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Emotional Intelligence and Athletic Achievement: Comparing Table Tennis and Taekwondo Athletes

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Keywords

Emotional Intelligence, Contact and Non-Contact Sports

Abstract

Emotional intelligence (EI) is a vital psychological factor in sports, though its role varies by sport type. This study compared EI between non-contact (table tennis) and contact (taekwondo) athletes and examined its association with athletic achievement. A quantitative comparative-correlational design was used, involving 95 athletes from West Java, Indonesia. EI was measured via the Trait Meta-Mood Scale (TMMS-24), while achievement was assessed through a structured medal-based scoring system. Data were analyzed using independent samples t-tests and correlation analyses. Results showed table tennis athletes had a higher mean EI score (M = 93.53, SD = 10.24) than taekwondo athletes (M = 88.73, SD = 15.23), but the difference was not statistically significant (p = 0.076). Correlation analysis revealed a positive but weak association between EI and achievement (r = 0.285). These findings suggest EI is a supportive factor rather than a sole determinant of success, which is also influenced by technical skills, physical condition, and experience. Consequently, athlete development programs should integrate sport-specific psychological training alongside physical and technical preparation.

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INTRODUCTION

An athlete's physical prowess, technique, strategies, and psychological factors all interact intricately to determine how well they do in sports (Weinberg & Gould, 2023). The awareness that physical prowess is insufficient to attain peak performance has grown in recent decades, as has the focus on psychological aspects of athletic success (G. Jones, 2002). Emotional intelligence, which was first defined by Goleman (1995) as the capacity to identify, comprehend, regulate, and employ emotions both inside oneself and in interactions with others, is one psychological component that has drawn special attention.

In the context of sports, the idea of emotional intelligence has evolved significantly. According to (Lane et al., 2009), emotional intelligence is important in the context of sports because athletes need to be able to identify and control their emotions in order to maximise performance, particularly under pressure during competitive events. Numerous facets of sports performance are positively correlated with emotional intelligence, according to empirical studies. (Laborde et al., 2016) showed a somewhat favourable connection (r = 0.28) between sports performance and emotional intelligence in a meta-analysis of 25 research. Baseball players with high emotional intelligence outperformed those with poor emotional intelligence in batting averages and error rates, according to a 2003 study by (Zizzi et al., 2003).

(Crombie et al., 2009) discovered that elite athletes had far higher emotional intelligence scores than non-elite athletes in the setting of competitive sports, especially in the areas of self-motivation and emotion control. (Castro-Sánchez et al., 2019) conducted a two-year longitudinal study on young athletes and found that better performance and consistency in future performance were predicted by baseline emotional intelligence, with emotion control being the best predictor.

Numerous studies have shown mechanisms that explain the connection between athletic performance and emotional intelligence. According to (Nicholls et al., 2012), athletes with high emotional intelligence were better at utilising adaptive coping mechanisms under pressure from competition. They employed problem-focused coping more often than maladaptive emotion-focused coping. Additionally, (Kopp & Jekauc, 2018) study shown that emotional intelligence plays a significant mediating role in the link between personality and athletic performance.

Studies have demonstrated that the distinctive features of every sport might impact the growth of particular facets of emotional intelligence. Individual athletes tended to score better on the aspects of self-awareness and internal emotion control, whereas team athletes scored higher on the dimensions of social skills and empathy, according to a study by Laborde et al. (2014) that made this distinction. This classification, however, is still too general and fails to take into consideration the particular variations in psychological needs among sports.

Research comparing sports with various attributes has produced intriguing findings. Athletes in contact sports (soccer, basketball) scored higher on the dimensions of emotional management and stress tolerance than athletes in non-contact sports (athletics, swimming), according to a study by (Kajbafnezhad et al., 2011). This may have developed as an adaptation to the physical and confrontational nature of their sports.

In the context of racquet sports, (Costarelli & Stamou, 2009) study on tennis players revealed a substantial correlation between match performance and emotional intelligence, particularly the capacity to control emotions in quickly changing circumstances. Quick reflexes, anticipation, intense focus, and the capacity to make snap decisions in fast-paced game scenarios are all necessary for tennis and other racket sports like table tennis. (Williams, 1993) state that racket sports necessitate rigorous emotional regulation because a single emotional mistake can instantly affect the game's momentum and point.

However, martial arts have certain qualities that set them apart from other sports. According to research by (Vertonghen & Theeboom, 2010), practicing traditional martial arts, such as taekwondo, helps people develop psychosocial traits including self-control, discipline, and respect. According to (Lakes & Hoyt, 2004), children who practise taekwondo exhibit notable gains in control and self-regulation.

Taekwondo is an Olympic sport that blends traditional martial arts philosophy with competitive elements. According to research by (Finkenberg, 1990), taekwondo athletes are more confident and have a more positive self-concept than non-athletes. Long-term taekwondo

training is linked to improved emotional stability and reduced anxiety, according to additional research by (Kurian et al., 1993).

Although earlier studies have offered insightful information about emotional intelligence in sports, there are still a number of holes that must be filled. First, without taking into account the unique characteristics of each sport, the majority of studies compare fairly general sports (e.g., solo vs. team, contact vs. non-contact) (Laborde et al., 2016). Second, there isn't much study that directly compares the emotional intelligence profiles of sports with essentially distinct psychological demands.

Because table tennis and taekwondo represent different sport categories with different psychological demands, the comparison between them is very intriguing. As the quickest racquet sport in the world (Djokić et al., 2017), table tennis necessitates incredibly fast decision-making, frequent adjustment to opponent tactics, and the capacity to control frustration during heated rallies. Taekwondo, on the other hand, blends competitive elements with a martial arts ideology that prioritises internal transformation, self-control, and character development (Theeboom et al., 2009).

There are significant theoretical and practical ramifications to comprehending how athletes in these two sports differ in their emotional intelligence profiles. Theoretically, this study can improve our comprehension of how various athletic environments influence the development of emotional intelligence (Ruiz-Ariza et al., 2017). Practically speaking, this knowledge can help sports psychologists and coaches create more specialised mental training regimens that are suited to the psychological requirements of each activity (Fletcher & Sarkar, 2012).

Furthermore, psychological interventions can be more focused and successful by determining which aspects of emotional intelligence have the biggest effects on performance in each activity (Crombie et al., 2009). This is consistent with sports psychology's sport-specific approach, which highlights the significance of taking each sport's distinctive features into account when creating intervention programs (J. Jones & Hardy, 1990).

(Bompa & Buzzichelli, 2019) stressed that psychological development must be combined with technical and physical development in order to attain performance at an international level. Thus, it is anticipated that this study will close a gap in the literature on sports psychology in Indonesia, aid in the growth of national athletes, especially in comprehending the significance of sport-specific emotional intelligence, and offer useful contributions to the creation of mental training regimens for Indonesian athletes.

METHODS

This study employed a quantitative approach using a comparative correlational design. This design was selected to compare the levels of emotional intelligence between two groups of athletes (table tennis and taekwondo) and to examine the relationship between emotional intelligence and athletic achievement within each group.

Participants

The participants consisted of table tennis and taekwondo athletes who met the following inclusion criteria: actively training for at least one year with a minimum training frequency of twice per week, aged between 17 and 35 years, officially registered as athletes in a sports club or recognized sports organization, and willing to participate voluntarily in the study. The sample size was determined using purposive sampling, resulting in 49 table tennis athletes and 46 taekwondo athletes. This number was based on a power analysis to detect a medium effect size with a statistical power of 0.80 and an alpha level of 0.05. Participants were recruited from various regions and training centers across West Java to ensure adequate representation.

Instrument

This study employed the Trait Meta-Mood Scale (TMMS-24) (Fernández-Berrocal et al., 2004) as a self-report instrument to measure emotional intelligence. The instrument consists of 24 items designed to assess the extent to which individuals are able to attend to, understand, and regulate the emotions they experience.

Based on the reliability testing of the TMMS-24, a Cronbach's alpha coefficient of 0.81 was obtained for the emotional attention dimension, indicating a very good level of reliability. For the emotional clarity dimension, the Cronbach's alpha reached 0.85, which is also classified as very good reliability. Meanwhile, the emotional regulation dimension yielded a Cronbach's alpha value of 0.80, indicating good reliability.

Athlete performance was assessed based on ranking or medal achievements in official competitions using the following scoring system: international-level medals = 4 points, national-level medals = 3 points, provincial-level medals = 2 points and city/regency-level medals = 1 points. The demographic questionnaire included age, gender, training experience (years of practice), weekly training frequency, and achievement history.

Data Collection and Data Analysis

Data in this study were collected through the online distribution of questionnaires using Google Forms between May 2025 and January 2026, which were completed directly by the athletes. Prior to completing the questionnaire, the research procedures and objectives were explained to the respondents by the research assistant. The collected data were subsequently analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.

The data analysis techniques included descriptive statistics to calculate the mean, standard deviation, and frequency distribution of all research variables. Assumption tests were conducted prior to further analysis, including normality tests using the Kolmogorov–Smirnov and Shapiro–Wilk tests, homogeneity of variance using Levene's test, and linearity testing for correlation analysis purposes. To examine differences between groups, an Independent Samples t-test was used for normally distributed data, while the Mann–Whitney U test was applied for non-normally distributed data. These tests were conducted to compare overall emotional intelligence as well as its dimensions between table tennis athletes and taekwondo athletes.

Furthermore, a Multivariate Analysis of Variance (MANOVA) was employed to compare the multidimensional profiles of emotional intelligence between the two groups. Relationship testing was conducted using Pearson correlation for normally distributed data or Spearman correlation for non-normally distributed data to examine the association between emotional intelligence and athletic performance within each group.

Multiple linear regression analysis was applied to identify which dimensions of emotional intelligence contributed most significantly to predicting athletic performance. As an additional analysis, Analysis of Covariance (ANCOVA) was performed to control for potential confounding variables such as age and training experience, along with the calculation of effect size (Cohen's d) to assess the practical magnitude of differences. All hypothesis testing in this study was conducted at a statistical significance level of $\alpha = 0.05$.

RESULTS

This chapter presents the results of data processing and analysis obtained from taekwondo and table tennis athletes residing in West Java Province, with a total sample of 95 athletes. The research data were analyzed using the Statistical Package for the Social Sciences (SPSS) software. The results of the descriptive statistical analysis are presented as follows **table 1.**

Table 1. Descriptive Statistics of Emotional Intelligence among Table Tennis and Taekwondo Athletes

Variable	Sport Type	N	Min	Max	Mean	SD
Emotional Intelligence	Table Tennis	49	69	119	93,53	10,24
Emotional Intelligence	Taekwondo	46	40	120	88,73	15,23

Based on **Table 1**, the total number of respondents consisted of 49 table tennis athletes and 46 taekwondo athletes. The mean score of emotional intelligence among table tennis athletes was 93.53 with a standard deviation of 10.24, whereas taekwondo athletes had a mean score of 88.73 with a standard deviation of 15.23. These findings indicate that, descriptively, table tennis athletes demonstrated a higher average level of emotional intelligence compared to taekwondo athletes, with less variability in their scores.

Table 2. Results of the Comparative Test of Emotional Intelligence between Table Tennis and Taekwondo Athletes

Statistical Test	Sig. (2 tailed)	α	Interpretation
Independent Samples t-test	0,076	0,05	Not statistically significant

Based on **Table 2**, the results of the independent samples *t*-test showed a significance value (Sig. 2-tailed) of 0.076. Since the *p*-value is greater than 0.05 ($p \geq 0.05$), it can be concluded that there is no statistically significant difference in emotional intelligence between table tennis athletes and taekwondo athletes.

Table 3. Correlation Results Between Emotional Intelligence and Athletic Achievement

Statistical Test	Correlation Coefficient	Strength of Relationship
Pearson	r = 0,285	Weak positive correlation
Spearman	ρ = 0,199	Weak positive correlation

Based on **Table 3**, the results of the correlation analysis indicate a positive relationship between emotional intelligence and athletic performance. However, the Pearson correlation coefficient (r = 0.285) and the Spearman correlation coefficient (ρ = 0.199) fall within the weak correlation category. This suggests that emotional intelligence is associated with athletic performance, but the strength of the relationship is relatively low.

The findings indicate that, descriptively, there is a difference in the mean emotional intelligence scores between table tennis and taekwondo athletes; however, statistically, the difference is not significant. This suggests that participation in body-contact versus non-body-contact sports does not directly result in a significant difference in athletes' levels of emotional intelligence.

Furthermore, the correlation analysis revealed a positive relationship between emotional intelligence and athletic achievement, although the strength of this relationship was weak. This implies that athletes with high emotional intelligence do not necessarily achieve high performance outcomes. This interpretation is supported by field observations showing that some athletes with high emotional intelligence remain at the training level, while others with moderate emotional intelligence are able to attain national-level achievements.

These findings demonstrate that athletic performance is not determined solely by emotional intelligence, but is also influenced by other factors such as competitive experience, training volume, physical condition, technical mastery, coaching support, and opportunities to participate in competitions. Therefore, emotional intelligence functions as a supporting factor in athletic achievement rather than as a single determining factor.

CONCLUSION

Based on the results of the data analysis and the discussion conducted, the following conclusions can be drawn There is no significant difference in emotional intelligence between table tennis athletes (non–body contact sport) and taekwondo athletes (body contact sport). This is supported by the results of the independent samples t-test, which showed a

significance value greater than 0.05 ($p \geq 0.05$). Therefore, the type of sport—whether body contact or non–body contact—does not statistically differentiate athletes' levels of emotional intelligence. Descriptively, table tennis athletes demonstrated a higher mean score of emotional intelligence compared to taekwondo athletes; however, the difference was not strong enough to be considered statistically significant. This finding indicates that variations in emotional intelligence are more likely influenced by individual factors rather than solely by the characteristics of the sport type. A positive relationship was found between emotional intelligence and athletic achievement, although the strength of the relationship was weak. The low correlation coefficient suggests that athletes with higher emotional intelligence tend to achieve better performance; however, this relationship is neither strong nor deterministic. Emotional intelligence is not a single determining factor in athletic achievement. Sports performance is influenced by various other factors, such as competition experience, training duration and intensity, physical condition, mastery of techniques and tactics, coach support, and opportunities to participate in competitions. Overall, this study concludes that emotional intelligence functions as a supportive factor in athletes' achievement; however, it cannot operate independently without the contribution of other determinants, particularly those related to technical skills and physical capacities. Therefore, athlete development programs should not solely emphasize psychological aspects, but rather integrate them in a balanced manner with physical training, technical preparation, and competitive experience.

REFERENCES

Bompa, T. O., & Buzzichelli, C. (2019). *Periodization: Theory and methodology of training*. Human Kinetics.

Castro-Sánchez, M., Zurita-Ortega, F., Chacón-Cuberos, R., & Lozano-Sánchez, A. M. (2019). Motivational climate and levels of anxiety in soccer players of lower divisions. *Journal of Sport and Health Research*, *11*(1), 55–64.

Costarelli, V., & Stamou, D. (2009). Emotional intelligence, body image and disordered eating attitudes in combat sport athletes. *Journal of Exercise Science & Fitness*, *7*(2), 104–111.

Crombie, D., Lombard, C., & Noakes, T. (2009). Emotional intelligence scores predict team sports performance in a national cricket competition. *International Journal of Sports Science & Coaching*, *4*(2), 209–224.

Djokić, Z., Munivrana, G., & Levajac, D. (2017). Role of serve and return of serve at European Games 2015 table tennis tournament. *Journal of Physical Education and Sport*, *17*, 466–472.

Finkenberg, M. E. (1990). Effect of participation in taekwondo on college women's self-concept. *Perceptual and Motor Skills*, *71*(3), 891–894.

Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise*, *13*(5), 669–678.

Jones, G. (2002). Performance excellence: A personal perspective on the link between sport and business. *Journal of Applied Sport Psychology*, *14*(4), 268–281.

Jones, J., & Hardy, L. E. (1990). *Stress and performance in sport*. John Wiley & Sons.

Kajbafnezhad, H., Ahadi, H., Heidarie, A. R., Askari, P., & Enayati, M. (2011). Difference between team and individual sports with respect to psychological skills, overall emotional intelligence and athletic success motivation in Shiraz city athletes. *Journal of Physical Education and Sport*, *11*(3), 249.

Kopp, A., & Jekauc, D. (2018). The influence of emotional intelligence on performance in competitive sports: A meta-analytical investigation. *Sports*, *6*(4), 175.

Kurian, M., Caterino, L. C., & Kulhavy, R. W. (1993). Personality characteristics and duration of ATA Taekwondo training. *Perceptual and Motor Skills*, *76*(2), 363–366.

Laborde, S., Dosseville, F., & Allen, M. S. (2016). Emotional intelligence in sport and exercise: A systematic review. *Scandinavian Journal of Medicine & Science in Sports*, *26*(8), 862–874.

Lakes, K. D., & Hoyt, W. T. (2004). Promoting self-regulation through school-based martial arts training. *Journal of Applied Developmental Psychology*, *25*(3), 283–302.

Lane, A. M., Meyer, B. B., Devonport, T. J., Davies, K. A., Thelwell, R., Gill, G. S., Diehl, C. D. P., Wilson, M., & Weston, N. (2009). Validity of the emotional intelligence scale for use in sport. *Journal of Sports Science & Medicine*, *8*(2), 289.

Nicholls, A. R., Polman, R. C. J., & Levy, A. R. (2012). A path analysis of stress appraisals, emotions, coping, and performance satisfaction among athletes. *Psychology of Sport and Exercise*, *13*(3), 263–270.

Ruiz-Ariza, A., Grao-Cruces, A., de Loureiro, N. E. M., & Martinez-Lopez, E. J. (2017). Influence of physical fitness on cognitive and academic performance in adolescents: A systematic review from 2005–2015. *International Review of Sport and Exercise Psychology*, *10*(1), 108–133.

Theeboom, M., De Knop, P., & Vertonghen, J. (2009). Experiences of children in martial arts. *European*

Journal for Sport and Society, *6*(1), 19–35.
Vertonghen, J., & Theeboom, M. (2010). The social-psychological outcomes of martial arts practise among youth: A review. *Journal of Sports Science & Medicine*, *9*(4), 528.
Weinberg, R. S., & Gould, D. (2023). *Foundations of sport and exercise psychology*. Human Kinetics.
Williams, J. M. (1993). *Applied sport psychology: Personal growth to peak performance*. Mayfield Publishing Co.
Zizzi, S., Deaner, H., & Hirschhorn, D. (2003). The relationship between emotional intelligence and performance among college basketball players. *Journal of Applied Sport Psychology*, *15*(3), 262–269.