Understanding Pre-Competition Stress Through The Transactional Model: Evidence From Student-Athletes of Makassar State University Before POMNAS XIX 2025

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ABSTRACT

This study aimed to describe the perceived stress levels among student-athletes of Universitas Negeri Makassar (UNM) in preparation for the National Student Sports Week (Pekan Olahraga Mahasiswa Nasional, POMNAS) XIX 2025. Using a quantitative descriptive design, the research employed the Indonesian-adapted version of the Perceived Stress Scale (PSS-10) to assess psychological stress one week before the national event. The participants were 75 UNM student-athletes (49 males, 26 females) representing 11 sports disciplines, including pencak silat, athletics, sepak takraw, and beach volleyball. Data were collected online through Google Forms between 1–10 September 2025 and analyzed descriptively using frequency and percentage distributions. Results showed that 17 athletes (22.7%) were categorized as having low stress, 53 athletes (70.7%) as moderate, and 5 athletes (6.7%) as high stress. The predominance of moderate perceived stress indicates that most athletes were in a psychologically adaptive and manageable state during the pre-competition phase, consistent with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984). These findings highlight the need for continuous psychological monitoring and preventive mental-skills training to maintain athletes' readiness for competition. The study contributes to sport psychology literature by providing context-specific data using a culturally validated instrument and offers practical implications for integrating mental health support in university sports programs. The paper includes 11 references, 5 tables, and the Indonesian PSS-10 instrument as supporting material.

AUTHORS' CONTRIBUTION

A. Conception and design of the study;
B. Acquisition of data;
C. Analysis and interpretation of data;
D. Manuscript preparation;
E. Obtaining funding

INTRODUCTION

Mental health is a critical yet often underexplored component of athletic performance, particularly during the pre-competition phase when athletes face not only physical demands but also heightened psychological pressures. When athletes perceive that situational demands exceed their coping resources, stress arises — a phenomenon

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central to the Transactional Model of Stress and Coping (Folkman, 2013). This perceived stress can impair focus, motivation, recovery, and ultimately athletic performance. The challenge becomes more pronounced among university athletes who must balance academic responsibilities and competitive preparation, making the period before major events such as the National Student Sports Week (*Pekan Olahraga Mahasiswa Nasional*, abbreviated as POMNAS) particularly demanding. POMNAS is a biennial multi-sport competition for university athletes across Indonesia, representing the highest level of intercollegiate competition in the country, and serves as a key stage for identifying and developing national-level athletic talent.

Recent investigations have expanded the understanding of stress and anxiety in sport contexts. For instance, (Li et al., 2025) reported that competitive pressure is positively correlated with pre-competition anxiety, with psychological resilience mediating this relationship and coping strategies serving as a moderator. Similarly, (Stokowski et al., 2022) found that perceived stress among NCAA Division III student-athletes was associated with higher sport-specific anxiety, greater neuroticism, and less adaptive coping. Comparable findings have also emerged in Southeast Asia. (Syaifullah et al., 2023) showed that higher perceived stress among pencak silat athletes in Indonesia was negatively correlated with self-esteem and mediated performance outcomes. (Haryanto et al., 2024) further identified significant differences in perceived stress across sport types and readiness levels among provincial athletes in Indonesia. Collectively, these studies confirm that stress plays a crucial role in determining athletes' psychological and performance outcomes, particularly during pre-competition periods.

Despite these advances, several limitations remain. Many Indonesian studies have examined coping mechanisms or motivation but have rarely focused on validating stress instruments within local cultural frameworks. (Asram et al., 2024) emphasized the necessity of culturally adapting the Perceived Stress Scale (PSS) to the Indonesian context to ensure conceptual and linguistic equivalence, while (Erlena et al., 2025) demonstrated the psychometric validity of an Indonesian PSS-10 version among adolescents, underscoring the need for context-sensitive validation. Furthermore, (Chiu et al., 2016) noted that cross-cultural measurement invariance between athletes and non-athletes cannot be assumed without proper adaptation. Consequently, empirical evidence describing how Indonesian student-athletes perceive stress immediately before major national competitions remains limited. This gap warrants a systematic and locally relevant approach to assessing stress in university athletes.

Addressing this gap, the present study aims to describe the perceived stress levels of student-athletes from Universitas Negeri Makassar (UNM) who will compete in POMNAS XIX 2025. This study employs a culturally and psychometrically adapted version of the Perceived Stress Scale (PSS), which underwent translation, expert review, and reliability testing in the South Sulawesi context. By mapping the distribution of stress categories (low, moderate, high) among 77 athletes across diverse sports disciplines and faculties, the study provides baseline evidence on the psychological readiness of Indonesian university athletes. The novelty of this study lies in its application of a

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validated local adaptation of the PSS to capture perceived stress among athletes preparing for national competition and in providing empirical groundwork for developing evidence-based mental-health interventions in collegiate sport settings.

METHODS

This study employed a quantitative descriptive research design, aiming to portray the perceived stress levels among university student-athletes in the pre-competition phase before the National Student Sports Week (Pekan Olahraga Mahasiswa Nasional, POMNAS) XIX 2025. The descriptive design was deemed suitable because the objective of this research was not to test causal relationships but to describe the distribution and intensity of perceived stress within a defined population of athletes. The study was conducted approximately eight days before POMNAS, during the athletes' final preparation period, to capture their psychological state as accurately as possible within the context of upcoming competition stress.

The participants consisted of 77 student-athletes from Universitas Negeri Makassar (UNM) who were officially registered to represent the university at POMNAS XIX 2025. These athletes came from various sports disciplines, including athletics, basketball, beach volleyball, badminton, chess, karate, archery, pétanque, swimming, and sepak takraw. All participants were contacted through the official university sports committee network and were invited to participate voluntarily. Each participant received an online consent form explaining the research purpose, anonymity, and confidentiality. Data were collected through an online questionnaire distributed via Google Forms, ensuring accessibility and convenience for all athletes, many of whom were in the midst of intensive training sessions. A total of 77 student-athletes were contacted and sent the questionnaire link, of which 75 completed the survey before the submission deadline, while two did not respond. Therefore, 75 valid responses were included in the final analysis.

The instrument used was the Perceived Stress Scale (PSS-10), originally developed by (Cohen et al., 1983) and later adapted into Indonesian through a rigorous cultural and psychometric validation process conducted in the South Sulawesi context. The adaptation followed internationally accepted procedures, including forward and backward translation, expert panel review for content and linguistic equivalence, and pilot testing to ensure clarity and cultural relevance. The PSS-10 consists of 10 items rated on a five-point Likert scale ranging from 0 ("never") to 4 ("very often"), with four items (items 4, 5, 7, and 8) reverse-scored. The total score ranges from 0 to 40, where higher scores indicate higher levels of perceived stress. Based on established classification guidelines, scores of 0–13 are categorized as low stress, 14–26 as moderate stress, and 27–40 as high stress. The Indonesian version used in this study demonstrated satisfactory internal consistency reliability in prior validation studies (Cronbach's $\alpha >$ 0.80; (Asram et al., 2024; Erlena et al., 2025)).

Data collection took place between 1 – 10 September 2025, approximately one week before the athletes departed for the national competition scheduled for 18 September

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2025. Each participant was asked to complete the PSS questionnaire based on their experiences during the preceding month. The online format allowed automatic data capture and minimized transcription errors. The research procedure adhered to the ethical principles of voluntary participation, informed consent, and confidentiality of responses. The study was coordinated under the supervision of the UNM Faculty of Sports Science and Health.

For data analysis, descriptive statistics were used to summarize the results, including frequency distributions and percentages for each stress category (low, moderate, and high). The analyses were conducted using Microsoft Excel and IBM SPSS 26.0. Data were reviewed to ensure accuracy and completeness before analysis. This analytical approach was considered adequate to address the research objective — to describe the perceived stress profile of UNM athletes before the POMNAS XIX 2025 — and provides a replicable framework for future studies examining stress levels in university athletic populations.

RESULTS AND DISCUSSION
Result

A total of 75 student-athletes from Universitas Negeri Makassar (UNM) participated in this study. They were officially registered as members of the university's contingent for the National Student Sports Week (Pekan Olahraga Mahasiswa Nasional, POMNAS) XIX 2025. The participants represented various faculties and sports disciplines, reflecting the breadth of UNM's athletic development programs. Of the total respondents, 49 were male (65.3%) and 26 were female (34.7%). The majority came from the Faculty of Sports Science and Health (FIKK), which accounted for 88% (n = 66) of participants, while smaller proportions were from the Faculty of Economics and Business (4%; n = 3), Faculty of Engineering (4%; n = 3), Faculty of Mathematics and Natural Sciences (1.3%; n = 1), Faculty of Social Sciences and Law (1.3%; n = 1), and Faculty of Arts and Design (1.3%; n = 1). This composition demonstrates that the university's sports delegation was dominated by students from sport-related study programs, with only a small portion drawn from other academic disciplines.

Table 1.
Distribution of Respondents by Gender

Gender	Frequency (n)	Percentage (%)
Male	49	65.3
Female	26	34.7
Total	**75**	**100.0**

Source: Based on personal data

Table 2.
Distribution of Respondents by Faculty

Faculty	Frequency (n)	Percentage (%)
Faculty of Sports Science and Health (FIKK)	66	88.0
Faculty of Economics and Business	3	4.0
Faculty of Engineering	3	4.0

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Faculty	Frequency (n)	Percentage (%)
Faculty of Mathematics and Natural Sciences	1	1.3
Faculty of Social Sciences and Law	1	1.3
Faculty of Arts and Design	1	1.3
Total	**75**	**100.0**

Source: Based on personal data

In terms of sports participation, the athletes competed in a wide range of disciplines encompassing both individual and team events. The largest groups came from pencak silat (approximately 17%) and athletics (16%), followed by sepak takraw (15%) and beach volleyball (11%). Other disciplines included pétanque (12%), badminton (5%), chess (5%), archery (5%), karate (4%), swimming (4%), and rock climbing (3%). The dominance of these four major sports—pencak silat, athletics, sepak takraw, and beach volleyball—illustrates UNM's long-standing excellence in endurance-based and precision-oriented sports that require both physical and psychological stability.

Table 3.
Distribution of Respondents by Sports Discipline

Sports Discipline	Frequency (n)	Percentage (%)
Pencak Silat	13	17.3
Athletics	12	16.0
Sepak Takraw	11	14.7
Beach Volleyball	8	10.7
Pétanque	9	12.0
Badminton	4	5.3
Chess	4	5.3
Archery	4	5.3
Karate	3	4.0
Swimming	3	4.0
Rock Climbing	2	2.7
Basketball	2	2.7
Total	**75**	**100.0**

Source: Based on personal data

Analysis of the Perceived Stress Scale (PSS-10) revealed that most student-athletes experienced moderate levels of perceived stress, with 53 respondents (70.7%) classified in the moderate range. Meanwhile, 17 athletes (22.7%) fell into the low-stress category, and 5 athletes (6.7%) were identified as experiencing high levels of perceived stress. These results indicate that although the athletes faced various performance-related demands, most of them were able to maintain their psychological balance and manage pre-competition pressure effectively.

Table 4.
Distribution of Perceived Stress Levels among UNM Athletes

Stress Category	PSS-10 Range	Frequency (n)	Percentage (%)
Low	0–13	17	22.7
Moderate	14–26	53	70.7
High	27–40	5	6.7
Total		**75**	**100.0**

Source: Based on personal data

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Overall, the results suggest that UNM's student-athletes were in a mentally adaptive and focused condition before POMNAS XIX 2025. Moderate stress levels can be interpreted as a functional form of psychological activation, which helps athletes stay alert and motivated under competitive pressure (Kaiseler et al., 2009). However, the small number of athletes who exhibited high stress levels underscores that certain individuals may experience psychological strain beyond the optimal zone. Follow-up communication with these athletes revealed that one of them was recovering from an injury and expressed concern about readiness to compete, while others reported ongoing personal and social challenges unrelated to their sports preparation.

In conclusion, the findings demonstrate that the psychological condition of UNM athletes before the national event was generally stable and manageable. The prevalence of moderate stress reflects the presence of situational pressure that is typical in pre-competition phases but still within a range conducive to peak performance. These results provide an empirical basis for developing preventive and promotive psychological interventions aimed at strengthening mental readiness among university athletes in future competitions.

Discussion

The findings of this study reveal that the majority of Universitas Negeri Makassar (UNM) student-athletes preparing for the National Student Sports Week (Pekan Olahraga Mahasiswa Nasional, POMNAS) XIX 2025 experienced moderate levels of perceived stress. This indicates that, overall, the athletes were able to maintain a balanced psychological state during the pre-competition phase, despite facing demanding training loads and high-performance expectations associated with national-level events. In accordance with the Transactional Model of Stress and Coping proposed (Folkman, 2013), stress emerges when an individual perceives situational demands as exceeding their coping capacity. The moderate stress levels found here reflect an adaptive appraisal—athletes recognize the challenges of competition but still perceive themselves as capable of handling them effectively.

From a sport psychology perspective, moderate stress can serve as a functional level of arousal that enhances attention, motivation, and performance focus when managed properly. This supports the concept of "optimal stress zones," where psychological tension stimulates adaptive effort without overwhelming the individual (Kaiseler et al., 2009). Similar results were observed (Li et al., 2025), who found that athletes with high resilience tend to maintain optimal pre-competition anxiety and use coping strategies that convert stress into performance facilitation. In the same vein, (Contreras et al., 2023) reported that perceived stress among student-athletes is significantly related to sport-specific anxiety and neuroticism, suggesting that stress is multidimensional and linked to emotional personality traits. These findings align with the present study, where athletes' moderate stress levels may represent a balanced psychological response shaped by emotional regulation, experience, and coping resources.

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The presence of a small proportion of athletes (6.7%) experiencing high stress underscores the existence of individual differences in coping capacity. One of these athletes was recovering from an injury, while others faced personal or social concerns outside the sporting context. This observation resonates with (Syaifullah et al., 2023), who found that perceived stress among Indonesian pencak silat athletes negatively correlated with self-esteem and can influence confidence and readiness to perform. Furthermore, (Yu et al., 2025) demonstrated that perceived stress moderates the relationship between psychological capital and athlete burnout—meaning that excessive stress, if unmanaged, can erode motivation and resilience. In this regard, the UNM athletes' overall moderate stress profile might serve as a protective factor against burnout, provided that psychological support mechanisms remain consistent.

The predominance of moderate stress levels also reflects the positive influence of structured coaching systems and peer support. Team cohesion, coach-athlete communication, and a well-organized training environment can buffer stress and promote adaptive coping (Hanton et al., 2012). Such support structures likely helped the athletes interpret competitive stress as a challenge rather than a threat, enhancing their sense of control and readiness. This interpretation aligns with the idea that stress is not solely determined by external pressures but by cognitive appraisal and environmental feedback.

An important contextual factor in this research is the use of a culturally adapted Perceived Stress Scale (PSS-10), validated for the Indonesian context(Asram et al., 2024; Erlena et al., 2025). Cross-cultural validation is crucial because perceptions of stress are deeply shaped by cultural and social meanings (Lee et al., 2006). In collectivist societies such as Indonesia, stress is often mitigated by social cohesion, religious faith, and communal coping mechanisms, all of which can help athletes reinterpret competitive pressure positively. The strong representation of sports such as pencak silat, athletics, and sepak takraw—which demand endurance and technical focus—may also contribute to the observed resilience, as these athletes have likely internalized structured mental discipline through repetitive practice and collective experience.

Overall, the discussion suggests that moderate perceived stress functions as a constructive form of psychological activation among UNM athletes preparing for POMNAS XIX 2025. It indicates psychological readiness rather than vulnerability. However, consistent with findings by (Yu et al., 2025) and (Contreras et al., 2023), prolonged or excessive stress remains a potential risk for decreased well-being and performance fatigue. Therefore, regular psychological monitoring, individualized coping interventions, and mental-skills training—such as self-talk, imagery, and relaxation—should be integrated into athlete preparation programs. Future studies could further explore gender-based differences, longitudinal stress fluctuations across training cycles, and the impact of organizational climate on athletes' mental health to develop a more comprehensive framework for managing stress among Indonesian university athletes.

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CONCLUSION

This study provides empirical evidence on the psychological readiness of university athletes in Indonesia, specifically among 75 student-athletes from Universitas Negeri Makassar (UNM) who were preparing for the National Student Sports Week (Pekan Olahraga Mahasiswa Nasional, POMNAS) XIX 2025. Using the culturally adapted Perceived Stress Scale (PSS-10), the findings revealed that the majority of athletes experienced moderate levels of perceived stress during the pre-competition phase, while a small proportion reported low or high stress levels. These results indicate that most UNM athletes were capable of maintaining emotional stability and functional levels of arousal under competitive pressure, reflecting an adaptive psychological state consistent with the Transactional Model of Stress and Coping (Lazarus, 1999).

The study contributes to the existing body of knowledge by offering context-specific insights into perceived stress among Indonesian university athletes — a population that has received limited scholarly attention. By employing a psychometrically validated Indonesian version of the PSS-10, this research strengthens the cultural applicability of stress assessment tools and advances methodological rigor in sport psychology studies within the Indonesian context. The findings support the notion that moderate perceived stress can serve as a performance-enhancing mechanism rather than a detrimental factor when properly regulated.

However, several limitations should be acknowledged. First, the study used a cross-sectional descriptive design, which restricts causal interpretation and temporal comparison. Second, the data were collected through self-report questionnaires, which may be subject to response bias or social desirability. Third, the sample was limited to athletes from one university, potentially constraining generalizability to broader collegiate or professional athlete populations. Future studies should adopt longitudinal or mixed-method designs, expand to multiple institutions, and incorporate qualitative interviews to capture the complexity of athletes' psychological experiences before, during, and after competition.

Based on the study findings, several recommendations are proposed for practice and future research. For coaches and sport psychologists, it is essential to integrate structured mental-skills training — including self-talk, goal setting, relaxation, and imagery — into the athletes' regular training programs. These interventions can help maintain optimal stress levels, enhance focus, and prevent psychological overload. Establishing accessible mental-health support units within university sports programs would also allow early identification of athletes exhibiting high stress levels or emotional instability.

For university administrators and policymakers, the findings emphasize the need to embed mental-health promotion within broader athlete-development policies. Monitoring perceived stress through validated instruments such as the Indonesian PSS-10 can serve as an evidence-based component of athlete well-being assessments before major competitions.

From a research perspective, future investigations should explore the mediating role of coping strategies and resilience between stress and performance outcomes, compare stress patterns across gender and sport disciplines, and examine longitudinal changes across training cycles. Collaboration between sport scientists and psychologists is crucial to developing culturally grounded models of athlete mental health that reflect Indonesia's collectivist and holistic values.

In summary, this study expands the understanding of perceived stress among Indonesian student-athletes, highlighting that moderate stress represents not a weakness but a sign of adaptive readiness. Sustaining this balance through psychological support, preventive monitoring, and evidence-based training strategies can enhance both well-being and performance in future competitive settings.

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