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A comparative Exploration of Psychosocial Profiles of eSports and sports players

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Abstract: Background: The commercial association has made computer-based games very attractive, providing a platform where they are being considered on similar lines as traditional/real sports. However, despite the similarities there exists considerable difference primarily because of the extent of physical involvement. The study intended to explore the psychosocial profile of Esports players and traditional sports players.
Methods: The study sample consisted of 140 participants (73 esports & 67 sports). In this cross-sectional study, we recruited participants from Esports cafes, Youth Sports centers & Universities and collected their sociodemographic variables and psychosocial profile with Mini-International Personality Pool 6, Self-Concept Clarity Scale, UCLA Loneliness Scale Version 3, Satisfaction with Life Scale, and Depression, Anxiety and Stress Scale-21.
Results: The mean age of Esports and sports players were 23.11± 4.60 years and 22.24± 3.22 years respectively. Both categories of players differed in terms of hours of play on weekdays/weekend, process of introduction to games, engagement of family and methods used to improve game play. For Psychological variables, esports players were likely to report significant higher scores on openness (β= -0.151, CI=.769-.962) and honesty/Humility (β= -0.151, CI=.672-.863) compared to sports players but not on other variables of depression, anxiety, stress, loneliness, self-concept, and satisfaction with life.
Conclusions: Our study points out that despite differing in Socio-demographic and playing variables, esports and sports players tend to exhibit much similarity in psychological domains. Further longitudinal studies are warranted to extend the application and generalizability of our study results.

Keywords: Esports; Sports; Psychosocial; Personality; Online Gaming

Introduction:

eSports involves organized, multiplayer video game competitions, typically between professional players. It has an ingrained component of competition (team players and competition between teams) and media structure (media coverages, sponsors, spectators) [1].

The top video games in Esports are– DotA 2, Counter Strike-Global Offensive, Fortnite, League of legends, Players Unknown Battleground (PUBG) and Overwatch. 2.2 billion people are active gamers and will further increase to 2.73 billion by 2021. Among these players, few thousand only become professional gamers or Esports players [2]. Current proponents of gaming believe that Esports has great potential to be a sporting activity as it mimics central features of sports, like interpersonal competition, adherence to rules, skill training and development, goal attainment, and involvement of coordination and agility [3]. Esports players follow intense practice regimens to train their hand movements, improve reaction times and their muscle memory [4]. The process of transformation from a recreational internet gamer to professional player requires development of high levels of cognitive and physical skills [5]. Certain esports titles have been included as demonstration disciplines in Asian Games 2018, with hope of inclusion as full medal events in future games [6]. Addition of Esports to numerous intercollegiate athletic departments has further contributed towards acceptance as a sporting entity [7] .

Despite preliminary evidence of physical involvement, most organizations remain unconvinced about the physical intensity in esports sufficient to consider them as full-fledged sports in their own self [8]. Recent case studies highlighted the manifestations of dysfunctions in the form of

disturbance in academic and interpersonal relationships, external or internal expression of anger, irritability, hospitalization, self-harm, and suicidality due to excessive indulgence in PUBG [9, 10]. Further, lack of federations and organizational structures have been cited as one of the biggest hindrances in Esports being considered a fully sporting entity [11, 12].

There are no studies which have compared Esports and traditional sports from psychosocial perspective [13]. Such inconclusive information has resulted in misinformation in public and health professionals about Esports in International context also. We felt a need to challenge the above-mentioned confusion and build empirical evidence for better understanding of Esports and sport entities. To the best of our knowledge, this is one of its kind works to compare the psychosocial domains of these two groups and can provide a stepping stone in exploring more similarities between these disciplines.

Methods:

Study participants: A total of 155 individuals in the age group of 18-35 years were approached for participation in the study. Among them,140 players (73 Esports players and 67 sports players) completed survey protocols. We recruited using convenient sampling from Esports cafes, Youth Sports centers & Universities based in the Southern part of India using a cross-section research design. The majority of preferred Esports video games have 3-5 players in a team and as a result, Basketball was chosen for the sports category. The survey period lasted for 24 weeks. Only those players who (i) had competed in one or more state/national level sports or esports events in the last one year, (ii) practiced a minimum of one hour/day (iii) fluent in English and (iv) provided informed consent were included. This study was approved by the Institute Ethics Committee (protocol number = NIMH/DO/IEC [BEH.Sc.DIV]/2019 & date of approval =13/06/2019. All participants provided informed consent to participate in the study.

Study Tools:

Background Data Sheet: Two separate background sheets were created for both Sports and Esports athletes by the researcher using 6 focused group discussions with 10 mental health professionals (working in the area of addiction/technology addiction and mental health for the last 5 years), 9 sports players and 9 Esports players (with a minimum of one year experience) and four sports and Esports coaches. Both the data sheets consisted of an equal number of questions and were created to gain information regarding, gender, age, academic qualifications, occupation, relationship status, devices used by Esports players, information regarding participation in competitive gaming, the average time spent playing sports/video games and other characteristics related to gaming or sports.

Mini-International Personality Pool 6 (Sibley et.al, 2011): It is a 24-item self-report questionnaire which measures six personality traits, namely Honesty-Humility, Extraversion, Agreeableness, Conscientiousness and Neuroticism. It uses seven-point likert, 1 being very inaccurate and 7 being very accurate. Each personality trait consists of 4 items. Reverse scoring is for the following items 6, 7, 8, 9, 11, 12, 13, 15, 17, 18, 19, 20, 21, 22, and 24. Followed by calculating the average score [14, 15].

UCLA Loneliness Scale Version 3 (Russell, 1996): This scale is a revised version of both UCLA Loneliness scale and the Revised UCLA Loneliness scale. The scale consists of 20 self-report items which measure the overall feelings of loneliness in individuals. It uses four-point Likert, 1 being never and 4 being often. Ten items have their scores reversed [16].

Self-Concept Clarity Scale (Campbell et.al, 1996): It is a unidimensional measure of 20 items, which uses 5-point Likert scale, with items ranging from 1 being strongly disagree to 5 being strongly agree and measures the following two Self-esteem & Big five measures. The scale ranges from 12-60. Overall internal consistency: 0.10 to 0.58 [17].

Satisfaction with Life Scale (Diener et al, 1985): This scale consists of 5 items on a 7-point Likert scale, ranging from 1 being strongly being strongly disagree to 7 being strongly agree and the range of scale from 5 to 53. It measures subjective well-being. Internal consistency ranges from .80 to .89 [18].

Depression, Anxiety and Stress Scale-21 (Lovibond & Lovibond, 1995):

It is a short form of DASS. The scale consists of three subscales: depression, anxiety, and stress. It consists of 21 items on 4-point Likert, 0 being not at all applied to me and 3 being applied to me very much or most of the time. Each subscale consists of 7 items. For scoring we double the raw scores. The resulting scores provide the feedback about the severity of a person's depression, anxiety, and stress levels [19].

Procedure: A total of 155 players were approached and out of which a sample size of 140 was recruited for the present study. The schedule of questionnaire i.e., MINI International Personality Pool 6, Self-Concept Clarity Scale, UCLA Loneliness Scale Version 3, Satisfaction with Life Scale, and Depression, Anxiety and Stress Scale-21 was administered in an individual setting. Consent was taken from the participants at the time of filling out the form. Confidentiality and anonymity about the survey responses were assured for all the participants.

Data Analysis: Authors used descriptive analysis for nominal and ordinal data. The Mann Whitney U test

was used to compare medians of both the groups with the variables. A Chi-square test was used to test categorical variables. Stepwise regression analysis was used to find the significant predictors of Mini-International Personality pool, UCLA Loneliness Scale, Self-concept clarity scale, satisfaction with life scale and Depression, anxiety and stress scale for Esports and sports.

We used the Statistical Package for the Social Science version 20.0 for Windows (SPSS International Business Machines Corp, Armonk, NY, USA) to compute the study data. The differences between groups were considered significant if $p < 0.05$.

Results:

Socio-demographic profile**:**

eSports and sports athletes had a mean age of 23.11±4.60 years and 22.24±3.22 years, respectively. Sixty percent of the eSports group had more than 15 years of education, whereas it was 49% for sports players. In the eSports group, 45% of the athletes were employed; however, in sports, only 21% were employed (Table 1).

Table 1. Distribution of demographic among the sample (n=140)

Variable		Groups	
		Esports	Sports
		n (%)	
Gender	Male	73(100)	32(47.8)
	Female	0(0)	35(52.2)
Education (years)	15 or below	29(39.7)	34(50.7)
	>15	44(60.3)	33(49.3)
Occupation	Student	40(54.7)	53(79.1)
	Employed	33(45.2)	14(20.9)
Relationship Status	Single	62(84.9)	52(77.6)
	Married	3(4.1)	9(13.4)
	Committed	8(11.0)	4(6.0)
	Separated	0(0.0)	2(3.0)

Gaming Characteristics:

Eighty four percent (n = 61) of eSports players used a PC as their primary device, with mobile (13.7 percent, n = 10) and consoles (2.7 percent, n = 2) coming in second and third, respectively (Table 2). All sports players were from the basketball discipline, whereas among eSports players, the majority (43, 58.9%) played MOBA, with the remaining playing FPS (13, 17.8%), Battle Royale (8, 11%), and other genres (9, 12.3%). Sports and eSports players significantly differed on the average amount of time spent training during the weekdays and weekends.

Table 2. Gaming characteristics of Esports and Sports players

Variable		Groups n (%)		P value
		Esports	Sports	
Average time spent on sports or videogaming in hours (weekdays)	<10	28(38.4)	4(6.0)	<0.001
	10-30	25(34.3)	53(79.1)	
	>30	20(27.4)	10(14.9)	
Average time spent on sports or videogaming in hours (weekends)	<10	28(38.4)	49(73.1)	<0.001
	10-20	41(56.2)	18(26.9)	
Introduction of athletes to sports and esports?	Family	12(16.4)	34(32.9)	<0.001
	Friends	34(46.6)	25(37.3)	
	Others (advertisement through social media)	27(38.9)	8(11.9)	
Engagement of family members in sports/esports	No	62(84.9)	27(40.3)	<0.001
	Yes	11(15.2)	40(59.8)	
How do athletes spend their interval time?	Relax	25(47.0)	23(34.3)	0.527
	Make game strategies & talk to my teammates	38(52)	44(65.7)	
	Coach	1(1.4)	35(52.2)	<0.001

Methods used to train or improve gameplay.	YouTube (streaming)	45(61.6)	17(25.4)	
	Self-review	27(37.0)	15(22.4)	
Reasons for engaging in competitive gaming.	Enjoyment & self-esteem enhancement	37(50.7)	35(52.2)	0.854
	skill building & career	36(49.2)	32(49.7)	
Do they get "tilted" or "frustrated"?	Often	21(28.8)	12(17.9)	0.227
	Sometimes	31(42.5)	37(55.2)	
	Rarely	21(28.8)	18(26.9)	

Over 90% of sports players trained for 10 or more hours over the weekdays, compared to 61% of eSports players, while 27% of sports players spent 10 or more hours during the weekend, compared to 38.4% of sports players. A significantly greater proportion of eSports players were introduced to gaming through social media (38.95%) and used YouTube to improve their performance (61.6%).

Psychosocial variables:

Using the Mann-Whitney U test, eSports players had significantly higher scores on openness and honesty/humility personality domains, while sports players had higher scores on measures of depression, anxiety, and stress. However, using logistic regression, a significant difference was found only in personality domains, where eSports athletes were significantly more likely than sports players to exhibit openness, honesty, and humility (Table 3).

Table 3. Comparison of sports and esports players on various psychosocial using logistic regression analysis

Predictors	**B(SE)**	**p-values**	**Odds Ratio**		
				Lower Class Interval	**Upper Class Interval**
MINI Personality Pool 6					
Extraversion	.065(.057)	0.252	1.067	.955	1.194
Agreeableness	.025(.061)	0.679	1.026	.910	1.156
Conscientiousness	.014(.060)	0.810	1.014	.902	1.141
Neuroticism	-.006(.064)	0.925	.994	.877	1.126
Openness	-.151(.057)	0.008	.860	.769	.962
Honesty/humility	-.272(.064)	0.001	.762	.672	.863
Self-Concept Clarity Scale					
Self-Concept Clarity	-.003(.032)	0.928	.997	.936	1.062
Depression, Anxiety and Stress Scale-21					
Depression	.105(.074)	0.160	1.110	.959	1.285
Anxiety	.017(.082)	0.840	1.017	.866	1.194
Stress	-.020(.102)	0.848	.981	.803	1.197
UCLA Loneliness Scale Version 3					
Loneliness	.084(.046)	0.067	1.088	.994	1.190
CONSTANT	3.702(3.545)	0.296	40.528		

Discussion:

While the majority of people tend to play video games for recreation, esports players are a minority competing similarly to sporting events [4]. The following research was planned to compare the psychosocial profile of sports and esports players.

Esports and sports players significantly differed on several playing characteristics. Esports players spent more time practicing during the weekends. Keeping in with the nature of discipline, social media role in terms of introduction or for learning was greater for esports players [20].

The two groups significantly differed on two personality domains: openness and honesty/humility. The personality trait of openness is an indicator of the level of imaginativeness and creativity while honesty/humility relates with fairness, mutual help and non-aggression [14]. Individuals exhibiting higher scores on openness tend to engage in newer idea related tasks. Online games present challenges to the players where they are expected to make quick decisions and often think out of the box to proceed ahead with the gameplay, thus esports tend to favor the individuals who are imaginative and creative, unlike sports where

physical attributes are the most prominent aspect determining performance. Further, our study reported higher scores on honesty/humility in esports players. As described previously this trait has been an object of interest since the last decade only and has not been explored previously in esports players. Higher scores in esports players as compared to sports players tend to indicate that esports players believed in the idea of fairness, mutual help, and non-aggression. As esports require frequent social engagements and team play, it is unsurprising that they tend to exhibit traits of mutual help and fairness.

The current study found that there was no significant difference between the self-concept clarity and loneliness among Esports and sports players. Since sports people are physically active and tend to keep themselves in good shape, they often have a positive perception about their self-concept [21]. Among sports players, self-concept is positively related to better skills [22] and mental toughness [23], while in those who play video games, poor self-concept is associated with problematic gaming [24]. The fact that in our study Esports players had similar scores on self-concept clarity as sports persons, tends to highlight that these Esports players considered themselves as attractive and competitive on similar lines to sports players rather than as problematic gamers.

We did not find any significant difference between the scores on loneliness for Esports and sports players. While studies [25] suggest that sports players experience less loneliness in comparison with the general population, online games by presenting highly socially interactive environments can serve to further enhance social connectivity [26] suggesting positive impact of both these disciplines. Further, we did not find any significant difference between the sports and esports group in the domains of depression, anxiety and stress. Except for certain subgroups (experiencing failures or suffering injuries or at the verge of retirement) [27], prevalence of mental disorders among athletes is comparable to the general population [28]. Although, esports players may be less active and with poorer physical attributes compared to sports athletes [29], yet most consider their health status as good to excellent.

[30]. Finally, Esports and sports players reported no significant difference in subjective satisfaction with their life. The process of regularly training and developing their skills appears much similar and tends to have a similar effect on their subjective experience of life.

As a stereotypical view exists about the addictive nature of online gaming, findings from this study can help better delineate that distinction between professional online gaming and problematic online gaming. Our study clearly points to the fact that sports and esports players are comparable on a number of psychosocial domains, suggesting similar attributes between them. This can prove useful for sensitization of professionals and stakeholders, as well as enhance the psychosocial conceptual understanding of Esports.

This is the first study in India exploring the various psychological facets of Indian esports players. We ensured that those participating in competitive gaming were included by visiting various esports/gaming cafés. The study has a comparison arm in the form of traditional athletes, which again is perhaps the first of its kind in the context of Esports research. However, the readers are cautioned not to overinterpret the study results because of certain limitations. The study data were exclusively self-reported and may have shared method variance. The study included a single sports group (basketball players), while the Esports group had players from multiple genres of Esports. It remains unclear how this would have affected final results. The cross-sectional design limited our ability to know the similarities and differences in the psychosocial domains of Esports and traditional sports players. Further research with longitudinal research design can be planned to understand Esports and traditional sports players.

Conclusions:

ICD-11 has included Internet Gaming as a disorder for further research, with an increasing number of studies pointing out a relationship between problematic internet gaming and psychosocial domain deficits. However, in our study esports players did not differ significantly from sports players on a number of psychosocial domains including personality, self-concept clarity, loneliness, anxiety, depression and stress. These findings suggest that esports players may represent a group much similar to professional sports players rather than problematic gaming in terms of psychosocial characteristics. Further, more sport psychology-based research works are needed to find the position of Esports in the realm of sport activities, as well as the clinical implications of playing Esports.

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Declaration of Interest: None

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References:

1. Rosell Llorens M. eSport gaming: the rise of a new sports practice. Sport, Ethics and Philosophy. 2017 Oct 2;11(4):464-76.
2. Clement J. Number of video gamers worldwide 2015-2024. Statista. 2022. https://www.statista.com/statistics /748044/number-video-gamers-world/. Accessed 25 May, 2022
3. Crawford G, Gosling VK. More than a game: Sports-themed video games and player narratives. Sociology of Sport Journal. 2009 Mar 1;26(1):50-66.
4. Ward MR, Harmon AD. ESport superstars. Journal of Sports Economics. 2019 Dec;20(8):987-1013.
5. Granic I, Lobel A, Engels RC. The benefits of playing video games. American psychologist. 2014 Jan;69(1):66.
6. Hayward A. A Guide to Esports at the 2018 Asian Games. The Esports Observer. 2018. https://archive.esportsobserver.com/esports-asian-games/. Accessed August 30, 2018.
7. Keiper MC, Manning RD, Jenny S, Olrich T, Croft C. No reason to LoL at LoL: The addition of esports to intercollegiate athletic departments. Journal for the Study of Sports and Athletes in Education. 2017 May 4;11(2):143-60.
8. Parry J. E-sports are not sports. Sport, ethics and philosophy. 2019 Jan 2;13(1):3-18.
9. Al-Qahtani AA, Alenzi AA, Ali AS. PlayerUnknown's Battlegrounds: yet another internet gaming addiction. Journal of Ayub Medical College Abbottabad. 2020 Jan 29;32(1):145-6.
10. Mamun MA, Ullah I, Usman N, Griffiths MD. PUBG-related suicides during the COVID-19 pandemic: Three cases from Pakistan. Perspectives in psychiatric care. 2020 Nov 25; 877-879.
11. Abanazir C. E-sport and the EU: the view from the English Bridge Union. The International Sports Law Journal. 2019 Mar;18(3):102-13.
12. Martinelli J. The challenges of implementing a governing body for regulating esports. U. Miami Int'l & Comp. L. Rev. 2018 ;26:499.
13. Bányai F, Griffiths MD, Király O, Demetrovics Z. The psychology of esports: A systematic literature review. Journal of gambling studies. 2019 Jun;35(2):351-65.
14. Sibley CG, Luyten N, Purnomo M, et al. The Mini-IPIP6: Validation and extension of a short measure of the Big-Six factors of personality in New Zealand. New Zealand Journal of Psychology. 2011 Nov 1;40(3).
15. Sibley CG, Luyten N, Purnomo M, Mobberley A et al. The Mini-IPIP6: Validation and extension of a short measure of the Big-Six factors of personality in New Zealand. New Zealand Journal of Psychology. 2011 Nov 1;40(3);142-159.
16. Donnellan MB, Oswald FL, Baird BM, Lucas RE. The mini-IPIP scales: tiny-yet-effective measures of the Big Five factors of personality. Psychological assessment. 2006 Jun;18(2):192-203.
17. Russell DW. UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. Journal of personality assessment. 1996 Feb 1;66(1):20-40.
18. Campbell JD, Trapnell PD, Heine SJ, Katz IM, Lavallee LF, Lehman DR. Self-concept clarity: Measurement, personality correlates, and cultural boundaries. Journal of personality and social psychology. 1996 Jan;70(1):141-156.
19. Diener E, Emmons RA, Larsen RJ, Griffin S. The life satisfaction scale. Journal of personality Assessment. 1985;49(1):71-5.
20. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behaviour Research and Therapy.1995;33(3):335-43. https://doi.org/10.1016/0005-7967(94)00075-U
21. Nagorsky E, Wiemeyer J. The structure of performance and training in esports. PloS one. 2020 Aug 25;15(8):e0237584.
22. Aşçi FH. Physical self-perception of elite athletes and nonathletes: a Turkish sample. Perceptual and Motor Skills. 2004 Dec;99(3):1047-52.
23. Salokun SO. Positive change in self-concept as a function of improved performance in sports. Perceptual and motor skills. 1994 Jun;78(3):752-4.
24. Meggs J, Ditzfeld C, Golby J. Self-concept organisation and mental toughness in sport. Journal of sports sciences. 2014 Jan 20;32(2):101-9.
25. Leménager T, Dieter J, Hill H, Mann K, Kiefer F. Internet addiction and the virtual self-image. European Psychiatry. 2017 Apr;41(S1):S26.
26. Armstrong S, Oomen-Early J. Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus nonathletes. Journal of American College Health. 2009 Mar 1;57(5):521-6.
27. Cole H, Griffiths MD. Social interactions in massively multiplayer online role-playing gamers. Cyberpsychology & behavior. 2007 Aug 1;10(4):575-83.
28. Cyberpsychology, Behavior, and Social Networking. 2014 Jul 1;17(7):447-53.
29. Rice SM, Purcell R, De Silva S, Mawren D, McGorry PD, Parker AG. The mental health of elite athletes: A narrative systematic review. Sports medicine. 2016 Sep;46(9):1333-53.

30. Gorczynski PF, Coyle M, Gibson K. Depressive symptoms in high-performance athletes and non-athletes: a comparative meta-analysis. British Journal of Sports Medicine. 2017 Sep 1;51(18):1348-54.
31. DiFrancisco-Donoghue J, Werner WG, Douris PC, Zwibel H. Esports players, got muscle? Competitive video game players' physical activity, body fat, bone mineral content, and muscle mass in comparison to matched controls. Journal of Sport and Health Science. 2020 Jul;1-6.
32. Rudolf K, Bickmann P, Froböse I, Tholl C, Wechsler K, Grieben C. Demographics and health behavior of video game and eSports players in Germany: the eSports study 2019. International journal of environmental research and public health. 2020 Mar;17(6):1870.