

ORIGINAL SCIENTIFIC PAPER

Coach-Athlete Intimacy, Parental Support, Emotional Regulation on Anxiety in Indonesian Boxing Student-Athletes with Gender as a Moderator

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Abstract

The purpose to analyze coach-athlete intimacy, parental support, emotional regulation towards competition anxiety in boxing student athletes with gender as a moderating variable. This type of research is quantitative descriptive, while the number of subjects was 103 athletes (34 female boxers and 69 male boxers) and aged 14 – 18 years. The research utilized a questionnaire as a research instrument and the indicators of this variable were coach-athlete intimacy (closeness, commitment, complementarity), parental support (emotional, instrumental, informative, reward), emotional regulation (cognitive reappraisal and expressive suppression), anxiety (Cognitive, Somatic, Confidence). Data analysis of this study used Smart Partial Least Squares (PLS). The results of study were coach-athlete intimacy ($T = 3.133$; $p = 0.027$), parental support ($T = 3.177$; $p = 0.024$), and emotional regulation ($T = 3.118$; $p = 0.008$) had an effect on anxiety. Meanwhile, gender moderated the anxiety of boxing student athletes based on coach-athlete intimacy ($T = 2.167$; $p = 0.041$), parental support ($T = 2.125$; $p = 0.003$), and emotional regulation ($T = 2.128$; $p = 0.037$). This study also found that gender acted as a moderating variable, strengthening or influencing the relationship between three main variables and competition anxiety. Future research is expected to utilize a mixed-methods design to explore the qualitative aspects of athletes' interpersonal relationships and emotions in greater depth, as well as to expand the population and encompass various sports.

Keywords: *sport psychology, athlete psychology, student athletes, combat sport*

Introduction

Anxiety is a complex emotional response, characterized by feelings of worry, nervousness, and tension (Cahyo et al., 2025). This is accompanied by physical symptoms such as increased heart rate, sweating, and muscle tension (Zhang, 2023). In boxing, where athletes face opponents head-on and face the risk of physical injury, anxiety levels tend to be high. The intense competitive nature, the pressure to achieve peak performance, and the physical threat posed by opponents make boxing a highly psychologically challenging arena. Anxiety before and during a competition, in particular, can significantly impact an athlete's performance (Mojtahedi et al., 2023).

Anxiety in boxers becomes more complex when they become student-athletes. As student-athletes, they face not only the competitive pressure and physical demands of boxing, but also the academic burden and expectations of academic achievement (Saniah et al., 2024). Time management, expectations from coaches, parents, teachers, and peers all play a role in shaping their experiences of anxiety (Andrade et al., 2021). Furthermore, during adolescence, student-athletes also face various psychosocial changes that can influence how they experience and manage anxiety (Yusup et al., 2024).

Based on previous research on anxiety in boxing, factors include the pressure of competition and the physical threats inher-

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ent in the sport, as well as psychological factors such as self-confidence, motivation, and prior experience (Alejo et al., 2020 & Prabowo et al., 2024). An athlete's social environment, including the dynamics of their relationship with their coach, parental support, and interactions with teammates and opponents, are also important factors (Olmedilla et al., 2018). Furthermore, an athlete's coping strategies, their ability to regulate their emotions, and their perception of the pressure they face all interact to determine the intensity and impact of anxiety on their performance and well-being (Weber et al., 2018).

Intimacy between coach and athlete is an important dimension of the broader coach-athlete relationship. Intimacy refers to the level of emotional depth, trust, openness, and shared understanding between coach and athlete (Mandan et al., 2024). A positive intimate relationship, characterized by mutual trust, respect, and effective communication, can act as an antidote to anxiety (Oktavianingrum & Maryam, 2023). Athletes who feel close and comfortable with their coach are more likely to express concerns, seek support, and feel more secure in the training and competition environment (Negoro & Sungkowo, 2023).

It is important to distinguish between "Coach-Athlete Intimacy" and the broader concept of "Coach-Athlete Relationship." The Coach-Athlete Relationship encompasses various aspects of interaction between the coach and athlete, including leadership, communication, collaboration, and instrumental support from the coach (Nicholls, 2021). Meanwhile, intimacy is a specific component of this relationship that focuses on the affective or emotional dimension. Intimacy involves sharing personal experiences, demonstrating empathy, and building a deep emotional bond (Indarto et al., 2025). In other words, not all well-functioning coach-athlete relationships have a high level of intimacy; intimacy indicates the depth and quality of the emotional connection that goes beyond simply professional interactions (Latief et al., 2024).

Parental support has a significant impact on student athletes' experiences of anxiety (Rouquette et al., 2021). Parents who provide appropriate emotional, informational, and instrumental support can help athletes feel more confident and reduce their stress. This support can include attending games, offering encouragement, helping organize practice and academic schedules, or simply being a good listener (Imtihansyah et al., 2024). However, excessive parental pressure to perform, excessive criticism, or apathy can exacerbate athletes' anxiety, leaving them feeling unsupported, inadequate, or depressed (Nikander et al., 2022).

Emotion regulation refers to the process by which individuals influence the nature of emotions, when they experience them, and how they express them (Robazza et al., 2023). In the context of boxing, athletes' ability to effectively regulate their emotions, particularly when faced with stress and pressure, is crucial for managing anxiety. Athletes with adaptive emotion regulation strategies, such as cognitive restructuring, relaxation, or task-focused focus, tend to reduce anxiety levels and maintain optimal performance (Yamaguchi et al., 2023). Conversely, athletes who struggle with emotion regulation, often resorting to maladaptive strategies such as emotional suppression or rumination, may experience increased anxiety, leading to decreased performance (Karmakar & Ghosh, 2023).

Based on the above description, it has been identified that anxiety is a crucial issue for boxing students, and factors such as coach-athlete intimacy, parental support, and emotion regulation have the potential to influence this level of anxiety. However, a comprehensive understanding of how these three factors interact, and how this interaction is moderated by gender, remains limited, particularly in the Indonesian context (Correia & Rosado, 2019). This research is important because it will provide in-depth insights into the psychological mechanisms underlying anxiety in this specific group of athletes. The inclusion of gender as

a moderator is particularly relevant because there are potentially significant differences between male and female athletes in terms of emotional responses, coping strategies, anxiety expression, and how they interact with their social environment (coach and parent). Understanding these differences is crucial for developing more targeted and effective interventions.

The purpose of this study was to analyze the influence of coach-athlete intimacy, parental support, and emotion regulation on anxiety in Indonesian college boxers, and to investigate the role of gender as a moderator in this relationship. This novel study combines these three psychosocial predictors into a single model to explain anxiety in the Indonesian amateur college boxer population, a context that remains underexplored. Furthermore, emphasizing the role of gender as a moderator will provide a unique contribution to the literature, allowing for the identification of gender differences in vulnerability and resilience to anxiety, which may inform more gender-specific and gender-sensitive training and psychological support programs.

Research methods

Research Design and Procedures

The research method used in this study is a quantitative descriptive method. This study has four research stages: the first stage is problem analysis based on field observations. The purpose of the first stage is to collect and identify problems based on facts in the field. The second stage is document analysis based on a scientific literature review. The purpose of the second stage is to analyze factors scientifically, determine hypotheses, and develop data collection instruments. The third stage is data collection. The fourth stage is data analysis and reporting research results through scientific publications.

Population and Sample

The population and sample of this study were all boxers from Yogyakarta Province, Indonesia. The sample inclusion criteria were: 1) boxers from Yogyakarta Province, 2) boxers still in school, 3) still actively exercising, and 4) having participated in competitions at the district, city, or national level. The sample exclusion criteria were: 1) boxer was an athlete at a college, 2) boxers were beginners or had never participated in competitions. Thus, the sample of this study that met the criteria were 103 athletes (34 female athletes and 69 male athletes), aged 14-18 years, with 2-4 years of training experience, and 1-2 years of experience as athletes.

Research Instruments

The research instrument was a questionnaire with a Likert scale of 1-5, where 1 'strongly disagree', 2 'disagree', 3 'fair', 4 'agree', 5 'strongly agree'. Meanwhile, this research questionnaire was adopted from previous research and modified to suit the needs of the current research problem.

The indicators in the coach-athlete intimacy variable are closeness, commitment, and complementarity (Mandan et al., 2024 & Latief et al., 2024). In indicators of parental support variable, there are emotional, instrumental, informative, reward (Burke et al., 2023 & Imtihansyah et al., 2024). Indicators in emotional regulation variable are cognitive reappraisal and expressive suppression (Aune et al., 2025). In anxiety variable, the Competitive State Anxiety Inventory-2 Revised (CSAI-2R) was adapted Cox et al., (2003). Indicators in anxiety variable are Cognitive, Somatic, Self-Confidence (Saniah et al., 2024, Sridana et al., 2024, & Cahyo et al., 2025).

Data analysis

Data analysis used the Structural Equation Model (SEM) approach assisted by the smart PLS (Partial Least Squares)

application, which refers to the theory by Hair et al., (2019). The stages of data analysis in this study are, the first stage is the measurement model stage. This stage is carried out to test the validity and reliability of each indicator. The validity test in this study uses convergent validity by correlating item scores (component scores) with construct scores which then produce loading factor values. The instrument is declared valid if it has a loading factor value >0.6. After conducting the validity test, a reliability test is then conducted to determine the reliability of the instrument. Measurement of the level of reliability in this study uses the alpha coefficient or Cronbach's alpha and composite reliability, an item is declared reliable if it has a coefficient value >0.6.

The second stage is the structural model testing stage, this stage is the hypothesis testing stage that aims to determine whether there is an association between variables or correlation between

constructs measured using Smart PLS. The structural or inner model is measured by looking at the r-square which shows the percentage level of influence between variables in the model. Then continued with the estimation of the path coefficients obtained by the bootstrapping procedure with a value considered significant if the t-statistics are greater than 1.96, with a p-value score <0.05, while to see the direction of the association, the Beta coefficient value is used.

Result

Outer Model

The outer model is the first analysis in this study using PLS Algorithm after selecting the section in 'calculate'. The external model is divided into validity and reliability tests to determine whether each indicator shows valid or invalid values. The following is an image based on the PLS Algorithm menu.

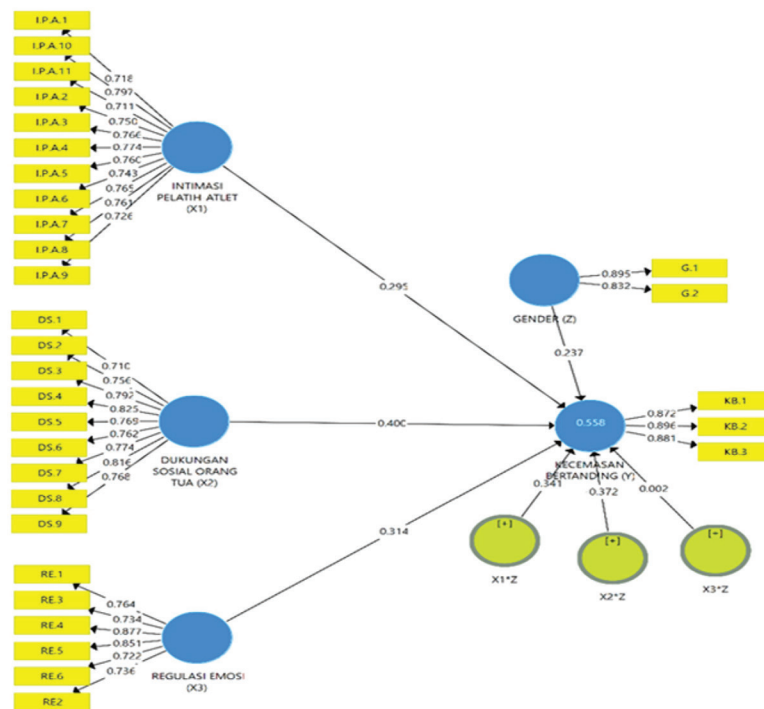


FIGURE 1. Results of PLS Algorithm

Note: INTIMASI PELATIH ATLET (X1) - Coach-Athlete Intimacy; Variable, DUKUNGAN SOSIAL ORANG TUA (X2) - Parental Support; Variable, REGULASI EMOSI (X3) - Emotional Regulation Variable; GENDER (Z) – Gender is a moderator variable, KECEMASAN; BERTANDING – Anxiety Variable.

Table 1. Results of convergent validity

Variabel	Indicator Code	AVE	Outer Loading	Information
Coach-Athlete Intimacy (X1)	I.P.A.1	0,566	0,718	Valid
	I.P.A.2		0,750	Valid
	I.P.A.3		0,766	Valid
	I.P.A.4		0,774	Valid
	I.P.A.5		0,760	Valid
	I.P.A.6		0,743	Valid
	I.P.A.7		0,765	Valid
	I.P.A.8		0,761	Valid
	I.P.A.9		0,726	Valid
	I.P.A.10		0,797	Valid
	I.P.A.11		0,711	Valid

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Table 1. Results of convergent validity

Variabel	Indicator Code	AVE	Outer Loading	Information
Parental Support (X2)	DS.1	0,602	0,710	Valid
	DS.2		0,756	Valid
	DS.3		0,792	Valid
	DS.4		0,825	Valid
	DS.5		0,769	Valid
	DS.6		0,762	Valid
	DS.7		0,774	Valid
	DS.8		0,816	Valid
	DS.9		0,768	Valid
Emotion Regulation (X3)	RE.1	0,613	0,764	Valid
	RE.2		0,736	Valid
	RE.3		0,877	Valid
	RE.4		0,851	Valid
	RE.5		0,722	Valid
	RE.6		0,734	Valid
Competition anxiety (Y)	KB.1	0,780	0,390	Valid
	KB.2		0,359	Valid
	KB.3		0,383	Valid
Gender (Z)	G.1	0,747	0,895	Valid
	G.2		0,832	Valid

Based on Figure 1, the first analysis in outer model is validity test for each item indicator. The validity test serves to measure the validity of the questionnaire. After successfully conducting the analysis using the PLS Algorithm in Figure 1, it shows that the indicator value for each construct shows more than 0.7. In this study, validity testing was conducted using convergent validity and AVE (Average Variance Extracted). The AVE value in Smart PLS is used to assess how much of the indicator variance can be explained by the measured latent construct. The instrument is declared valid if AVE value is >0.5 and outer loading value is >0.7 .

Based on the results of Table 1, outer loading value for each

indicator item in the coach-athlete intimacy, parental support, emotional regulation, competitive anxiety, and gender variables showed more than 0.7, and AVE (Average Variance Extracted) value showed more than 0.5. Then, the second analysis in the outer model was the reliability test.

In this study, the researchers used two types of reliability tests: Cronbach Alpha test and Composite Reliability test. Cronbach Alpha measures the lowest reliability value (lowerbound). Data is considered good if it has a Cronbach Alpha value >0.6 . Composite reliability measures the actual reliability value of a variable. Data is considered highly reliable if it has a Composite Reliability score >0.7 .

Table 2. Results of reliability test

Variabel	Cronbach's Alpha	Composite Reliability
Coach-Athlete Intimacy (X1)	0,923	0,935
Parent's social support (X2)	0,917	0,931
Emotion regulation (X3)	0,874	0,904
Competition anxiety (Y)	0,859	0,914
Gender (Z)	0,764	0,855
X1*Z	1,000	1,000
X2*Z	1,000	1,000
X3*Z	1,000	1,000

Based on the calculations in Table 2, it was found that all instrument items were reliable, with all variables having a Cronbach Alpha score >0.6 and Composite Reliability >0.7 . Therefore, the research data can be continued to the inner model stage.

Inner Model

This inner model analysis is intended to test path coefficients for each construct. So, this analysis uses Bootstrapping menu. Bootstrapping menu can also be found in the 'calculate' section. This test analyzes to effect of independent variable on dependent

Table 3. Results of relationship between independent variable and dependent variable

	Original Sample (O)	T Statistics (O/STDEV)	P Values
Coach-Athlete Intimacy (X1) -> Competition anxiety (Y)	0,295	3,133	0,027
Parental Support (X2) -> Competition anxiety (Y)	0,400	3,177	0,024
Emotion Regulation (X3) -> Competition anxiety (Y)	0,314	3,118	0,008
X1*Z -> Competition anxiety (Y)	0,341	2,167	0,041
X2*Z -> Competition anxiety (Y)	0,372	2,125	0,003
X3*Z -> Competition anxiety (Y)	0,302	2,128	0,037

variable based on gender as a moderator. The following are the results of Table 3, in the hypothesis test.

Based on the results of table 3, Coach-Athlete Intimacy on Competition Anxiety obtained a T statistic of 3.133 > 1.960 and p value of 0.027 ($p < 0.05$) resulting in a significant influence where coach-athlete intimacy influences an athlete's competition anxiety. Parental support on competition anxiety obtained a T statistic score of 3.177 > 1.960 and p value of 0.024 ($p < 0.05$) resulting in a significant influence where parental social support influences an athlete's competition anxiety. Emotional Regulation on competition anxiety obtained a T statistic score of 3.118 > 1.960 and p value of 0.008 ($p < 0.05$) resulting in a significant influence where emotional regulation influences an athlete's competition anxiety.

Coach-athlete intimacy towards competition anxiety with gender as a moderator showed a statistical T score of 2.167 > 1.960 and p value of 0.041 ($p < 0.05$). Parental support towards competition anxiety with gender as a moderator showed a statistical T score of 2.125 > 1.960 and p value of 0.003 ($p < 0.05$). Emotional regulation towards competition anxiety with gender as a moderator showed a statistical T score of 2.128 > 1.960 and a value of 0.037 ($p < 0.05$).

Discussion

The findings of this study indicate that the higher the coach-athlete intimacy, the greater the influence on competitive anxiety in amateur boxing students. This theoretical explanation can be viewed from the perspective of interpersonal relationships in the context of sports achievement. When coaches and athletes are close, committed, and complement each other, the coach is able to provide emotional support, understanding, open communication, and adaptive feedback (Mandan et al., 2024 & Latief et al., 2024). Previous research has found that the coach-athlete relationship is significantly correlated with the experience of competitive anxiety (Kassim et al., 2022); (Indarto et al., 2025). Amateur boxing students may experience a state where good intimacy with their coaches helps reduce anxiety because they feel supported, cared for, and secure in the face of competition. Therefore, the findings of this study are consistent with previous findings that the coach-athlete relationship is a protective factor against anxiety.

The results of moderation showed that gender moderated the effect of coach-athlete intimacy on competition anxiety ($T = 2.167$; $p = 0.041$). This means that the effect of intimacy on competition anxiety is different for male athletes compared to female athletes. This can be explained by looking at the socio-cultural context and gender characteristics in coach-athlete interactions. Female athletes may be more sensitive to the emotional and relational aspects of the coach-athlete relationship and utilize closeness to reduce anxiety, while male athletes may be more focused on technical or competitive aspects, so emotional closeness may have a slightly different effect (Powers et al., 2020 & Saarinen et al., 2023). Although previous research specific to gender moderation of the coach-athlete relationship on anxiety is limited, a new de-

velopmental model of the coach-athlete relationship suggests that gender may moderate multiple psychological pathways (Wei et al., 2025). Thus, these findings suggest that in the context of boxing student-athlete and coach-athlete relationships, it is important to consider gender differences as a moderating factor. This suggests that coaches and training programs may need to be tailored sensitively to gender for this coach-athlete relationship intimacy to be truly effective in reducing anxiety.

The results of the study also showed that parental support significantly influenced competition anxiety. The theoretical explanation is that student-athletes are at an age and developmental stage where family support is crucial (Imtihansyah et al., 2024). Adolescent involved in boxing pressures from training, school, and competition (Prabowo et al., 2024). If parents provide social support (emotional, instrumental, informational) then athletes feel they have a source of security and self-confidence that can mitigate competition anxiety (Mandan et al., 2024). A recent meta-analysis of the literature found that general social support generally had a negative impact on anxiety and stress in athletes (Luo et al., 2025). While the article did not specifically address parental support, it did reinforce the importance of family as a source of support in reducing anxiety. Thus, the research findings consistently demonstrate that the greater the parental support, the lower the athlete's perceived competitive anxiety.

Gender moderation of the effect of parental support on competitive anxiety was also shown significant ($T = 2.125$; $p = 0.003$). This means that the effect of parental support on competitive anxiety differs between male and female athletes. Based on previous scientific evidence, this can be explained by the fact that female athletes may rely more on parental emotional support when dealing with competitive pressure, while male athletes may respond differently to such support through support in technical or performance aspects rather than emotional ones (Rumahpasal et al., 2020 & Lev et al., 2020). Research on parental education styles and gender in athletes shows that there are differences in parental education styles based on the gender of the child (González-García et al., 2023). These findings suggest that in the context of Indonesian boxing student-athletes, parental involvement and its effects on competition anxiety should be tailored based on the athlete's gender. For example, parent training for female athletes could emphasize emotions and emotional empowerment, while for male athletes it might focus more on practical support and resource mobilization.

The emotional regulation variable significantly influenced competitive anxiety ($T = 3.118$; $p = 0.008$). Contextually, athletes who possess good emotional regulation skills, such as cognitive reappraisal (reinterpreting situations), efforts to control negative emotional expression (suppression), or attention regulation, will be better able to cope with pre-competition pressure and reduce the emergence of competitive anxiety (Agustina & Widyastuti, 2023 & Bird et al., 2023). Then, a study found that emotion regulation was a significant predictor of competition anxiety, with athletes who used adaptive regulation strategies experiencing lower

anxiety (Amaro & Brandão, 2023). So this finding is in line with the literature, that increasing emotional regulation can reduce competition anxiety in boxing student athletes.

Furthermore, gender also moderated the relationship between emotion regulation and competitive anxiety ($T = 2.128$; $p = 0.037$). Therefore, the influence of emotion regulation on competitive anxiety differs between male and female athletes. The literature shows that male and female athletes have differences in emotion regulation scores, with males tending to be better at regulation according to the study (Oktavia & Jannah, 2022). These findings suggest that female athletes with high levels of emotional regulation experience greater benefits in reducing competitive anxiety than male athletes, or conversely, that male athletes require different regulation strategies for optimal effectiveness. Therefore, emotional regulation interventions to reduce competitive anxiety need to consider gender as a moderating factor. Several previous studies have suggested that emotional regulation programs for female athletes can emphasize emotional aspects and reflection (Rens et al., 2021). Meanwhile, for male athletes, physical control and mental readiness components can be included (Salehian et al., 2021).

This study has several limitations that need to be considered, including the use of a quantitative descriptive method that only describes the relationships between variables without delving into the psychological and social aspects in depth. The population size was limited to amateur boxing students in the Special Region of Yogyakarta (Province DIY), making the results unable to be generalized to athletes from other regions or different sports. Furthermore, the use of the Smart PLS-assisted Structural Equation Modeling (SEM) approach focused on linear relationships between latent variables and did not test alternative, possibly more complex, models. The data was also self-reported, potentially leading to bias in respondents' subjective perceptions of their relationships with coaches, parental support, and emotional regulation. This study also did not consider other external variables such as competition experience, additional psychological conditions, or self-confidence levels that may influence competition anxiety.

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Conflict of Interest

The researchers have no conflicts of interests.

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Therefore, future research is expected to use a mixed-method design to be able to explore the qualitative aspects of interpersonal relationships and emotions of athletes in more depth, expand the population to various provinces and sports to increase the generalizability of the results, and test mediation and non-linear models to be able to understand more comprehensively how social and psychological factors interact to influence the competition anxiety of student athletes in Indonesia.

Conclusion

This study concluded that coach-athlete intimacy, parental support, and emotional regulation significantly influenced competition anxiety in amateur boxing students in Indonesia. These findings indicate that emotional closeness between coaches and athletes can create a sense of security, trust, and psychological support that play a significant role in reducing pre-competition anxiety levels. Social support from parents, whether emotional, motivational, or instrumental, has also been shown to have a positive influence in helping athletes cope with competitive pressure. Furthermore, good emotional regulation skills enable athletes to manage stress and emotional reactions adaptively, thereby suppressing the emergence of competitive anxiety.

This study also found that gender acts as a moderating variable that strengthens or influences the relationship between the third main variable and competition anxiety. This means that the influence of coach-athlete intimacy, parental support, and emotional regulation on competition anxiety differs between male and female athletes. This difference emphasizes the importance of a gender-sensitive approach in the psychological training of boxing student-athletes. Thus, this study confirms that positive interpersonal relationships, adequate family support, and good emotional regulation skills are important psychological foundations for reducing competition anxiety, and that sports training strategies should consider gender differences for more effective results in the context of developing boxing student-athletes in Indonesia.

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