

## A Cross-sectional Study to assess the Participation in sports and its effect on the Self-esteem and Happiness among medical students of Indore District

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### Abstract:

**Background:** Participating in sports has a positive influence in many areas. It supports positive mental health and improves social skills along with promoting physical health. Participating in sports develops healthy living habits that provide physical benefits such as developing coordination, physical fitness, and strength. Sports and Exercise reduces the levels of stress hormones in our body. At the same time, physical activity stimulates production of endorphins. These are natural mood lifters that can help keep stress and depression at bay and in this way, sports add up to the happiness too.

**Objectives:** This Study Aims to assess the effect of participation in sports on the self-esteem and happiness of medical students, and to identify healthy habits developed due to participation in sports among medical college students.

**Materials and Methods:** This cross-sectional study was conducted between June to November 2022 among 206 randomly selected medical students of age 18 to 26 years of various medical colleges of Central India in Indore District who gave consent, using a pre-designed, pre-tested, semi-structured questionnaire. The questionnaire was constructed based on two scales (Rosenberg self-esteem scale and Subjective happiness scale) for measuring self-esteem and happiness respectively. Data entered in Microsoft excel have been analysed by using SPSS software 25.0 (trial version).

**Results:** In this study 43.2% participants were Males and 56.8% were Females. Among them 49.5% belonged to 20-21 years age and mean age (in years) of participants was 20.89 with S.D. (Standard Deviation) of 1.57. Majority (69.4%) of the participants used to play sports while 30.6% did not play sports. Among those who were playing sports, 44% used to play badminton and 74.1% spent <1 hour/day on sports. 97.9% felt refreshed after playing sports and 97.2% opined that, sports have effect on self-esteem and happiness of a person. Mean Subjective Happiness Scale (SHS) Score of participants, those who played sports was  $4.823 \pm 0.69$  (S.D.). Mean SHS Score of participants those who did not play sports was  $3.26 \pm 0.63$  (S.D.). Mean Rosenberg Self-Esteem (RSE) Score of participants those who played sports was  $27.00 \pm 3.15$  (S.D.). Mean RSE Score of participants those who did not play sports was  $23.65 \pm 2.82$  (S.D.).

**Conclusion:** Subjective happiness scale score and Rosenberg self-esteem score were found to be greater among those who played sports compared to those who did not play sports and both were statistically significant ( $p < 0.05$ ).

**Keywords:** Self-Esteem, Happiness Scale, Sports Participation.

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### Introduction

Participating in sports has a positive influence in many areas. It supports positive mental health and improves social skills along with promoting physical health. Participating in sports develops healthy living habits that provide physical benefits such as developing coordination, physical fitness, and

strength. Studies have shown that exercise increases blood flow to the brain and helps the body build more connections between nerves, leading to increased concentration, enhanced memory, stimulated creativity, and better-developed problem-

solving skills. In short, playing sports helps the brain grow and makes it work better.

Sports and Exercise reduces the levels of stress hormones in the body. At the same time, physical activity stimulates production of endorphins. These are natural mood lifters that can help keep stress and depression at bay and in this way, sports add up to the happiness too. The rise in adolescent and adult obesity has been well documented in literature as a widespread epidemic over the last two decades. According to the World Health Organization [1], globally, around 31% of adults aged 51 and older were not sufficiently active in 2008. Approximately 3.2 million deaths occur each year that are attributable to insufficient physical activity. These staggering statistics are most concerning since physical activity significantly declines through childhood and adolescence. [2] The positive influence of sports and physical activity are widely recognized as directly combatting and preventing obesity and its related health issues. Specifically, a lack of sports and physical activity has been linked to increasing physical and psychological ailments such as obesity, cardiovascular disease, high blood pressure, high cholesterol, low self-esteem, and poor mental health including anxiety and depression which tend to surface in adolescence and worsen throughout one's life.[2] Sport affects the self-esteem in many ways as strength, skills, and stamina

increase through training, and will have more confidence in own ability because we will see them visibly improve.

The purpose of this study is to examine the relationship between self-esteem and happiness with participation in sports among undergraduate medical college students of Indore district.

### Methodology

This was a cross-sectional study conducted between June to November 2022 among 206 randomly selected medical students of age 18 to 26 years of various medical colleges of Central India in Indore District. Sample size calculation was done using G\*Power software 3.1.9.2 version. The sample size estimation was done by taking 95% confidence interval, 80% power and assuming effect size 0.2. The study population was administered with google form containing Subjective Happiness Scale [3] and Rosenberg Self-Esteem Scale [4] (pre-designed, pre-tested, semi-structured questionnaires). Data was entered into Microsoft excel spread sheet and analysed using SPSS 25.0 trial version. Appropriate test of significance like chi-square and Mann-Whitney u were applied wherever necessary. The p-value of less than 0.05 was considered significant.

### Results

**Table 1: Socio-demographic characteristics of study participants-**

Socio-demographic profile	Frequency	Percentage (%)
<b>Gender</b>		
Male	89	43.2
Female	117	56.8
<b>Age (years)</b>		
18-19	35	17.0
20-21	102	49.5
22-23	58	28.2
>23	11	5.3
<b>Mean ± SD</b>	20.89 ± 1.57	

Out of 206 participants in the study 43.2% participants were Males while 56.8% were Females. Among them 49.5% belonged to 20-21 years of age, 28.2% belonged to 22-23 years of age, 17% belonged to 18-19 years of age and 5.3% belonged to >23 years of age. Mean age of participants (in years) was 20.89 with S.D. of 1.57.

**Table 2: Frequencies and Percentages of categorical variables-**

Responses	Frequency	Percentage (%)
<b>Play any sports?</b>		
Yes	143	69.4
No	63	30.6
<b>Gender wise Play of Sports</b>		
Male	72	80.90
Female	71	60.68
<b>Specify the sports you play</b>		
Cricket	18	12.6
Football	12	8.4
Badminton	63	44.0
Hockey	1	0.7
Athletics	2	1.4

Kho-Kho	2	1.4
Sanshou Wushu (Chinese martial art)	1	0.7
Swimming	1	0.7
Table tennis	19	13.3
Volley ball	15	10.5
Basket ball	9	6.3
<b>Hours per day spent in playing these sports</b>		
<1	106	74.1
1-2	31	21.7
2-3	3	2.1
>3	3	2.1
<b>Feels refreshed after playing these sports?</b>		
Yes	140	97.9
No	3	2.1
<b>Sports have any effect on self-esteem and happiness of a person?</b>		
Yes	139	97.2
No	4	2.8

Majority (69.4%) of the participants used to play sports while 30.6% did not play sports. Among those who played sports, 44% used to play Badminton, 13.3% played table tennis, 12.6% played cricket, 10.5% played volley ball, 8.4% played football and 6.3% played basketball. Remaining participants used to play hockey, athletics, kho-kho, Sanshou Wushu

and swimming. 74.1% of them spent <1 hour/day in sports while 21.7% spent 1-2 hours/day in sports. 80.90% male participants used to play sports while only 60.68% of female participants used to play sports. 97.9% felt refreshed after playing sports and 97.2% were of the opinion that sports have effect on self-esteem and happiness of a person.

**Table 3: Frequencies and Percentages of categorical variables**

Responses	Frequency	Percentage (%)
<b>If don't play any sports, then engagement in any other physical activity?</b>		
Yes	41	65.1
No	22	34.9
<b>Mention the physical activity you are involved in other than sports</b>		
Walking/Jogging	16	39.0
Exercise	14	34.1
Yoga	4	9.8
Cycling	2	4.9
Dancing	5	12.2
<b>Hours spent per week in these physical activities</b>		
<1	3	7.3
1-2	10	24.4
2-3	3	7.3
3-4	8	19.5
4-5	8	19.5
>5	9	22.0

Among those who did not play sports, 65.1% were engaged in other physical activities. 39% of them used to go for walking/jogging, 34% did physical exercise, 12.2% did dancing, 9.8% did yoga and 4.9% were doing cycling. 61% of them spent >3hours/week while 24.4% spent 1-2 hours/week in these physical activities.

**Table 4: Mean, Standard Deviation (SD), Median and Range of SHS & RSE Scores-**

Variable	Do you play sports	Mean $\pm$ SD	Median (IQR)	p-value
SHS Score	Yes	4.823 $\pm$ 0.69	4.75 (4.25-5.25)	<0.0001
	No	3.26 $\pm$ 0.63	3.25 (2.75-3.50)	
RSE Score	Yes	27.00 $\pm$ 3.15	27.0 (25.0-29.0)	<0.0001
	No	23.65 $\pm$ 2.82	24.0 (22.0-26.0)	

Mean Subjective Happiness Scale (SHS) Score of participants, those who played sports was 4.823 with SD of 0.69. Mean SHS Score of participants those who did not play sports was 3.26 with SD of 0.63. Mean Rosenberg Self-Esteem (RSE) Score of participants, those who played sports was 27.00 with SD of 3.15. Mean RSE Score of participants those who did not play sports was 23.65 with SD of 2.82. Median Subjective Happiness Scale (SHS) Score of participants, those who played sports was 4.75 with interquartile range of 4.25- 5.25. Median SHS Score

of participants those who did not play sports was 3.25 with interquartile range of 2.75- 3.50. Median Rosenberg Self-Esteem (RSE) Score of participants, those who played sports was 27.0 with interquartile range of 25.0-29.0. Median RSE Score of participants those who did not play sports was 24.0 with interquartile range of 22.0- 26.0. Both Subjective Happiness Scale Score and Rosenberg Self-Esteem Score are found to be statistically significant (p-value <0.05) among participants those who played sports.

**Table 5: Tests of Normality**

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
SHS SCORE FINAL	0.092	206	0.000	0.983	206	0.013
RSE SCORES	0.109	206	0.000	0.985	206	0.024

a. Lilliefors Significance Correction

Since the p-value of SHS Score and RSE Score are <0.05, it is interpreted as a significant deviation from the normal distribution and it can be assumed that the sample data are not normally distributed.

### Discussion

The aim of the present study was to find if there was a difference in self-reported measures of self-esteem and happiness between those who participated in sports and those who did not. The target population was undergraduate medical college students of Indore district.

In the present study female participants (56.8%) were more than male participants (43.2%). Whereas in the study done by Murat Turan et al [5], 64.9% were male participants and 35.1% were female participants and study done by Omer Faruk Yazici et al [6], 61.1% were male participants and 38.9% were female participants. In our study, 49.5% belonged to 20-21 years of age and mean age of participants (in years) was  $20.89 \pm 1.57$  years. Almost similarly in the study done by Murat Turan et al [5], 48.3% participants belong to 21-23 years of age whereas in a study done by Linz Fitzpatrick et al [7], Mean age of the study participants was  $43.59 \pm 13.03$  years. In the present study 69.4% played sports and 30.6% did not play sports, in comparison with the study done by Omer Faruk Yazici et al [6], where only 55.1% played sports and 44.9% did not play sports. Whereas in the study done by Murat Turan et al [5], majority (80.5%) played sports and 19.5% did not play sports. In the present study, 80.90% male participants played sports while only 60.68% female participants played sports. In our study 44% of those who played sports prefer to play badminton whereas in the study done by Murat Turan et al [5], 54% played individual sport/athletics. In the present study Subjective Happiness Scale (SHS) Score of

participants, those who played sports was 4.823 with S.D. of 0.69 and SHS Score of participants those who did not play sports was 3.26 with S.D. of 0.63 respectively which is found to be statistically significant as well. It is comparable with the study done by Omer Faruk Yazici et al [6], where mean SHS Score of participants, those who played sports was 4.56 with S.D. of 1.97 and SHS Score of participants those who did not play sports was 2.89 with S.D. of 1.69 respectively. In another study done by Ceyhun Alemdag et al [8], SHS Score of participants those who played sports was 5.04 with S.D. of 1.14 and SHS Score of participants those who did not play sports was 4.42 with S.D. of 1.13 respectively. In a study done by Jotika Judge [9], SHS Score of participants, those who played sports was 4.3 with S.D. of 1.02 and SHS Score of participants those who did not play sports was 2.925 with S.D. of 1.07 respectively. All of these studies show statistically significant findings. Whereas in the study done by Murat Turan et al [5], SHS Score of participants, those who played sports was 3.68 with S.D. of 0.87 and SHS Score of participants those who did not play sports was 3.73 with S.D. of 0.65 respectively which is found to be not significant.

In this case, it is thought that the happiness levels of the participants vary depending on different factors. In the study done by Omar Faruk Yazici et al [6], where SHS Score of participants, those who played team sports was 4.46 with S.D. of 1.98 and SHS Score of participants those who did play individual sport was 3.07 with S.D. of 1.81 respectively.

In the present study, Rosenberg Self-Esteem Scale (RSES) score of those who played sports was  $27.00 \pm 3.15$  (SD) and RSES score of participants those who did not play sports was  $23.65 \pm 2.82$  (S.D.) respectively which is found to be statistically

significant as well. Similarly, in a study done by Nandini Mathur Collins et al [10]., Students with prior sports participation had a higher RSES score of  $28.19 \pm 5.88$  (S.D.) than students with no prior sports participation with RSES score of  $24.96 \pm 4.73$  (S.D.). And in a study done by Dagmar Nemček et al [11]., found significantly higher RSES in the groups of actively living people (Elite & Competitive Athletes and Recreational Athletes) comparing inactive group of respondents. Furthermore, they found that there do not exist significant differences in SE between ECA and RA. Whereas in a study done by Anne Bowker [12] found that sports participation had strong positive effects on self-esteem, although these effects were strongest for physical self-esteem, the relationship between sports participation and general self-esteem was mediated by physical self-esteem. In a study done by Urska Dobersek et al [13]., an independent t-test suggested a statistically significant difference between athletes and non-athletes on self-esteem, where athletes  $25.57 \pm 3.62$  (S.D) scored higher on RSES compared to non-athletes  $24.29 \pm 3.86$  (S.D). In a study done by Tara Kay Monzo [14], they found that the sport participant group had a higher mean SE score (30.3) than the non-sport participant group (27.5), also Frankie R Guzman [15] found in their study that the sport participant group had a higher RSES score of  $27.58 \pm 5.47$  (S.D) than the non-sport participant group with  $26.05 \pm 5.44$  (S.D), however the difference was not statistically significant at the .05 level in both these studies. Similarly, in a study done by Mohammed Abou Elbagd et al [16], the physical activity and self-esteem showed good positive statistically significant correlation for the study population with the mean of self-esteem scores for the whole study sample was ( $33.03 \pm 3.82$ ) and the scores ranged from 25 to 40, which reflect a normal to high self-esteem level. Similarly, in a study done by Md. Dilsad Ahmed et al [17]., they found that there was a significant difference in the RSES scores for active students who participated in sports  $21.29 \pm 3.83$  (S.D) than the inactive students  $16.60 \pm 3.17$  (S.D). In a study done by Carly B. Slutzky et al [18], results suggested that the relations between time spent in sports and children's sport self-concept depends, in part, on whether the time was spent in team or individual sports. And in a study done by Hanani Abd Moin et al [19], it was also found that those who engaged more in sports would have higher self-esteem than those who engage in less sports activities.

### Conclusion

The present study revealed that subjects who participated in sport reported higher levels of self-esteem and happiness, lending support to previous studies on all different age groups. Current study indicates positive associations between sport participation and subjective happiness/self-esteem.

Subjective happiness scale score and Rosenberg self-esteem score are found to be greater among those who play sports compared to those who do not play sports and both are statistically significant ( $p < 0.05$ ).

There is a concrete positive association of sport participation and subjective happiness/self-esteem. As per National Crime Records Bureau's (NCRB) Accidental Deaths & Suicides in India (ADSI) report, over 13,000 students died in 2021 in India at the rate of more than 35 per day (rise of 4.5% from year 2020). [20] Therefore, promotion of participation in sports among college students is necessary to enhance self-esteem and to ensure good mental health of the future generation. Study shows less participation of girls in sports and therefore it is recommended to do a gender wise extrapolated study for future purpose.

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