sectional method was used to study the impact of digital gaming on psychological well-being [26].

The present study aimed to explore the relationship between E-sports, anxiety, aggression, and psychological well-being among youth. The findings revealed that E-sports was not significantly related to anxiety (r-value=0.112, p-value> 0.01). Hence, the hypothesis is accepted. Contradictory to the results, Cole SH and Hooley JM, conducted research on online gaming [27]. The aim of the study was to find problematic internet use (an inability to manage one's Internet usage, which has detrimental effects in everyday life) in online gaming. A sample of 163 participants was taken and an online survey was conducted. Findings suggested that level of anxiety, social phobia, neuroticism an introversion was more among those who scored higher in problematic internet use. Similarly, Cheung JCS et al., aimed to determine the relationship between internet use and depression [28]. A sample of 665 participants (adolescents) was taken. Further, the finding indicated that males spent more time in online gaming than females. Moreover, depression was found to be positively correlated with internet addiction.

On similar lines with present findings, a research by Wang JL et al., studied mobile game addiction on a sample of 600 students [29]. The result showed a positive correlation between mobile game addiction, depression, loneliness and social anxiety.

Another, according to the results obtained from a correlational analysis, aggression (r-value= 0.377, p-value< 0.01) was found to be significantly and moderately positively related to E-sports. Thus, a moderate positive relationship was found between the scores of E-sports and aggression among the participants, which indicates that as the problematic gaming habits increases, the level of aggression also increases. In line with the present findings a study done by Kim EJ et al., revealed the similar findings which investigated the relationship between E-sports addiction, aggression, self-control and narcissistic personality traits [30]. It was found that there was a positive relationship between online gaming addiction and aggression. Furthermore, research was done by Dowsett A and Jackson M, on violent/competitive gaming and aggression to identify the effect of playing violent and competitive video games on aggression with a sample of 64 participants [31]. The finding showed that competitive games lead to more aggressive behaviour as compared to violent games. Contradictory to the results, Williams D and Skoric M, studied E-sports and aggression. The aim of the study was to assess whether violent online games contributes to aggressive behaviour [32]. The study included 214 participants, both males and females, and a longitudinal method was used to measure aggressive behaviours including a control group. Hence, results indicated that there was no relation between E-sports and aggression. According to a research done by Adachi PJC and Willoughby T, the impact of violent video games on aggressive behaviour [33]. A total no. of 84 participants were taken as a sample of this study. Findings indicated that there was no significant impact of playing violent video games on aggressive behaviour.

Furthermore, the present findings revealed that psychological well-being (r-value= -0.259, p-value< 0.01) was found to be significantly and highly negatively related to E-sports. It was found that there was a highly negative relationship between E-sports and psychological well-being, which indicates that as the problematic gaming habits increases, the psychological well-being of an individual decreases. Thus, the hypothesis was rejected. On similar lines, a research by Goh C et al., studied E-sports and psychological well-being. Further, the findings found that there was a correlation between more playing time and lower psychological well-being. Furthermore, the age group comparison can give us more generalised results. Also, Lobel et al., studied the impact of online gaming on adolescents psychosocial well-being. A longitudinal study (one year) was conducted with 194 participants and comparison was done on three parameters: violent games, cooperative games and competitive games [34]. Further, it was found that violent gaming and cooperative gaming was negatively associated with psychosocial well-being, whereas competitive gaming was positively associated with psychosocial well-being. Further, according to a research done by KocadağM, on E-sports and well-being [35]. The research sample comprised 368 individuals from all over the world. In line with the findings, professional E-sports athletes had slightly poorer psychological well-being than that of the other two working classes. And, the group of two who play over than six hours a day has slightly poorer psychological well-being than that of the group of two who play fewer than six hours a day.

Anxiety or depression is not inherently triggered by them, in contrast, there has been researches that found that extreme video gaming while playing is shown to be related to optimistic feelings and social interactions but we cannot deny the fact that video game addiction, however, can definitely cause few problems even worst. Few problems noted by researchers revealed that many players started to play computer games in order to hide the emotions that may have faced such as harassment at school, or on social networks when they went home. In such scenarios, a computer game seemed to be the only escape for the person. The reason could be that they feel that this is the only place where they can indulge themselves and avoid real life's emotional distress. The function of various parts of the brain in gamers was looked at in a Functional Magnetic Resonance Imaging (fMRI) report research. It was found that amygdala is the part that regulates anxiety and negative feelings in your brain. The research shows that the amygdala calms down while your amygdala is involved, i.e. when you are feeling discomfort or anxiety, and you start playing a video game. Video games basically encourage us to escape and inhibit negative emotions [36].

Lastly, the research further shows that the attributes of males and females, as well as problematic and non problematic gamers, vary. As a result, more advanced and oriented research for each subgroup will be expected in the future. For further studies, the present research can be useful as a theoretical base for future researchers in this field as there are only limited studies in India and the E-sports field is the area to be explored in near future. In a country like India, this present research also represents E-sports parameters and gender disparities in problematic gaming. This study is amongst the very few that have explored E-sports perspective among Indian community. According to the results, problematic gaming should be investigated in the Indian community in order to take the requisite measures to prevent its harmful effects. These results could further help in creating a positive mind shift in people to be more aware of the harmful effects of E-sports.

Limitation(s)

No study is complete without some limitations, in view to the present findings the limitations would be small sample size effecting the generalisations of results. The participants of the study were mainly from Delhi National Capital Region, hence the sample was again restricted to the location. Further, the biasness of the respondents, as in all other researches, may have affected the responses.

CONCLUSION(S)

The findings indicated that there was no significant relationship between E-sports and anxiety, whereas a positive relationship was found between E-sports and aggression, and a negative relationship was found between E-sports and psychological well-being.

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