


## Analysis of Factors Influencing Anxiety Levels Among Taekwondo Athletes at the Student Education and Training Center (PPLP), Central Sulawesi Province, 2025

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ARTICLE INFO	ABSTRACT
<p><b>Article History:</b> Received Accepted Published online</p>	<p><i>Mental health is a significant public health concern affecting individuals across all age groups, with adolescents representing a particularly vulnerable population. The 2022 Indonesian National Adolescent Mental Health Survey (I-NAMHS) reported that one in three Indonesian adolescents (34.9%), equivalent to approximately 15.5 million individuals, experience mental health problems, with 2.45 million having diagnosed mental disorders. Athletes, particularly young individuals undergoing structured training, are exposed to unique stressors such as competitive pressure, training intensity, and performance expectations, which may increase their risk of anxiety. Elevated anxiety levels can negatively affect not only athletic performance but also overall well-being and development. Preliminary local data from Central Sulawesi athletes participating in the 2022 pre-PON indicated concerning anxiety levels (6% very high, 45% high). Considering the critical role of the Student Education and Training Center (PPLP) in developing young athletes, understanding their mental health status—particularly anxiety levels—is essential to provide appropriate support and optimize athlete development. This study specifically focuses on Taekwondo athletes in the PPLP Central Sulawesi program. This study employed a quantitative analytical observational design with a cross-sectional approach. Total sampling was applied to Taekwondo athletes at PPLP Central Sulawesi (n = all eligible athletes). Data on anxiety and stress were collected using validated questionnaires (DASS-21 and SAS-2). The relationships between age, gender, stress, and anxiety were analyzed using the Chi-square test with SPSS version 30.0 (p &lt; 0.05). A total of 60 Taekwondo athletes were included in the study (April 2025). The majority were male (56.7%) and in late adolescence (60.0%). Stress levels during competition were predominantly categorized as very severe (63.3%), while anxiety levels were most commonly classified as high (38.3%), followed by very low (31.7%). Chi-square analysis showed no significant association between anxiety levels and gender (p = 0.868), age (p = 0.874), or competition-related stress (p = 0.387). Most Taekwondo athletes at PPLP Central Sulawesi were male and in late adolescence. Although stress levels during competition were generally very high and anxiety levels were predominantly high, no significant relationships were found between anxiety and gender, age, or stress levels.</i></p>
<p><b>Keywords:</b> Anxiety; Anxious; Athlete; Taekwondo; PPLP.</p> <p>This is an open access article under the  <a href="https://creativecommons.org/licenses/by-sa/4.0/">CC-BY-SA</a> license.</p>	

## INTRODUCTION

Mental health is a crucial aspect that influences individual well-being across all age groups, including adolescents, who are considered particularly vulnerable to various psychological pressures. Data from the 2022 Indonesian Adolescent Mental Health Survey (I-NAMHS) indicate a significant prevalence of mental disorders among adolescents, reaching approximately 34.9% or 15.5 million individuals.<sup>1</sup> This condition highlights the importance of addressing mental health issues within this age group.

In the context of sports, athletes—particularly young athletes undergoing intensive and structured training programs—face unique pressures that may affect their mental condition. The demands to achieve optimal performance, intense competition, and expectations of success in tournaments can become significant sources of stress. Research has also shown that the COVID-19 pandemic has had a considerable impact on athletes' mental well-being and overall quality of life, with increased reports of anxiety and depression symptoms.<sup>2</sup>

Anxiety is one of the most common mental health issues experienced by athletes and can negatively affect both athletic performance and overall psychological well-being. Preliminary studies in Sulawesi in 2022 indicated relatively high levels of anxiety among athletes. Pre-competition anxiety, for example, may impair focus and reduce the effectiveness of strategies that have been prepared.<sup>8</sup>

The Student Education and Training Center (PPLP) is an important initiative of the Ministry of Youth and Sports aimed at developing young athletes across various sports disciplines. Given the central role of PPLP in fostering high-achieving athletes, understanding the psychological condition of athletes participating in this program—particularly their anxiety levels—is essential. This information is important for designing appropriate interventions and support systems to optimize athlete development holistically, not only physically but also mentally and emotionally.

This study aims to analyze the factors associated with anxiety levels among

Taekwondo athletes who are part of the PPLP program in Central Sulawesi Province.

## MATERIAL AND METHOD

### Research Design

This study employed a quantitative analytical observational design with a cross-sectional approach to examine the relationship between variables related to anxiety levels among athletes.

### Time and Place of Research

This study was conducted at the student education and training center (PPLP) in Central Sulawesi in 2025

### Population and Sample

The population of this study included all Taekwondo athletes at PPLP Central Sulawesi. A total sampling technique was applied, resulting in 60 athletes who met the inclusion criteria being included as the study sample.

### Data Presentation

Data on age, gender, stress levels (DASS-21), and anxiety levels (SAS-2) were collected and analyzed using the Chi-square test with SPSS version 30.0 ( $p < 0.05$ ). The results were presented in the form of tables and descriptive narratives.

## RESULTS AND DISCUSSIONS

**Table 1. Association Between Anxiety Levels and Gender Based on SAS-2**

Anxiety Levels	Male	Female	Total	P-Value
Low	8 (23.5%)	4 (15.4%)	12 (20.0%)	
Very Low	10 (29.4%)	9 (34.6%)	19 (31.7%)	
High	13 (38.2%)	10 (38.5%)	23 (38.3%)	
Very High	3 (8.8)	3 (11.5%)	6 (10.0%)	
<b>Total</b>	<b>34</b>	<b>26</b>	<b>60</b>	<b>0.868</b>

The results of this study on Taekwondo athletes at the Student Education and Training Center

(PPLP) in Central Sulawesi showed that anxiety levels were predominantly categorized as high and very low. Further analysis based on gender did not reveal a statistically significant association with anxiety levels ( $p = 0.868$ ).

These findings are consistent with studies conducted by Safitri et al.<sup>3</sup> and Wijayanti and Utomo,<sup>4</sup> which also reported no significant differences in anxiety levels based on gender.

This suggests that other factors, such as competitive experience, level of self-confidence, and more complex psychological aspects, may play a more dominant role in influencing athletes' overall anxiety levels.

**Table 2. Frequency Distribution of Patients Diagnosed with Stable Angina Pectoris Based on Gender as a Risk Factor**

Anxiety Levels	Early Teenager	Late Teenager	Total	P-Value
Low	6 (25.0%)	12 (20.0%)	12 (20.0%)	
Very Low	17 (29.2%)	19 (31.7%)	19 (31.7%)	
High	9 (37.5%)	23 (38.3%)	23 (38.3%)	
Very High	2 (8.3)	6 (10.0%)	6 (10.0%)	
<b>Total</b>	<b>34</b>	<b>26</b>	<b>60</b>	<b>0.868</b>

The results of this study indicate that there was no significant association between age and anxiety levels among Taekwondo athletes at the Student Education and Training Center (PPLP) in Central Sulawesi ( $p = 0.874$ ).

These findings are consistent with a systematic review and meta-analysis published in the *British Journal of Sports Medicine*, which reported that age generally has no significant relationship with anxiety levels among athletes.<sup>5</sup> This result is also supported by a study conducted in Indonesia by Setiawan et al.,<sup>6</sup> involving adolescent soccer and badminton athletes, which likewise found no significant differences in anxiety levels across age groups.

Although this study did not find a significant association between age and anxiety, the high

prevalence of anxiety observed in both age groups (early and late adolescence) remains an important concern. Coping skills training and confidence-building interventions, as suggested by Wibowo and Lestari,<sup>7</sup> may serve as important strategies to help young athletes manage their anxiety effectively.

**Table 3. Association Between Athletes Stress Levels During Competition (Based on DASS-21) and Anxiety Levels (Based on SAS-2)**

Anxiety Levels	Normal	Mild	Moderate	Severe	Very Severe	p-Value
Low	1 (33.3%)	2 (33.3%)	1 (12.5%)	2 (40.0%)	6 (15.8%)	
Very Low	1 (33.3%)	1 (16.7%)	1 (12.5%)	2 (40.0%)	14 (36.8%)	
High	1 (33.3%)	2 (33.3%)	3 (37.5%)	1 (20.0%)	16 (42.1%)	
Very High	0 (0.0)	1 (16.7%)	3 (37.5%)	0 (0.0)	2 (5.3%)	
<b>Total</b>	<b>3</b>	<b>6</b>	<b>8</b>	<b>5</b>	<b>38</b>	<b>0.868</b>

The results of this study indicate that there was no significant association between athletes' stress levels during competition, measured using DASS-21, and anxiety levels measured using SAS-2 ( $p = 0.837$ ).

These findings are consistent with previous studies involving 589 athletes, which indicated that although stress is associated with other negative psychological aspects such as burnout and strain, its relationship with anxiety is not always linear or statistically significant.<sup>8</sup>

This result is also in line with a study conducted in Indonesia by Andriani and Setyawati,<sup>9</sup> which found no significant correlation between reported stress levels and pre-competition anxiety among basketball athletes in East Java. Similarly, a study by Putra and Hadi<sup>10</sup> on sepak takraw athletes in South Sulawesi showed that situational stress did not significantly predict athletes' cognitive anxiety.

## CONCLUSION

This study involved 60 athletes from the Student Education and Training Center (PPLP) in Central Sulawesi Province in 2025, focusing on the analysis of factors influencing anxiety levels

among Taekwondo athletes. Based on the findings of this study, the following conclusions can be drawn:

1. The majority of Taekwondo athletes exhibited high levels of anxiety (38.3%).
2. There was no significant relationship between gender and athletes' anxiety levels ( $p = 0.868$ ).
3. There was no significant relationship between age and athletes' anxiety levels ( $p = 0.874$ ).
4. There was no significant relationship between stress levels during competition and athletes' anxiety levels ( $p = 0.387$ ).
5. Other factors beyond gender, age, and stress—such as competitive experience, social support, and individual psychological conditions—may play a role in influencing athletes' anxiety levels.

#### AUTHOR CONTRIBUTIONS

Conceptualization, F.P.C. A.S.T.U, M; Methodology, F.P.C.; Validation, A.S.T.U, M; Formal Analysis, F.P.C.; Investigation, F.P.C, Resources, F.P.C.; Data Curation, F.P.C.; Writing-Original Draft Preparation, F.P.C., A.S.T.U and M; Visualization, F.P.C. All authors have read and agreed to the published version of the manuscript.

#### CONFLICTS OF INTEREST

The authors declares that there is no conflict of interest.

#### REFERENCES

1. Indonesia National Adolescent Mental Health Survey. *National Adolescent Mental Health Survey (I-NAMHS) Report*. 2022. <https://qcmhr.org/outputs/reports/12-i-namhs-report-bahasa-indonesia>
2. Walton CC, Rice S, Gao CX, Butterworth M, Clements M, Purcell R. Gender differences in mental health symptoms and risk factors in Australian elite athletes. *BMJ Open Sport Exerc Med*. 2021;7:e000984.
3. Hindiari Y, Wismanadi H. Tingkat kecemasan atlet karate menjelang pertandingan pada anggota Cakra Koarmatim. *J Kesehatan Olahraga*. 2022;10(1):179-186.
4. Lilo DK, Murtono T, Purwanto D. Tingkat kecemasan atlet prapopnas zona V tahun 2022 cabang olahraga bulutangkis. *PENJAGA J Pendidik Jasmani Olahraga*. 2023;4(1):36-43. doi:10.55933/pjga.v4i1.670
5. Safitri RD, Hidayat AN, Fitriyanto K. Perbedaan tingkat kecemasan atlet putra dan putri pada cabang olahraga yang berbeda. *J Ilm SPIRIT*. 2020;11(1):1-10.
6. Wijayanti FE, Utomo HB. Hubungan antara dukungan sosial dengan kecemasan bertanding pada atlet bola voli remaja. *J Empati*. 2018;7(1):1-9.
7. Setiawan A, Putra RA, Anggraini FD. Hubungan antara motivasi berprestasi dan kecemasan pra-pertandingan pada atlet sepak bola usia remaja. *J Sportif*. 2019;5(2):187-196.
8. Wibowo FA, Lestari P. Pengaruh teknik imagery terhadap penurunan kecemasan pra-pertandingan pada atlet bola voli. *J Ilmu Keolahragaan*. 2018;17(1):55-62.
9. Watson AM. Mental health and well-being in athletes. *Sports Health*. 2024;16(2):164-165. doi:10.1177/19417381241230451
10. Andriani N, Setyawati A. Tingkat stres dan

kecemasan pra-pertandingan pada atlet  
bola basket. *J Pendidik Jasmani  
Olahraga*. 2020;8(1):70-77.