



# An analysis of anxiety levels among volleyball athletes during a provincial inter-club tournament in Jakarta, Indonesia

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## ABSTRACT

**Background:** Competitive anxiety is a key psychological factor that can significantly affect an athlete's performance. In volleyball, high-pressure situations often lead to anxiety, potentially hindering players' ability to perform optimally.

**Objectives:** This study aims to assess the levels of anxiety experienced by volleyball athletes competing in the Special Capital Region Jakarta Inter-Club Provincial Championship.

**Methods:** A descriptive quantitative design was used, with data collected through a survey involving 70 volleyball athletes. The instrument used was a 35-item anxiety questionnaire categorized into two phases: before the match (18 items) and during the match (17 items). Responses were measured using a 5-point Likert scale. Validity testing confirmed all items were valid, and the instrument showed high reliability ( $\alpha = 0.954$ ), as analyzed using SPSS 23.

**Results:** During the match, 35.7% of athletes experienced high anxiety, while 64.3% showed low anxiety. Prior to the match, 44.3% reported high anxiety and 55.7% reported low anxiety. Overall, 36.6% of athletes showed high anxiety levels, while 61.4% displayed low levels. These results indicate that most athletes have relatively good emotional regulation abilities in competitive situations.

**Conclusions:** The study underscores the critical role of psychological readiness in athletic performance. Coaches and policymakers are encouraged to integrate structured mental training programs into athlete development. Future research should explore variables contributing to anxiety, such as playing position, competitive experience, and demographic factors like age and gender.

**Keywords:** anxiety, mental preparation, sport psychology, volleyball.

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## INTRODUCTION

A substantial number of sports experts concur that an athlete's level of maturity and mental fortitude, defined as psychological resilience, in confronting challenges during a competition, is a pivotal factor in determining their performance. The scientific study of behavior and mental processes in the context of sport is known as sport psychology, if psychology is defined as the scientific study of behavior and mental processes (Croix et al., 2024). Furthermore, the field of exercise psychology emphasizes enhancing performance through training regimens. In contrast, sports psychology focuses on refining performance quality and utilizes the period following a match or triumph as a metric (Devi et al., 2023).

Sports psychology is defined as a network of sports sciences that aims to enhance the effectiveness of athlete training, accelerate the learning process, and eliminate psychological barriers to achieving desired results (Shoxrux, 2023). Athletes may occasionally encounter a diminution in performance. Numerous factors can influence an athlete's performance, including excessive anxiety before competition. One psychological component that has been demonstrated to affect athletes in competitive scenarios is competition anxiety (Maulana & Khairani, 2017). Anxiety is frequently regarded as a typical reaction in a sports context to circumstances in which an athlete's capabilities are being assessed (Ford et al., 2017). The occurrence of sports tournaments has been demonstrated to elicit feelings of anxiety and other unpleasant emotions among athletes (Rossi et al., 2024).

The presence of unpleasant tension, intrusive thoughts, and associated physical symptoms is a hallmark of anxiety (Yang et al., 2024). Anxiety can be categorized into two distinct types: cognitive anxiety, characterized by fear of future events, and somatic anxiety, characterized by measurements of a person's physical condition (Tangkudung & Mylsidayu, 2017). Symptoms such as stiff movements, cold sweats, loss of concentration, and pessimism in an athlete may indicate excessive tension (Mylsidayu & Kurniawan, 2015). Consequently, anxiety can hinder an athlete's concentration, coordination, and self-confidence, potentially impeding them from achieving their full potential in competition (Nurhadi, Sembiring, & Dewi, 2023). Almost everyone has experienced anxiety; only the level and intensity are different.

Controlling anxiety and competitive aggression is essential for a volleyball player's performance in a fast-paced sport like volleyball, where quick thinking and teamwork are crucial for success, especially when considering the benefits of emotional regulation. Athletes who employ cognitive reframing, deep breathing, and self-talk techniques can attain practical success in high-stress situations because these athletes will have higher self-confidence, make fewer mistakes due to stress, and play with greater consistency (Vodicar, Kovac, & Tusak, 2012). This study aims to identify athletes with a strong passion for volleyball and maintain optimal physical fitness (Olivar et al., 2024). Achievement is a critical component of the training process, as it has been demonstrated to be a significant predictor of success (Khoirudin et al., 2023).

A substantial body of research has previously indicated a different degree of anxiety among volleyball athletes. Recent research indicates that volleyball athletes from Surabaya State University experienced anxiety in the absence of a sufficient number of matches. However, some athletes demonstrated high scores, primarily due to their composure during matches (Baghaskara et al., 2025). The findings of our investigation demonstrated that, although the initial assessment of anxiety at the

September 2019 preliminary testing was deemed elevated, the subsequent assessment of anxiety revealed a significant decrease (Sopa, 2021). In contrast, volleyball players who reported sufficient skills in managing their competitive nervousness exhibited lower levels of anxiety (Šadrincevaitė & Gričiūtė, 2023). Compared with both groups, Senior State and Youth National volleyball players exhibited a higher level of competition anxiety. Conversely, Youth National volleyball players demonstrated the lowest levels of anxiety (Vamsikrishna & Selvam, 2022).

Additionally, a significantly reduced level of depression was observed. Specifically, compared to men, women demonstrated elevated levels of state and trait anxiety (Vaccaro et al., 2021). However, the extant literature has yielded conflicting results, with some studies demonstrating low, moderate, or high levels of anxiety, depending on the athlete.

Although several international studies have investigated competitive anxiety in team sports, such as the findings of Kemarat et al. (2022) showing the relationship between personality characteristics and anxiety in team and individual athletes in PLOS ONE, as well as research by Varzaneh et al. (2011) comparing perceptions of competitive anxiety and the use of psychological strategies between elite and non-elite players in rugby union, studies specifically in volleyball are relatively limited. Additionally, findings from local studies such as Baghaskara et al. (2025) on Surabaya volleyball students reported that most athletes exhibited low anxiety (88.2%) before the match, but without distinguishing between pre-match and in-match anxiety phases. Given this gap, this study will investigate competitive anxiety levels separately before and during competition among volleyball athletes at the provincial level in Jakarta (Kejurprov). This group has not been systematically studied. This study addresses the lack of region-specific literature through a descriptive quantitative approach and a valid and reliable 35-item instrument ( $\alpha = 0.954$ ). It provides empirical data that is valuable for regional-level mental training interventions. Unlike previous studies conducted in Surabaya and at the national level, this study focuses on club athletes at the Special Capital Region of Jakarta provincial level, which has not been explored much.

This study aims to ascertain and describe the extent of anxiety experienced by volleyball players during official competitions, with a particular focus on the Provincial Championship (Kejurprov) among Special Capital Region of Jakarta teams. The present study is principally concerned with the psychological condition of athletes prior to and during competition, to acquire a more precise understanding of the distribution and severity of competitive anxiety experienced by athletes. The findings of this study are significant in terms of their contribution to the advancement of sports psychology, particularly in establishing the foundation for the development of psychological intervention strategies, such as emotion or mental management training. Consequently, the findings of this research are beneficial for those involved in sports, such as coaches and sports psychologists, as well as for developing more comprehensive athlete coaching policies.

## METHODS

### Study Design and Participants

The objective of this study is to ascertain answers to the aforementioned questions through applying scientific methods (Sulistiyowati & Astuti, 2017). This research is of a quantitative descriptive nature, as it seeks to elucidate phenomena through the

utilization of numerical data that illuminates the characteristics of the subjects under study (Kusumawati et al., 2022). The approach employed in this study is a survey. In this study, data were collected using a questionnaire distributed to athletes. The anxiety measurement instrument developed by Tangkudung (2018) is administered via a questionnaire comprising 35 questions, which are divided into two categories: A total of 17 inquiries were made during the match, while 18 inquiries were made prior to the commencement of the match. The responses were evaluated using a Likert scale with five response options. The collection of data occurred concurrently with the match.

The study employs the term "population" to denote the entire group or segment that is the subject of the study (Asrulla et al., 2023). The population under study consists of volleyball club athletes in Special Capital Region of JAKARTA who are pre-teens and teenagers, with an average height of 160-175 centimeters. The analysis was conducted using purposive sampling with SPSS 23. The collection of data occurred concurrently with the matches. The organizing body formally endorsed the study, the Jakarta Volleyball Association (PBVSI Special Capital Region of Jakarta), which formally confirmed that the research was conducted during the event.

### Ethical approval statement

This study has obtained ethical clearance with the number E.1.105/UNISMA.LPPM/E/VI/2025 from the Research and Community Service Institute (LPPM) of Universitas Islam 45 Bekasi, Indonesia. This study has also received official permission from the Provincial Board of PBVSI Special Capital Region of Jakarta, as evidenced by the approval letter NO.006/Pengprov-DKI/VI/2025. All human participant procedures were conducted by the ethical standards outlined in the Declaration of Helsinki. All participants provided written informed consent prior to data collection.

### Research Instruments

The instrument employed in this study was a questionnaire (Table 1). The tool was adopted from Tangkudung (2018), which contained 35 questions after consulting with relevant experts. The questions were divided into two categories: during and before the match, containing 17 and 18 questions. The sample size of this study was 70 volleyball athletes.

**Table 1.** Question Indicators

| Indicator | Sub Indicator   | Question Item No.  |          |
|-----------|-----------------|--|----------|
|           |                 | Positive   | Negative |
| Anxiety   | During The Game | 1,3,4,5,6,7,8,<br>9,10,11,12,13,<br>14,15,16,17  | 2        |
|           | Before The Game | 18,20,22,23,24,<br>25,26,27,28,29,<br>31,32,33,34,35<br>,25,26,27,28,29,<br>31,32,33,34,35 | 19,21,30 |

The researchers conducted a validity test. In essence, a validity test is a process of evaluating the components of an instrument. The objective of this study is to ascertain the instrument's suitability for research applications. The 35-item survey was deemed valid. The validation of an item is contingent upon attaining a calculated R value that exceeds the R table threshold, while maintaining a significance level of 5% and a

reliability result of 0.954, as determined by the instrument employed. The committee and coaches permitted the researchers to distribute questionnaires to the athletes before data collection. Before administering the questionnaire, the coaches and athletes were informed of the objective of the research and the methodology for its completion. Subsequently, the coaches were given the link to the questionnaire to disseminate to the athletes under supervision.

Data Analysis

Data analysis uses quantitative descriptive statistics. Quantitative research studies a construct that can be measured (González-García, 2024). Quantitative research aims to analyze numerical data (Kotronoulas et al., 2023). A Likert scale with five response options is used for scoring calculations, categorized as positive or negative (Table 2). This scale uses points from 1 to 5. Frequency distribution and anxiety levels are calculated using data analysis conducted with Microsoft Excel and SPSS version 23.

Table 2. Likert scale

| Likert Scale         | Positive | Point Negative |
|----------------------|----------|----------------|
| Point Strongly Agree | 5        | 1              |
| Agree                | 4        | 2              |
| Doubt                | 3        | 3              |
| Disagree             | 2        | 4              |
| Strongly Disagree    | 1        | 5              |

In order to achieve the research objectives, a data analysis was conducted by comparing scores for each psychological level and sub-indicator. Prior to determining the criteria, the researchers employed the following formula to determine the criteria (Memet et al., 2021).

RESULTS

Researchers collected data on the day of the competition, with 70 athletes in the pre-adolescent and adolescent categories completing the questionnaire. As illustrated in Figure 1, athletes in the pre-teen category comprise 10%, while athletes in the teen category account for 15%. The study results indicate that the proportion of athletes in the teen category is greater. Additionally, male athletes contribute 18% of the total, and female athletes contribute 7%. The results of the study indicate a preponderance of male athletes. As illustrated in Figure 2, the age range of athletes is distributed as follows: 41% are between the ages of 10 and 15, and 8% are between the ages of 16 and 20. The results of this study indicate that athletes in the 10-15 age category exhibit a higher percentage of the total. The data calculation results from the questionnaire comprised 35 questions filled out by 70 respondents. The average anxiety score given by respondents is presented in Table 3.

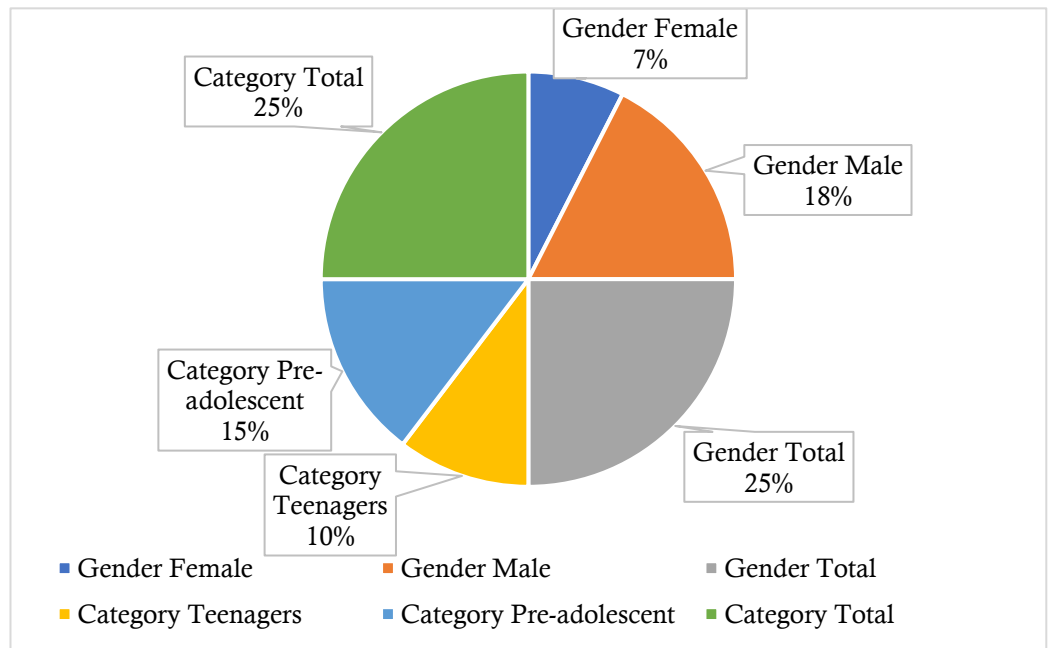
Table 3. Descriptive Statistics

| Statistic Total Score |         |       |
|-----------------------|---------|-------|
| N                     | Valid   | 35    |
|                       | Missing | 0     |
|                       | Mean    | 81,97 |

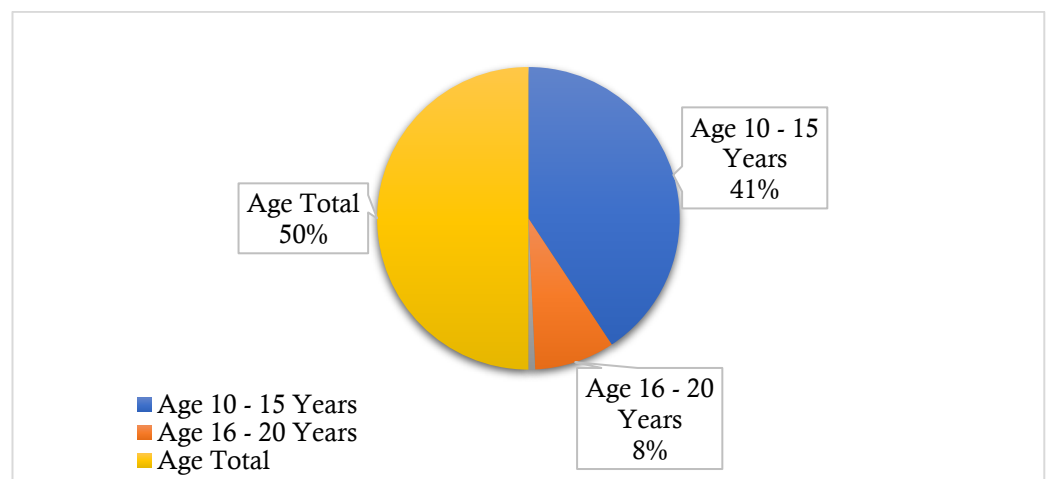
The mean score obtained from these calculations was 81.97. The researcher employed a two-category system to categorize the data: low and high. Athletes with anxiety scores below 81.97 were designated as having low anxiety, while those with



scores above 81.97 were classified as having high anxiety. The objective of this study is to utilize SPSS Version 23 to calculate the level of anxiety experienced by athletes during and before competition. The results of this analysis will provide valuable insights into the emotional state of athletes under competitive pressure.



**Figure 1.** Distribution of Research Participants Based on Gender and Age Categories



**Figure 2.** Percentage of Respondents in Each Age Category

**Table 4.** During The Match

|       | Frequency | Percent |
|-------|-----------|---------|
| High  | 25        | 35,7    |
| Low   | 35        | 64,3    |
| Total | 70        | 100,0   |

As indicated by the data in the [Table 4](#) and the results obtained above, we can see a balanced distribution of anxiety levels among the athletes. Twenty-five athletes, representing 35.7% of the total sample, exhibited high levels of anxiety during the competition, while 35 athletes (64.3%) exhibited low anxiety levels. This balanced distribution of anxiety levels provides an objective view of the mental state of the athletes during the competition. In light of the aforementioned data, it can be

deduced that, of the total 70 athletes in competition, 35 exhibited low anxiety levels, while 25 demonstrated high anxiety. The proportion of athletes exhibiting low anxiety levels exceeds that of those experiencing high anxiety, maintaining the balance of the data.

**Table 5.** Before The Match

|       | Frequency | Percent |
|-------|-----------|---------|
| High  | 31        | 44,3    |
| Low   | 39        | 55,7    |
| Total | 70        | 100,0   |

Preliminary analysis of the pre-match [Table 5](#) and the results obtained above indicates that 31 athletes, representing 44.3% of the sample, experience high anxiety prior to competition. Also, 39 athletes, or 55.7% of the sample, said they had little nervousness before a competition. In light of the aforementioned data, it can be deduced that 39 of the 70 athletes set to compete are experiencing low anxiety, while 31 of them are experiencing high anxiety. The proportion of athletes exhibiting low anxiety levels exceeds that of those experiencing high anxiety.

**Table 6.** Emergency Results

|       | Frequency | Percent |
|-------|-----------|---------|
| High  | 27        | 36,6    |
| Low   | 43        | 61,4    |
| Total | 70        | 100,0   |

As indicated by the anxiety results presented in [Table 6](#), 27 athletes (36.6%) exhibited elevated anxiety levels, while 43 athletes (61.4%) demonstrated reduced anxiety symptoms. The data and percentages presented herein indicate that a greater proportion of athletes experienced low anxiety.

## DISCUSSION

The study's results indicated that most volleyball athletes participating in the Special Capital Region of Jakarta Inter-Club Provincial Championship exhibited low anxiety levels both before the match (55.7%) and during the match (64.3%). These findings suggest that most athletes demonstrate high emotional control and mental readiness when confronted with competitive pressures.

The findings of this study are pertinent in demonstrating that the majority of students exhibit low anxiety levels (88.24%), with an average score of 36.941 ([Baghaskara et al., 2025](#)). This suggests that most students who play volleyball in the sports department at Universitas Negeri Surabaya experience minimal anxiety during matches. However, some achieve high scores, which can be evaluated particularly in terms of their level of calmness when facing matches.

These findings are also relevant to a study conducted on 20 extracurricular volleyball athletes at Balung High School, which identified three main phases of anxiety: before the match, during the match, and after the match. The highest level of anxiety was recorded at 39% following the match, the lowest was noted at 26% during the match, and the lowest before the match was recorded at 18% ([Muzakhi et al., 2025](#)). This study posits that athletes require comprehensive mental training that extends beyond the confines of the classroom setting, given the multidimensional and persistent nature of their anxiety.

In a comparative study on team versus individual sports, anxiety levels before the match were categorized as moderate in both groups (team sports: 42%; individual

sports: 43%) (Gusriansyah, Sulastio, & Wedi, 2025). These results resonate with findings by Woodman and Hardy (2003), who noted that athletes in both sport types experience performance-related anxiety, albeit influenced by different situational triggers and coping styles.

A subsequent study, which compared anxiety levels between men and women, demonstrated that women exhibited significantly lower trait anxiety ( $p = 0.038$ ) and depression ( $p = 0.018$ ) levels compared to men (Vaccaro et al., 2021). The primary effect of gender was found to be significant. Specifically, women exhibited elevated levels of state and trait anxiety relative to men. A discrepancy was identified in the trait anxiety and depression scores of the two groups; however, no such discrepancy was observed in the state anxiety scores. Furthermore, anxiety levels did not significantly influence the values of amateur and volleyball players in the categories under study. Significant gender differences were identified in both state and trait anxiety. Specifically, the mean score for female participants exceeded that of their male counterparts.

Despite a general trend of low anxiety, approximately 36.6% of the athletes in this study still experienced high anxiety. This subgroup may be affected by insufficient psychological training, external pressures (e.g., from coaches or family), or limited exposure to high-stakes competition. According to Mellalieu, Hanton, and Fletcher (2009), inadequate coping mechanisms and a lack of competitive experience can exacerbate anxiety and negatively impact performance. These findings emphasize integrating structured psychological skills training—such as relaxation techniques, imagery, and cognitive restructuring—into athletic programs (Vealey & Greenleaf, 2021).

### **Limitations of the study**

This study is subject to several limitations, including online questionnaires. The respondents encountered various technical challenges, including unstable internet connections, insufficient data packages, depleted phone batteries, and difficulty comprehending the questions. It should be noted that not all athletes had phones. Furthermore, some coaches were reluctant to include their athletes as samples in this study. Many athletes indicated they would complete the questionnaire at home due to time constraints, yet subsequent analysis revealed that several athletes did not complete it.

For future research development, combining quantitative and qualitative approaches, such as in-depth interviews, is important to obtain a comprehensive picture of the most dominant factors causing anxiety. This is because the utilization of respondent questionnaires has the potential to generate inaccurate results. Furthermore, the integration of mental training within development programs can be explored, with a subsequent evaluation of its efficacy in mitigating anxiety. Before implementing mental training, it is recommended that respondents be assessed to ascertain the subsequent steps to be taken.

## **CONCLUSIONS**

The psychological condition of athletes is critical, especially in mental preparation before a match. The results show that the majority of athletes can manage their anxiety during official competitions, although there are a large number of people who are very anxious before the games. In addition, the study found that several variables,



including competition experience, team support, and an individual's ability to manage the pressures of competition, can affect different levels of anxiety in athletes. Therefore, these findings can serve as a basis for coaches, clubs, and policymakers to design more organized mental coaching programs to improve athletes' mental readiness for matches.

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## DATA AVAILABILITY

All data supporting the findings of this study are included in the article and its supplementary materials. Additional datasets are available from the corresponding author upon a reasonable request.

## FUNDING

This research did not receive external funding.

## CONFLICT OF INTEREST

The author states that this study was carried out independently, with full integrity, and without any conflicts of interest involving any organization, institution, or individual. There were no financial, professional, or personal affiliations that could have influenced the design, data collection, analysis, or interpretation of the research.

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