COMPARISON OF STATE TRAIT ANXIETY OF CRICKET PLAYERS AT DIFFERENT LEVELS OF PARTICIPATION

Abhishek Kumar,[Ψ δ] MPEd, C.P. Singh Bhati [Ψ] PhD, Manish Shukla, [Ψ] MPEd

Ψ. Lakshmibai National Institute of Physical Education, Gwalior (INDIA)-474002.

δ. Address correspondence to Dr. C.P. Singh
Lakshmibai National Institute of Physical Education, Gwalior (INDIA)-474002

ABSTRACT

Background

Cricket is a popular sport in India and almost all of the states takes part in it. Psychological skills have always played an important role in athletic performance. Anxiety is one of several conditions, such as mood, which can often occur without an identifiable triggering stimulus. So it is that, unlike fear, is emotionally responsive to the concerns of a perceived threat.

Objective

Our goal was to analyze the state trait anxiety domain of cricket players at District, State and National levels with the help of state trait anxiety inventory.

Material and Method

In this study, 120 male (60 Batsmen and 60 Pace bowlers) were selected from various sports academies / training centres in India. The state trait anxiety (STAI-40) was used to measure the domains of state trait anxiety inventory. The one-way MANOVAs (Multivariate Analysis of Variance) has been used to compare the differences among psychological variable at different levels of batsmen and pace bowlers

Results

National level batsmen scored high in state anxiety as compared to district level (MD=9.35; $p<0.05$); and district level (MD= 6.60; $p<0.05$) batsmen. State level pace bowler scored high on state anxiety and close to significant (MD=7.05; $p>0.05$) as compared to national level pace bowlers. National level batsmen scored high on trait anxiety (MD= 8.10; $p<0.05$) as compared to district level. Different levels of Pace bowlers and batsmen did not differ significantly on different variables.

Conclusion

Our study shows that certain aspects of state anxiety are associated with cricket players at different levels of participation (district, state and national). State level pace bowlers showed high level and close to significant on state anxiety variable while national level batsmen showed greater state anxiety than district and state level batsmen. National level batsmen showed greater trait anxiety than other level batsmen. As the game of cricket requires a variety of ways to fully define the concept of "Form", other state trait anxiety forms such as irritability, fear, muscle tension etc. and coaching features that should focus on how to remove these forms of anxiety during and pre competition.

Keywords: Cricket; Anxiety, STAI-40.

Introduction

Cricket is a popular sport in India and almost all of the states takes part in it. A large number of   players take up professional cricket but there is a limitation of scope for all the budding professionals (Harjit, 2017). Cricket occupies a significant place among all the other games or sports. It is a great sport and a great energetic game, giving happiness and enjoyment, which requires training and a level of commitment. In cricket, some of the psychological characteristics in order to get the top gear to achieve all of the properties (kumar and prabhakaran 2011).

Psychological skills have always played an important role in athletic performance. Anxiety are multi-layered in two different ways. Just like all the other feelings, Anxiety, which have a two situations and they are state and trait. State anxiety is a specific situation when the person makes a mental assessment of some type of threat and the trait situation arises in response to a perceived threat but it differs in its intensity, duration and the range of situations in which it occurs. In a state of distress is directly in an emotional state characterized by anxiety, fear, tension, and increased physiological arousal (Tanwar and kumar, 2014; Hatfield, 2021).

Anxiety is one of several conditions, such as mood, which can often occur without an identifiable triggering stimulus. So it is that, unlike fear, is emotionally responsive to the concerns of a perceived threat. In addition, fear is associated with a specific escape and avoidance behaviours, while the anxiety is associated with situations that are perceived as uncontrolled, or the inevitable (Ohman, 2000). Spielberg (1972) shows that trait anxiety is a situation where anxious one feels in general and, on the part of the state, as well as how much you feel uncomfortable at a particular moment and particular situation. Anxiety in sport is mainly created of what Spielberg calls the fear of failure. This is in the track and field events; the athletes are not only scared of losing to the competition, and if they don't work as you would expect from them. (Khan, 2016).

It is well known that competition will lead to the problem of the different levels prior to and during the event. Level of competition anxiety amongst cricket players was taken up for research purpose to find out if it was team specific. Although the role of the state and trait anxiety has been extensively studied in the winning success in other sports and cricket as well and they are little studied too. Therefore, our purpose was to investigate the difference in state trait anxiety domain among cricket players at different participation levels of pace bowlers and batsmen (District, State and National level).

Methods & Materials

Participants

For this study, 120 male cricket players (60 Batsmen, 60 Pace bowlers) aged 18-25 yrs from various sports centres / training facilities in especially northern part of India. The process of hiring included 20 participants from each of the three participation level (District, State, and National) for both batsmen and pace bowlers category. Written informed consent was obtained from all hired subjects after explaining the purpose of the

study and the procedures being adopted for the study. The participants were asked to express his or her point of view, and no doubts were there while given their answers at the time of filling up of questionnaire. The study was conducted in accordance with the principles set out in the declaration of helsinki.

Test administration

In the present study, we used a 40-item State trait anxiety inventory (STAI-40), first developed by Speilberger et al., 1983. This psychological questionnaire measures two domains of state-trait anxiety inventory: State anxiety and trait anxiety. Each participant were asked to answer a set of 40 items on 4-point Likert scale, with responses being (1) Not at all , (2) somewhat, (3) moderately so and (4) very much so. Appropriate instructions were given to all participants or cricket players through the process of recording their responses to STAI-40. Prior to the filling of the inventory; the evaluation of head had explained each and every items of STAI-40 and responded to the issue, if any participants had. The participants were given sufficient time in which to record their answers to the questions. All the tests were carried out at the training bases of a leader who did not see the allocation of interventions throughout the study.
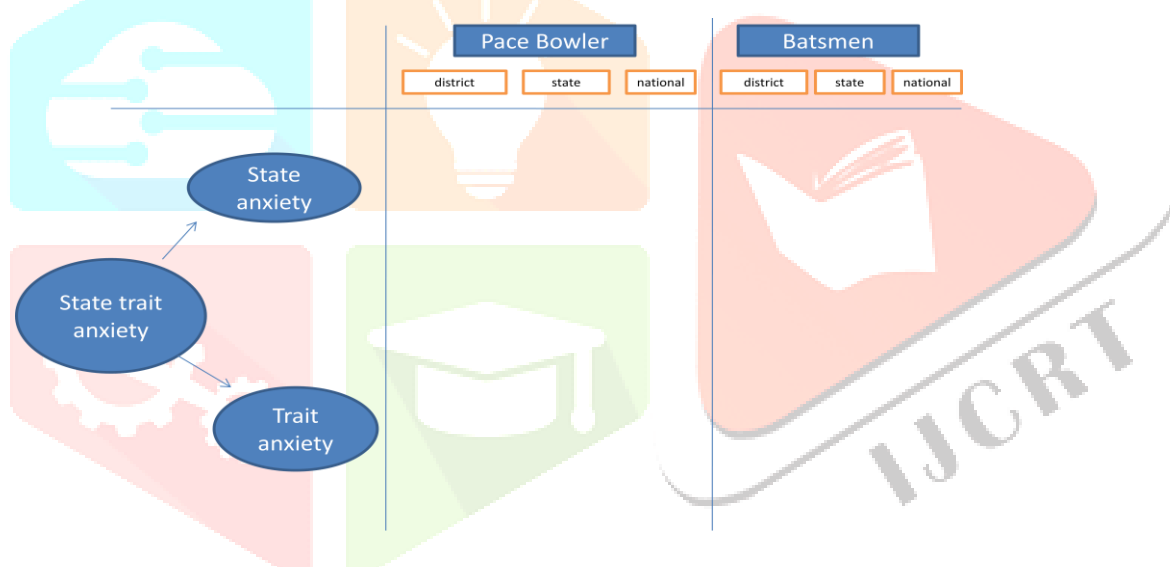

Figure no.1 Design of the present study

Statistical analysis

Statistical analysis was performed using SPSS v22 (IBM inc., Chicago, USA). Descriptive features included mean ± SD for all categories. According to the STAI-40, state trait anxiety is considered to be a subtle factor that includes such domains as state anxiety and trait anxiety; and since our study was designed for comparative analysis of state-trait anxiety domains among cricket players at different levels, so MANOVA (Multivariate analysis of variance) was utilized to compare among both batsmen and pace bowlers at three levels of participation: district, state, and national. $P<0.05$ was considered statistically significant.

Results

As per the objective of present study, we performed the statistical analysis as shown in the figure 1. The descriptive characteristics (mean ± standard deviation) of both the categories i.e., batsmen and pace bowlers at three different levels are presented in table A1 (appendix 1).

Table no.1 Multivariate statistics for state trait anxiety variables of Pace Bowlers and Batsmen at different levels

Group	Box's M Test		Wilk's λ			Partial eta squared	Power
	F	P value*	Value	F	P value*		
Pace Bowlers	1.467	0.185	0.871	2.008	0.098	0.067	0.586
Batsmen	0.677	0.668	0.779	3.727	**0.007**	0.117	0.874

F=F-statistics
*P-value in bold face indicates significance at 0.05 level of significance.

The results of multivariate tests performed on state trait anxiety variables at different levels of pace bowlers and batsmen are presented in table 1. The equality of covariance matrices was assessed using the Box's M test which yielded statistical insignificance. This means that the covariance matrices were equal, which is an important assumption for the application of multivariate analysis. The error variances of all the state trait anxiety variables were also equal for both pace bowlers and batsmen group as evaluated by Levene's test of homogeneity of error variances (Table 2). The one-way MANOVA test was statistically no significant for pace bowlers (F (4,112) =2.008; p>0.05; Wilk's λ=0.871; partial η^2=0.067; Table 1) indicating that the pace bowlers at district, state, and national levels had no differences in state trait anxiety variables. Similarly, one-way MANOVA test for batsmen resulted in statistical significance (F (4,112) =3.727; p<0.05; Wilk's λ=0.779; partial η^2=0.117; Table 1) and it meant that batsmen at district, state, and national levels had differences in state trait anxiety variables.

Table no. 2. Univariate between-subject tests for state trait anxiety variables for pace bowlers and batsmen at different levels.

Dependent Variable	Group	Levene's Test		F	P value*	Partial eta squared	Power
		F	P value				
State anxiety	Pace Bowlers	1.649	0.201	3.759	0.029	0.117	0.664
	Batsmen	1.457	0.242	6.241	0.004	0.180	0.879
Trait anxiety	Pace Bowlers	1.064	0.352	0.297	0.744	0.010	0.095
	Batsmen	0.711	0.495	6.431	0.003	0.184	0.888

F=F-statistics
*Bonferroni correction to the p-value. Corrected p-value=0.05/5. P-value in bold faces indicates significance at 0.01 level of significance.

To determine those state trait anxiety variables which produced significant differences among pace bowlers and batsmen at different levels, univariate between-subject tests were employed.

State anxiety

In state anxiety we found insignificant difference among district, state, and national level pace bowlers (F (2,57) = 3.759, p>0.01, partial η^2=0117; Table 2). Post-Hoc comparison suggested that state level pace bowlers scored high and close to significant in sate anxiety as compared to district level (Mean difference= 7.05; p>0.05; 95% CI: 14.119-0.019; Table 3; Figure 2) and national level (mean difference= 6.90; p>0.05; 95% CI: 13.969-0.169; Table 3) pace bowlers. Among batsmen, univariate test yielded insignificant results (F (2,57) = 6.241, p>0.01, partial η^2=0.180; Table 2) suggesting that the batsmen at different levels were indifferent although pairwise comparison showed difference between national vs. district level batsmen (mean difference=9.35; p<0.05; 95% CI:15.896-2.803; Table 4; Figure 3).

Table 3. Post-Hoc pairwise comparison for Pace bowlers at different levels

Variable	Level (I)	Level (J)	MD	P value*	95% C.I.
State anxiety	District	State	0.15	.999	6.919-7.219
		National	-6.90	.057	13.969-0.169
	State	National	-7.05	.051	14.119-0.019
Trait anxiety	District	State	-1.10	.881	6.620-4.420
		National	-1.75	.727	7.270-3.770
	State	National	-0.65	.957	6.170-4.870

MD= Mean Difference, CI= Confidence Interval
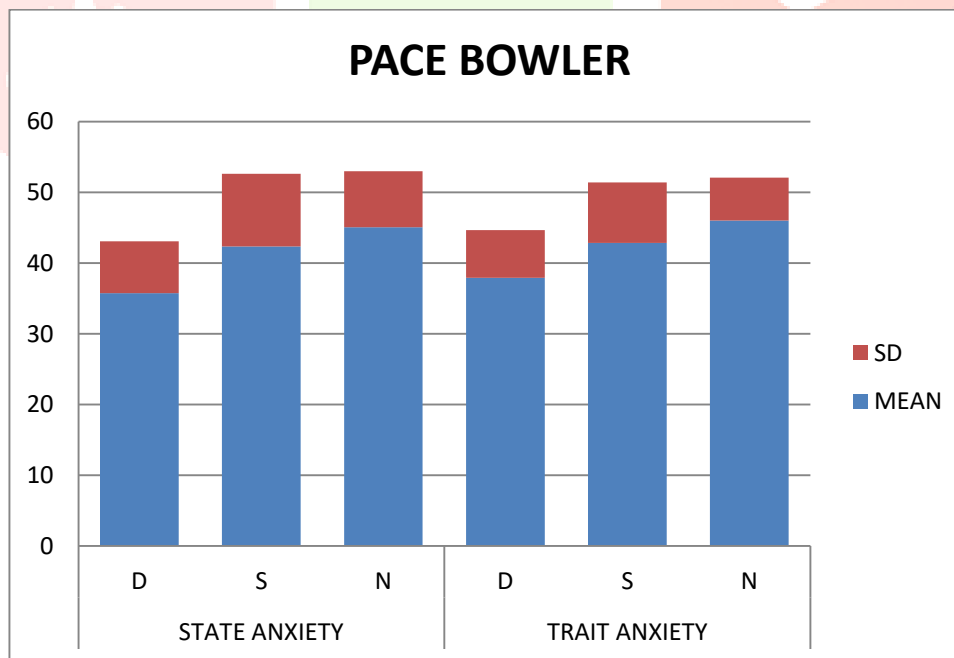*P-values in bold face indicate statistical significance at 0.05 level of significance.

Figure 2. Graphical representation of state trait anxiety dimensions of Pace bowlers.
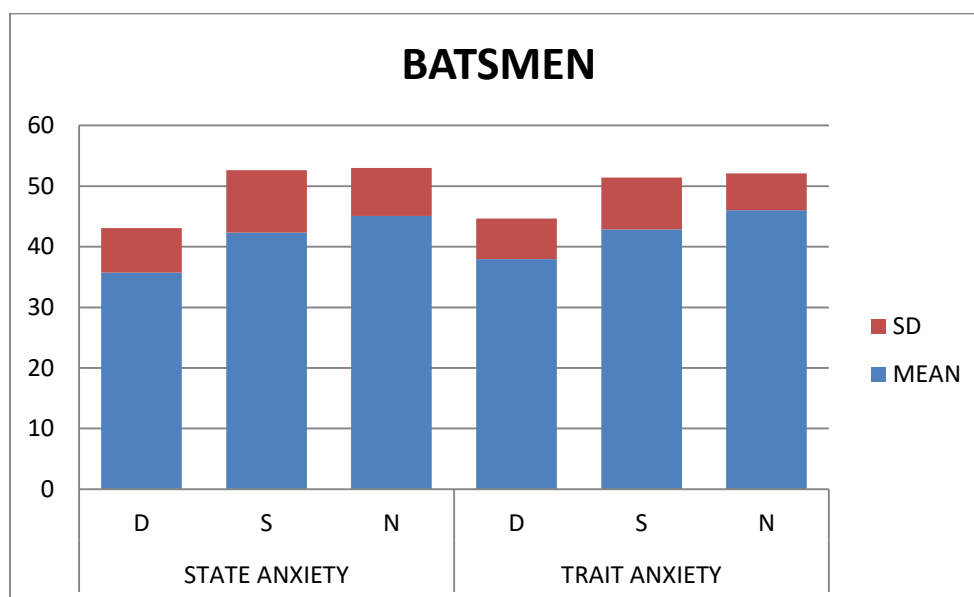
Figure 3. Graphical representation of state trait anxiety dimensions of batsmen.

Trait anxiety

In trait anxiety, pace bowlers were found indifferent among district, state, and national level (F (2,57) = 0.297, p>0.01, partial η^2=0.010; Table 2). and batsmen at different levels also differed insignificantly (F (2,57) = 6.431, p>0.01, partial η^2=0.184; Table 2). Post-Hoc comparison suggested insignificant difference between district vs. national level (mean difference=1.75; p>0.05; 95% CI:7.270-3.770; Table 3; Figure 2). There was a significant difference between district vs. national level (mean difference=8.10; p<0.05; 95% CI: 13.574-2.625; Table 4; Figure 3) batsmen on trait anxiety.

Table 4. Post-Hoc pairwise comparison for batsmsen at different levels

Variable	Level (I)	Level (J)	MD	P-value*	95% C.I.
State anxiety	District State	State	-6.60	**.048**	13.146-0.053
		National	-9.35	**.003**	15.896-2.803
		National	-2.75	.573	9.296-3.796
Trait anxiety	District	State	4.90	.088	10.374-0.574
		National	8.10	**.002**	13.574-2.625
	State	National	3.20	.344	8.674-2.274

MD= Mean Difference, CI= Confidence Interval
*P-values in bold face indicate statistical significance at 0.05 level of significance.

Discussion

Anxiety is a psychophysiological state of physical, emotional, cognitive, and behavioural components (Seligman, M. E. P., Walker, E. F. & Rosenhan, D. L. 1982). (Jooste et al. 2013) states that mental skills are the key to creating a successful cricket participation and development. The Spielberger's State-Trait Anxiety Inventory (STAI) has been widely used for assessing anxiety. This STAI anxiety is an emotional state of anxiety and fear while trait anxiety refers to tendency to assess situations as potentially Indian Journal of Movement Education and Exercises Sciences (Spielberger 1970). Cricketer of the non-elite group, reporting its

concerns, as this section had a higher level of cognitive anxiety than those who reported it as a favourable, however, these differences were not significant only in those elite groups (Jones and swain 2021). (Kumar and Singh 2013), indicated that the difference in the taught-were found in the different zones of the professional cricketers with regard to state anxiety and the value of the difference between the various zones, and the professional cricketers, with respect to the anxiety.

Perry and Williams (2021) stated that only advanced players will be informed on the more stimulating interpretations, as compared to a hypothetical progressive, skill-levels, and upgrade. It offers a high level of performance, has a small level of anxiety than those with a lower level of performance, because they have a big competition, maturity and experience of sports and games. (Tanwar and Kumar 2014).

In the present study i have taken adolescent players ranging from 18-24 yrs they can manage anxiety easily as Panza and Graupensperger (2021) stated in their study that participating in amateur sports, it can be a natural protective of the environment on anxiety and depressive symptoms. Bryan and Connor (2014) suggested in their study that the practical result of the academy, the player who thrives in transition, the fact that the elite cricketer among other things to develop an awareness of the choice of the factors that can affect the lives of people, especially among the coping strategies, to speak and social support.

In the present study on cricket sport, it is a team game and every players of anxiety level can affect whole team and results. In this research, defend by the study, the idea was put forward to the early detection of a violation can lead to working together, and at the individual level, it can cause discomfort for a better experience, a better society, the improvement of the team, and at the communication level (Sopa and Pomohaci 2020).

Conclusion

Our study shows that certain aspects of state anxiety are associated with cricket players at different levels of participation (district, state and national). State level pace bowlers showed a high level and close to significant on state anxiety variable while national level batsmen showed greater state anxiety than district and state level batsmen. National level batsmen showed greater trait anxiety than other level batsmen. As the game of cricket requires a variety of ways to fully define the concept of "Form", other state trait anxiety traits such as irritability, fear, muscle tension etc. and coaching features that should focus on how to remove these forms of anxiety during and pre competition.

The findings of this study should be interpreted in the light of certain limitations. The sample size in our study was small, although we obtained significant differences in multiple comparisons. The age of the different levels of the players was not recorded and analyzed, although the age group for this study was 18-25 years. As age brings maturity, state trait anxiety situations can be differ among experienced athletes.

References

1. Bryan, C. (2014). *Stressors that adolescent males face when making the transition from Academy cricket to Professional cricket* (Doctoral dissertation, Cardiff   Metropolitan University).
2. Hatfield R. (2021). Difference Between State and Trait Anxiety. Retrieved through https://www.livestrong.com/article/98672-differences-between-state-anxiety-/

3. Harjit K. (2017). Comparison of sport competition anxiety of university cricket (women) players. International. *Journal of Physical Education Sports Management and Yogic Sciences.* Volume 7 Issue 4 ISSN 2231-1394.

4. Jones, G., & Swain, A. (2021). Predispositions to experience debilitative and facilitative anxiety in elite and nonelite performers. *The Sport Psychologist*, *9*(2), 201-211

5. Kumar S. & Prabhakaran J. (2011). A COMPARATIVE STUDY OF THE PSYCHOLOGICAL PROFILES OF RAJASTHAN AND MADHYA PRADESH NATIONAL AND INTERNATIONAL LEVEL MALE CRICKET PLAYERS. *International Journal of Sports Sciences and Fitness, 2011.*

6. Khan M.A. (2016). COMPARATIVE STUDY OF PSYCHOLOGICAL PARAMETERS BETWEEN RURAL AND URBAN AREAS BOYS OF INTER-COLLEGE CRICKET PLAYERS. *INTERNATIONAL RESEARCH JOURNAL OF PHYSICAL EDUCATION AND SPORTS SCIENCES,* Volume 3 Issue 1 ISSN: 2394-7985.

7. Kumar, M. M., & Singh, V. (2013). State and Trait Anxiety among Professional   Cricket Players from Different Zones, *Indian Journal of Movement Education and Exercises Science, 3*(1)

8. Perry, J. D., & Williams, J. M. (2021). Relationship of intensity and direction of competitive trait anxiety to skill level and gender in tennis. *The Sport Psychologist*, *12*(2), 169-179.

9. Panza, M. J., Graupensperger, S., Agans, J. P., Doré, I., Vella, S. A., & Evans, M. B.(2021). Adolescent sport participation and symptoms of anxiety and   depression: a systematic review and meta-analysis. *Journal of sport and   exercise psychology*, *42*(3), 201-218.

10. Seligman, M. E. P., Walker, E .F. & Rosenhan, D. L. (1982). Abnormal Psychology. New York: W.W. Norton & Company, Inc.

11. Speilberger, C. D., Gorsuch R. L. &Lushane, R. E. (1970). Manual for the State-Trait Anxiety Inventory. California: Consulting Psychologists Press

12. Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting   Psychologists Press.

13. Sopa L.S. & Pomohaci (2020). Discovering the anxiety level of a basketball team   using the SCAT questionnaire. *Timisoara Physical Education and Rehabilitation Journal.* 13(25): 7-15.