Volume: 5 Issue: 3 Pages: 130-132




# Comparative Evaluation of Physiological and Psychological Variables among International and National Level

**[*1] Saurabh Ojha and [2]Dr. Amol Onkarrao Deshmukh**

[*1] Research Scholar, B.P.E, B.P.Ed, M.P.Ed, Ph.D. (Pursuing), College of Physical Education, Shivaji Nagar, Yavatmal, Maharashtra, India.

[2] Principal, College of Physical Education, Shivaji Nagar, Yavatmal, Maharashtra, India.

**Article Info.**
**E-ISSN: 2583-6528**
**Impact Factor (QJIF): 8.4**
**Peer Reviewed Journal**
**Available online:**
**www.alladvancejournal.com**

**Received:** 18/Feb/2026
**Accepted:** 23/March/2026

***Corresponding Author**
**Saurabh Ojha**
Research Scholar, B.P.E, B.P.Ed, M.P.Ed, Ph.D. (Pursuing), College of Physical Education, Shivaji Nagar, Yavatmal, Maharashtra, India.

**Abstract**
The present study was undertaken to examine and compare selected physiological and psychological variables among International and National level Taekwondo players. A total of 140 participants were included in the study, comprising 40 International level and 100 National level Taekwondo players representing various states of India. The age of the participants ranged from 20 to 30 years. The subjects were selected from athletes who had participated in Taekwondo competitions during the period 2020–2022. Purposive sampling technique was employed for the selection of International level players, whereas National level players were selected using the simple random sampling method. The study was formulated on the hypothesis that significant differences would exist between International and National level Taekwondo players with respect to selected physiological and psychological variables, namely Blood Pressure, Aggression, and Competitive Anxiety. To obtain the required data, standardized and validated assessment tools were employed. Blood Pressure was measured using a sphygmomanometer, Aggression was assessed through the Aggression Questionnaire developed by Buss and Perry (1992), and Competitive Anxiety was evaluated using the Sport Competition Anxiety Test (SCAT) developed by Martens *et al*. (1977). The data collected from the participants were systematically recorded and analyzed using appropriate statistical techniques to examine the extent of differences between the two groups of players.

The data collected for the study were subjected to statistical analysis to ascertain the differences between International and National level Taekwondo players with respect to the selected physiological and psychological variables. The Independent Samples *t*-test was employed as the statistical technique to evaluate the mean differences between the two groups. The level of significance was established at 0.05 and served as the criterion for the acceptance or rejection of the null hypothesis. The analysis of the data revealed a statistically significant difference in Competitive Anxiety between International and National level Taekwondo players. However, the obtained *t*-values for Blood Pressure and Aggression did not reach the prescribed level of significance, indicating the absence of statistically significant differences between the groups for these variables. Based on these findings, it was concluded that the competitive level of participation exerted a significant influence on Competitive Anxiety, whereas no such influence was evident in Blood Pressure and Aggression among the participants included in the study.

**Keywords:** Blood pressure, aggression, and competitive anxiety, taekwondo.

## Introduction

Taekwondo is one of the most widely practiced combat sports across the world, demanding a high level of physical fitness, technical proficiency, and psychological preparedness from its participants. Success in Taekwondo competition depends not only on the mastery of skills and tactical execution but also on the athlete's physiological functioning and psychological characteristics. These factors play a crucial role in determining an athlete's ability to perform effectively under varying competitive conditions.

Among the physiological variables, blood pressure serves as an important indicator of cardiovascular efficiency and

overall physiological adaptation to physical exertion. Optimal blood pressure regulation contributes to effective circulation, enhanced oxygen and nutrient delivery to working muscles, and improved recovery during and after training and competition. Variations in blood pressure may reflect differences in physical conditioning and the body's response to competitive demands.

In addition to physiological competence, psychological attributes significantly influence athletic performance. Aggression is considered an essential psychological characteristic in combat sports, as it may contribute to assertiveness, determination, and competitive intensity during performance. However, the effective regulation and appropriate expression of aggression are equally important for maintaining discipline and achieving success in competition. Competitive anxiety, another critical psychological variable, has a profound impact on athletic performance. Excessive anxiety may impair concentration, decision-making, and skill execution, whereas optimal levels of anxiety can enhance alertness and readiness for competition.

The present study was undertaken to examine and compare selected physiological and psychological variables among International and National level Taekwondo players. Specifically, the study focuses on Blood Pressure, Aggression, and Competitive Anxiety to investigate their potential role in differentiating performance levels between the two groups of athletes. The findings of the study may contribute to a better understanding of the physiological and psychological characteristics associated with high-level Taekwondo performance and may provide valuable insights for coaches, trainers, sports psychologists, and other sports professionals in developing evidence-based training and intervention strategies aimed at enhancing both physical efficiency and psychological readiness among Taekwondo players.

## Purpose of the study

"This study aimed to examine and compare specific physiological and psychological characteristics of International- and National-level Taekwondo Athletes."

## Hypothesis

Based on literatures reviewed it was hypothesized that there may be significant difference in Blood Pressure, Aggression, and Competitive Anxiety between International and National Level of Taekwondo Players.

## Methodology

140 players, 40 International Level Taekwondo Players and 100 National Level Taekwondo Players from different states of India were selected as subjects. Age of the subjects was ranging from 20 to 30 years. The selection was done among the players played in the between year of 2020 to 2022. Purposive sampling method for International level and Simple Random sampling method for National level was adopted for selection of subject.

Data on Blood Pressure, Aggression, and Competitive Anxiety were collected using Sphygmomanometer, Aggression Questionnaire developed by Buss and Perry (1992), and the Sport Competition Anxiety Test (SCAT) developed by Martens *et al*. (1977) Questionnaire respectively and the numbers of tracing were recorded as the score and the obtained scores were arranged in the table for further statistical analysis.

## Results and Discussion

To determine the significant difference between the two groups independent t-test statistical technique was employed independently for each variables. The level of significance to test the hypothesis was set at 0.05. The findings pertaining to the study have been shown in Table -1.

**Table 1:** Description of Mean, Standard Deviation and t- ratio for the Data on the Blood Pressure, Aggression, and Competitive Anxiety of Two Different Levels of Taekwon-Do Players

| Test | Level of Players | Mean | Standard Deviation | Mean Difference | Standard Error of Mean Difference | t-ratio |
|---|---|---|---|---|---|---|
| Blood Pressure | International | 1.506 | 0.045 | 0.016 | 0.0535 | 0.299 |
| | National | 1.490 | 0.038 | | | |
| Aggression | International | 71.850 | 22.725 | 1.65 | 1.21 | 1.364 |
| | National | 73.50 | 20.574 | | | |
| Competitive Anxiety | International | 13.850 | 1.542 | 5.99 | .288 | 20.799* |
| | National | 19.840 | 0.845 | | | |

*Significant at 0.05 level Tabulated $t_{0.05(138)} = 1.977$

It is evident from Table-1 that significance of difference found between International and National Level Taekwondo Players in Competitive Anxiety as the obtained t value of 20.799 is much higher than the tabulated t-value of 1.977 at 0.05 level for 138 degree of freedom.

Table-1 also reveals that insignificant difference are found between International and National Level Taekwondo Players in Blood Pressure and Aggression as the obtained t value of 0.299 and 1.364 are less than the tabulated t-value of 1.977 at 0.05 level for 138 degree of freedom.

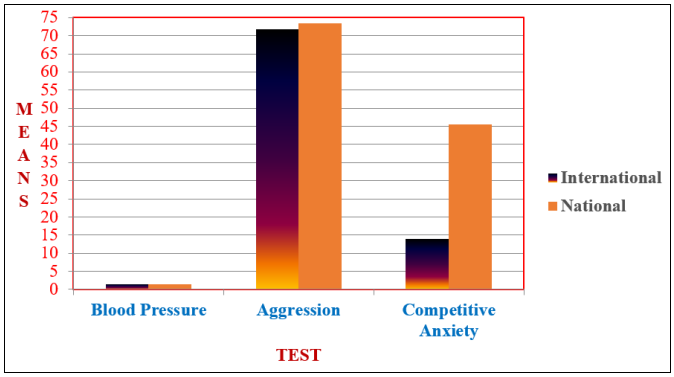



**Fig 1:** Comparison of Means for the Data on the Blood Pressure, Aggression and Competitive Anxiety between International and National Level Taekwondo Players

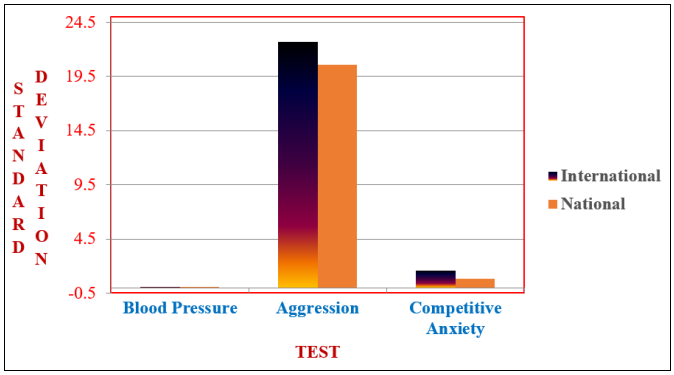



**Fig 2:** Comparison of Standard Deviation for the Data on the Respiratory Rate, Vital Capacity and Mental Toughness between International and National Level Taekwondo Players

## Conclusion

Recognizing the limitations of the study and on the basis of statistical findings it may be fairly concluded that

1. The present investigation was conducted to compare selected physiological and psychological variables among International- and National-level Taekwondo players.
2. The analysis revealed a statistically significant difference in Competitive Anxiety between the two groups, indicating that the level of competitive participation influences athletes' psychological responses to competition.
3. International-level Taekwondo players demonstrated comparatively lower Competitive Anxiety scores than National-level players, suggesting superior psychological adaptation to competitive environments.
4. No statistically significant difference was observed in Blood Pressure between International- and National-level Taekwondo players, indicating a similar physiological profile with respect to cardiovascular functioning.
5. The findings further revealed no significant difference in Aggression between the two groups, suggesting that competitive level does not substantially affect aggressive tendencies among the selected participants.
6. Among the variables examined, Competitive Anxiety emerged as the only factor capable of distinguishing between International- and National-level Taekwondo players.
7. The results emphasize the importance of psychological preparedness in achieving higher levels of performance and competitive success in Taekwondo.
8. It may be inferred that enhanced psychological regulation, particularly the ability to manage competitive anxiety, is a characteristic associated with participation at the international level.
9. The findings of the study may provide valuable insights for coaches, sport psychologists, and trainers in designing scientifically informed training programmes aimed at improving athletes' psychological readiness and overall competitive performance.

## Reference

1. Behrouz Ghorbanzadeh SM. Determination of Teakwondo National Team Selection Criterions by Measuring Physical and Physiological Parameters. Scholars Research Library Annals of Biological Research. 2011; 2(6):184-19
2. Cheesman MA. Mental Toughness of Mixed Martial Arts Athletes at Different Level of Competition. *Sage Journal.* 2013; 116(3):212-216.
3. Chiodo S, Tessitore A, Cortis C, Lupo C, Ammendolia A, Iona T. Effect of official Tack on the competition on all round performance of elite athletes. *Journal of Strength and Conditioning Research*, 2011, 334-339.
4. Ishani Tayshete MA. Comparison of Effect of Proprioceptive Training and Core Muscle Strengthening on the Balance Ability of Adolescent Taekwondo Athletes. *International Journal of Health Sciences and Research.* 2020; 10(6):268-279.