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## A comparison of psychological factors between individual and team sports athletes

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### Abstract

Sports psychology is the scientific study of the mind, personality, and behaviours as they relate to athletic accomplishment and strength training. Because the mental constraints of severe competition might be tremendous, it isn't a crucial part of every athlete's training programme. Psychosocial considerations have a significant impact on athletes' success and well-being. Athletes, especially when they think they are not doing well or attaining their full potential, require positive support from teammates, coaches, parents, and friends. Social assistance is a multifaceted notion that includes a large variety of prospective suppliers as well as various sorts. Emotional support, practical support, informational support, and confidence support are all examples of supportive social behaviours. On the other side, social integration refers to the structure and quantity of social ties, such as network size and density, as well as the subjective impression of embeddedness. In recent years, various research have been undertaken on the association between chosen psychological characteristics among individual and group sports participants. However, there is a research gap, thus we're doing this study exclusively at the state level to achieve the study's goals. As a consequence, 600 women, ranging in age from 17 to 22, will be chosen using a stratified random selection approach from various individual and team sports. The researcher will select 300 athletes from team sports and 300 players from individual sports. The total number of competitors in Inter Collegiate competitions over the last five years determines the sample size.

**Keywords:** Psychological factors, sports, aggression

### 1. Introduction

Physical education psychology focuses on the general methods and techniques of knowledge, motivation, play, progress, and development in sports, so its issues become more or less basic. Besides, skill acquisition, greater emphasis is laid on psychological training, coping strategies, interventions and mental skills. Both in activity and psychological dimensions, the sports perspective are much more specific than physical education scenario. The psychological problems of a sportsperson who performs are more serious, subtle and complex than of those who participate in physical activity for mere amusement, vigour, health, relaxation and play. Due to this 'activity behaviour' has been subjected to more rigorous research in context of sports rather than play or exercise over the last four decades. Many studies conducted on the determinants of elite sports performance reveals significant differences in physiological capacity and skill efficiency of athletes but in their psychological makeup and mental dynamics their potential for success is determine by psychological factors. Sports Psychology refers to varied aspects of the human mind and how they affect the body. Sports Psychology is greatly determines of winning and losing at the finest level. Athletes, who have the right sport psychology, perform consistently better in varying conditions. An athlete has to deal well with external and internal pressure, in order to focus on the competitions. Professional sportspersons receive support from trained coaches who are trained in sports psychology and motivation.

Physical education is not a distinct, tangentially related field; it is the part of education that involves, or is primarily based on, movement. This is an important method of education since it provides one perspective on educating the whole person, who is made up of several interconnected functional units rather than many distinct faculties. Physical, emotional, and social factors must all be taken into account. When properly taught, physical education will contribute more to general education goals than any other subject; not more to each goal than

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any other subject, but more to all goals than any other subject. There is a common aim in all aspects of modern physical education: to make life more lively, pleasant, and complete. Psychology and behaviour are inextricably linked. Psychology happens everywhere there is behaviour. Sports and physical education are both an art and a science. It is concerned with motion, interaction, play, and reaction. Physical education is an activity-based programme. Its aim is to build a person's heart and its purpose is to improve health and fitness. Physical education has a joyful, recreational, and calming aspect, and it serves an educational purpose. Sports psychology is a sub-discipline of psychology that investigates human behaviour in sports on the playing field during practise and competition in order to enhance performance efficiency. As a result, we might conclude that it is a combination of exercise and sports psychology.

Psychology has been an integral component of physical educators' educational programmes since the beginning of scientifically organised physical education. Education and psychology are like twin sisters; you can't have one without the other. Awareness of general behavioural processes is needed to streamline educational processes. Individual variations in growth and development, motor ability learning, general innate tendencies, emotions, heredity, and environment are all addressed by psychology in physical education. Specific characteristics of a person's different attributes such as personality, focus, arousal, anxiety, anxiety regulation, cognitive intervention, and motivation are the ingredients of an individual, according to sports psychology. Sports sociology, on the other hand, is concerned with a person's social well-being in terms of social relations, interactions, and phenomena related to sports. Since communities are clearly made up of people, psychology and sociology play a complementary and overlapping role. As a result of this phenomenon, a field of study known as sports social psychology is essential. Psychologists may assist coaches in determining the most effective strategies for improving motivation and cohesion within the group, which may include enhancing the group leader's positive influence; developing athletes' independence and establishing rules and improving decision-making processes and communication among athletes during competition.

## 2. Studies on Athletes Anxiety, Group Cohesion, Sports Aggression

Everybody has the danger of encountering mental issues at each phase of his life, like pressure, gloom and nervousness (Ivanović *et al.*, 2015) [7]. Nervousness is frequently capable by competitors, both beginner and first class sports competitors, either youthful or develop competitors. For this situation, despite the fact that a competitor has buckled down, prepared a lot a develop methodology, the competitor will be unable to show ideal execution. For this situation, the emphasis on actual preparing and the correct system alone can't urge a competitor to show ideal execution. Mentors and competitors should know that mental perspectives can likewise assume a significant part in competitor execution. Brain science is considered as one of the critical elements to accomplish ideal execution and prosperity in sports (Desrosiers, 2017) [4].

In accordance with the portrayal above, 80% of expert competitor triumphs are dictated by mental components, which have a vital part in aiding the competitors seek after high accomplishments (Asamoah *et al.*, 2017) [2]. Jimmy Connors, a previous world number one likewise expressed

that 95% of expert tennis games are mental variables (Martignetti *et al.*, 2020) [14]. Mahoney and Avener recommended that if a competitor needs to accomplish ideal execution, he should can defeat his nervousness (Stambulova *et al.*, 2020) [21]. Tension is a feeling that emerges as a result of the understanding and evaluation of the current circumstance. Nervousness related with an opposition or cutthroat circumstance is normally alluded to as serious tension (Mueller, 2020) [16]. Actual indications emerge because of the impact of mental side effects, which at that point cause tension in the competitors prior to contending in a game and hence forestall him to show his best presentation (Paradis *et al.*, 2014) [18]. Jansen *et al.*, (2021) [8] carried out an investigated on the personality traits of youth kabaddi athletes from across India's Navodaya Schools. Loughhead (2017) [12] studied the correlation between personality traits and the degree of achievement of success in football and futsal athletes. The primary objective of this study was to analyse the correlation between personal characteristics and results. A random sample was used to pick a group of athletes (both male and female) who had previously played in the 2010-2011 and 2011-2012 seasons in the Ardehstanoa Province football and futsal seasons. Judge *et al.* (2016) [9] led an unmistakable and near investigation of cutthroat individual and group competitors' character characteristics. The point of this investigation was to clarify the character attributes of expert competitors in both individual and group activities. Martignetti *et al.*, (2020) [14] brought out the results of his study on players who experience anxiety, their subsequent performance drive, and personality patterns. It sought to compare the players' personality traits, as well as their level of fear, in participation, to discover which is a better predictor of basketball success.

Amjad *et al.* (2018) [1] analysed the connection between individuals' view of gathering union and beginning status in world class volleyball crews. The after effects of the investigation uncovered that the type of the union beginning status relationship was directed by the variable of accomplishment. Guerrero and Fernandes (2021) [5] inspected contrasts in relational fascination among starters and nonstarters of tip top male volleyball crews and the connection between's relational fascination and groups' last spot. Haugen *et al.*, (2021) [6] decided the relationship with social and errand attachment in understudy groups. After effects of an exploratory investigation of connections between work-bunch qualities and the social and errand attachment of 18 business understudies occupied with group class projects. Lafferty *et al.* (2017) [11] developed the Perceived Performance in Team Sports Questionnaire (PPTSQ) based on the nature of collective goals in team games to measure the individual member's impression of their group performance. Lyons (2020) [13] translated the modified Group Environment Questionnaire (GEQ) and "the Youth Sport Environment Questionnaire (YSEQ) into Norwegian and conducted factor structure and reliability analyses using independent clusters model confirmatory factor analysis (ICM-CFA) and exploratory structural equation modelling, as well as examine differential item functioning (DIF) as an indicator of sex. 33% of the participants in the GEQ were female, with a mean age of 18.7 years. Mielgo *et al.* (2017) [15] devised a team-based mindfulness meditation program for intercollegiate soccer players to foster a sense of team unity.

Pacewicz *et al.*, (2020) [17] looked at how anxiety affects both school players and non-players. The objective of the present research was to study if there were differences in anxiety

levels amongst school children who played sports and those who did not. In terms of anxiety, there will be a big gap between school players and non-players. Martignetti *et al.*, (2020) [14] conducted a study in South Karnataka that compared and analysed the variations in selected physiological variables and performance of physical education students. Physical education colleges in South Karnataka studied physiological tests between athletes and non-athletes. Judge *et al.* (2016) [9] conducted research to determine the relationship and differences in Adjustment, Goal Orientation, and Attitude toward physical activities among Haryana's rural and urban college students. According to Park *et al.* (2020) [19] several countries are concerned about "social violence and hostility among youths. Despite significant efforts aimed at shaping a model behaviour pattern, recurrent disruptions and numerous antisocial vices among youths in our society may be the result of a failure to recognise the risk factors associated with violence. Martignetti (2020) [14] showed an instance of far more moderate physical violence, or non-violent, physical violence on screen. Coordinated an examination to look at the degrees of state and characteristic tension in smokers and non-smokers. Stambulova, and Wylleman, (2019) [20] conducted a comparison analysis of anxiety, aggression, self-confidence, achievement, motivation, socioeconomic status, academic achievement, and intelligence among national level boxers, wrestlers, and judokas throughout India's topography

### 3. Methodology

This research tries to generate fresh information. The first step is to identify a topic of interest to the researcher. The researcher selects a topic and prepares research questions based on that topic. Then, tries to gather information from her own observations. To answer a researcher's questions, he or she can use a variety of research approaches. This could be an interview or an observation, or any other means of gathering information. In this phase, the researcher is looking for patterns in the data. It's at this point in the inductive research process that the theoretical framework is constructed using the data and patterns that have been discovered. This shows that inductive research is conducted from the bottom up. A good example of the inductive approach in research is the Grounded Theory of Glaser and Strauss. Due to Grounded theory's emphasis on a circular process of developing new knowledge, this is the primary reason. In the beginning, a researcher approaches the subject matter with an open mind, unbiased, and with no preconceptions about the outcome. He focuses mostly on the context in which he does his research, and the evidence he collects leads him to new theories. The current research is a mix of inductive and deductive reasoning. In that, the researcher is trying to look for patterns in the variables of interest among participating sportswomen of Rajasthan and which is deductive reasoning in nature. Secondly, the we also test a few hypotheses which make this an inductive study in nature. We also delimit our research to women players of 17-22 years in age. The study is also restricted to intercollegiate players from individual and team sports and to players of the Rajasthan state only.

### Data Types and Collection

The current research is quantitative in nature and we carry out a cross-sectional investigation into the sports achievement motivation, sports aggression, sports competition anxiety, and group cohesion among team and individual players. The researcher observes the variables of interest using pre-

validated constructs in players who volunteered for the study. That is, the researcher collected primary data. We recruited participants based on non-probability quota sampling. In a quota sampling, a quota is assigned to each group of interest. In the case of present research, we recruited 300 individual and 300 team women players from selected Universities.

**Table 1:** Games of interest

Sport category	Sports
1. Individual sport	<b>Contact games</b>
	Boxing
	Wrestling
	<b>Non-Contact games</b>
	Badminton
	Table Tennis
2. Team sport	<b>Contact games</b>
	Handball
	Kabaddi
	<b>Non-Contact games</b>
	Cricket
	Volleyball

### 4. Data Analysis

Data was collected from 600 individual and team players, 300 each (Table 2). As indicated in Table 1, we collected data from sportswomen of eight games, e.g., Boxing, Wrestling, Badminton, Table Tennis, Handball, Kabaddi, Cricket, and Volleyball.

Table 2 indicates the number of players of each of the selected sports. The researcher made sure to recruit enough participants from each of the sports. The number of participant in a single sport ranged between 67 to 84 players. It was also decided that players from eight Universities that organise intercollegiate games will be recruited.

**Table 2:** Number of players across eight selected sports

Strata	Sports	Number of players
Individual	Boxing	67
	Wrestling	68
	Badminton	82
	Table Tennis	83
Subtotal		300
Team	Handball	80
	Kabaddi	70
	Cricket	69
	Volleyball	81
Subtotal		300
Total number of players		600

Cronbach's alpha is the most widely used tool to check for internal consistency of a construct in social science research. A Cronbach's alpha score ranges between 0 to 1 and a score of 0.7 or above indicates that the construct is reliable and should give consistent results in repeat research. Kumar (2015) [10] developed a parameter to determine what is a valid Cronbach's alpha score in research related to social sciences. A score of less than 0.6 is not acceptable and any conclusion based on findings from such instruments should not be relied upon. A score of 0.61 to 0.7, according to Kumar (2015) [10], is acceptable but not desirable. It should be pointed out here that many researchers would argue with Kumar (2015) [10] about their acceptable Cronbach's alpha score. Most researchers consider 0.7 or above as the minimum requirement in research. Similarly, a score of between 0.71 to 0.9 is good and that above 0.9 is considered excellent. In this study, we only consider a Cronbach's alpha score of 0.7 or above as valid.

**Table 3:** Cronbach’s Alpha

Scale	Total N of items	N of deleted items	N of retained items	Cronbach’s Alpha
Sports Aggression Inventory (S.A.I.)	25	7	18	.698

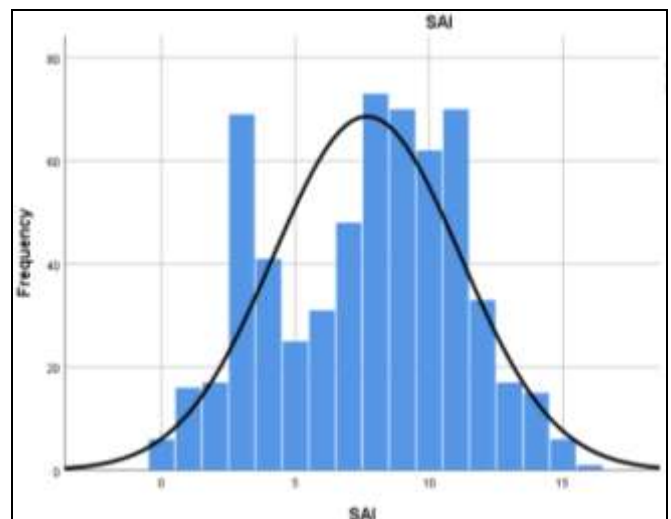
**Table 4:** Item-Total Stats – Sports Aggression Inventory (SAI)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SAI01	7.26	10.573	.424	.670
SAI02	7.03	11.510	.135	.701
SAI03	7.06	11.618	.097	.705
SAI07	7.24	11.279	.195	.695
SAI09	7.37	10.972	.326	.681
SAI12	7.28	10.868	.332	.680
SAI13	7.24	10.672	.389	.674
SAI14	7.33	10.853	.350	.678
SAI15	7.25	10.790	.351	.678
SAI16	7.33	11.179	.242	.690
SAI18	7.36	10.754	.393	.674
SAI19	7.16	11.312	.183	.696
SAI20	7.44	11.682	.107	.702
SAI21	7.31	11.130	.254	.689
SAI22	7.25	11.023	.276	.686
SAI23	7.41	11.484	.165	.697
SAI24	7.16	10.470	.450	.667
SAI25	7.02	10.803	.366	.677

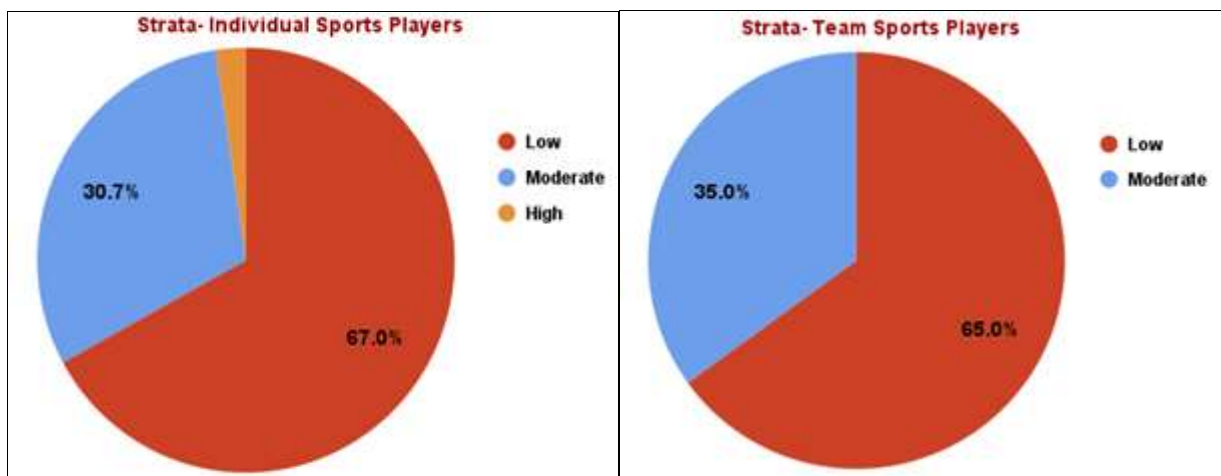
Sports Aggression Inventory (S.A.I.) is a measure of the respondent’s intention to hurt members of the opposing team. The original construct consists of 25 dichotomous items (between ‘yes’ and ‘no’). Some of the items in the construct is keyed ‘no’ and others are keyed ‘yes’. For each correct response, we credit a score of 1. The higher the score on SAI the more aggressive the respondent is. Since we had to delete 7 items in the original construct, SAI can range between 0-18 only. Table 5 indicates what constitutes a low, moderate and high level of aggression. A score of less than 10 indicates low levels of aggression while those between 10-14 and above 14 indicate moderate and high levels of sports aggression (intention to hurt the opposing team), respectively.

**Table 5:** Levels of Aggression based on S.A.I. Score

Motivation levels	Score
Low	Less than 10
Moderate	10-14
High	15 or above



**Fig 1:** Histogram – SAI

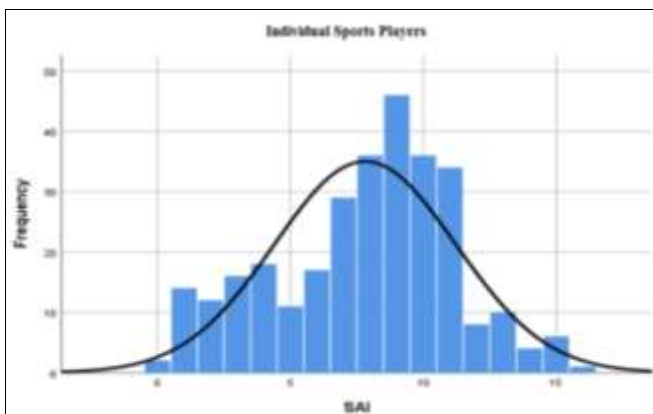
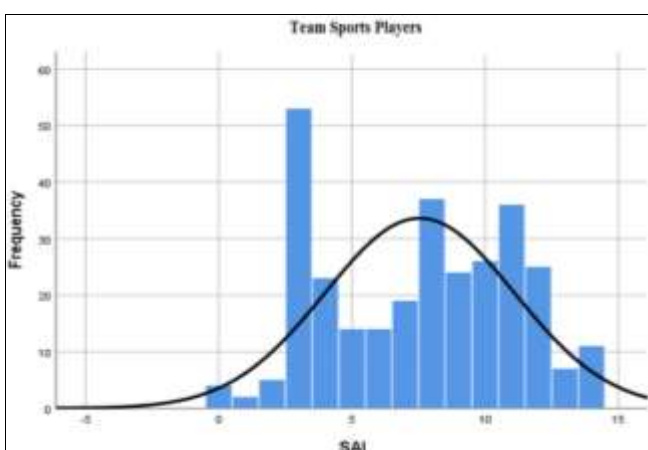


**Fig 2 and 3:** Sports aggression inventory



**Table 6:** Descriptive Stats – Individual v. Team players

		Strata	SAI
Team	N	Valid	300
		Missing	0
		Mean	7.54
		Median	8.00
		Std. Deviation	3.560
		Skewness	-.086
		Std. Error of Skewness	.141
		Kurtosis	-1.126
		Std. Error of Kurtosis	.281
		Minimum	0
		Maximum	14
Individual	N	Valid	300
		Missing	0
		Mean	7.81
		Median	8.00
		Std. Deviation	3.419
		Skewness	-.300
		Std. Error of Skewness	.141
		Kurtosis	-.408
		Std. Error of Kurtosis	.281
		Minimum	0
		Maximum	16

**Fig 4:** Histogram of Sports Aggression Inventory – Individual**Fig 5:** Histogram of Sports Aggression Inventory Team

Before we test the hypotheses, it might help to first get a look at the differences in the response of individual and team players. Figures 2-3- illustrate the findings in terms of percentages in pie charts. Table 6 presents the descriptive findings like mean, standard deviation and skew for individual and team players for all four variables. Figures 4 and 5 illustrate the distributions over histograms and normal curves. One could observe that the differences in the mean

values of aggression for individual and team players are largely similar. Similarly, the standard deviation for each of the variables for both individual and team players are similar too. In the next section, we would carry out a t-test to check if these differences, though minor, are statistically significant. That is, whether we can expect to encounter similar differences between individual and team players of those not observed in the sample.

## 5. Conclusion

Sports psychology, a relatively new study, is one of the fastest-growing fields in sports performance. Professional sports team owners want to get their money's worth out of their investment in their sportsmen. Every major sports team has a sports psychologist on staff to help its athletes overcome mental difficulties, slumps and general reductions in performance.

"Sports psychology" simply refers to how psychologists put their theories into action while playing a specific sport. It's not just for professional athletes; amateur athletes and teams can also profit from it. Sports psychology is evident even at the greatest levels of competition. Everyone from athletes to coaches to parents to administrators to sports medicine experts can benefit from sports psychology. Soccer, Football, Golf, Tennis, Judo, Snowboarding, Fencing, and Cricket are all examples of sports that utilise it. There are numerous non-sports applications for sports psychology, including medicine, education, business, politics, and organisational development. Globally, its benefits and use are spreading at an ever-increasing rate. It is never been more exciting to take advantage of sports psychology's advantages.

In the present research, we measured the sports aggression of 600 sportswomen from various Universities of Rajasthan – 300 individual and team players each. We used pre-validated constructs to measure the variables of our interest and compared the results for individual and team players. In descriptive studies, we found that there is no significant difference in the aggression level among both individual and team sportswomen. Sport coaches of these Universities could look for intervention activities to motivate the players and strengthen the team bond as well as to activities that help

players during the sports competition. Future studies could also investigate the effectiveness of popular sports intervention activities.

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