Cognitive Strategies, Training Load, and Competition Anxiety of Student-Athletes: A Diagnostic Correlational Study

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Abstract

Competition anxiety among student-athletes remains a significant problem affecting performance and well-being. This study applied a **diagnostic correlational design** to examine the influence of cognitive strategies and training load on competition anxiety. Using a survey technique with total enumeration of 70 student-athletes through purposive sampling, the findings revealed that cognitive strategies and training load had a significant positive relationship with competition anxiety, whereas cognitive strategies showed no significant relationship. However, both variables demonstrated a significant **individual and combined influence**, explaining 54.3% of the variance. This finding partially supports the Cognitive Activation Theory of Stress (CATS). Future studies may explore additional variables, while coaches may implement psychological skills training and proper load management to reduce competition anxiety.

Keywords: *Cognitive strategies; training load; competition anxiety of student-Athlete; diagnostic correlational study*

The Problem and Its Settings

1. Competition anxiety is a significant problem among student-athletes, affecting performance, focus, and psychological well-being. High training demands and competitive pressure often lead to increased anxiety, which may negatively influence athletic performance and mental health (Rice et al., 2021).

2. Internationally, athletes experienced competition anxiety across different sports and levels. Studies have shown that excessive pressure and physical demands contribute to psychological stress, which may impair performance. Even

elite athletes are not exempt from experiencing anxiety during competitions (Coyne et al., 2021; Fanchini et al., 2022).

3. In the Philippines, student-athletes also faced similar challenges. Research indicated that many Filipino athletes experience anxiety before and during competitions, which negatively affects their performance. The growing demands in training and expectations from competitions further intensify these experiences (Dela Cruz & Reyes, 2022; Ramos et al., 2023). The same challenges were experienced by student-athletes in the National Capital Region.

4. Despite existing studies, limited research has examined the combined role of cognitive strategies and training load in influencing competition anxiety. Most studies focus on either psychological or physical factors alone, creating a gap in understanding their interaction. Thus, this study was conducted to determine the levels, relationships, and individual and combined influence of cognitive strategies and training load on competition anxiety among student-athletes.

Statement of the Problem

This study determined the influence of cognitive strategies and training load on competition anxiety of student-athletes. Specifically, it aimed to:

1. determine the level of cognitive strategies in terms of imagery, self-talk, and relation; the level of training load in terms of intensity, volume, and frequency; and the level of competition anxiety in terms of cognitive, somatic, and self-confidence.
2. determine the significance of the relationships between cognitive strategies, training load, and competition anxiety among student-athletes.
3. determine the significance of the individual and combined influence of cognitive strategies and training load as factors in competition anxiety among student-athletes.

Hypotheses:

H_{01} H_{01}- There is no significant correlation between cognitive strategies, training load and competition anxiety among student-athletes.
H_{02} H_{02}- There is no individual and combined degree of influence of cognitive strategies, training load as factors of competition anxiety among student-athletes.

Theoretical/Conceptual Framework

This study is anchored on the Cognitive Activation Theory of Stress (CATS) by Ursin and Eriksen (2004). The theory explains how individuals respond to stressors based on their cognitive evaluation and coping mechanisms. It emphasizes that stress responses are influenced by both external demands and internal cognitive processes.

In this study, training load, indicated by intensity, volume, and frequency, represents the external stressor that activates physiological and psychological responses among student-athletes (Coyne et al., 2021). On the other hand, cognitive strategies, such as imagery, self-talk, and relaxation techniques, are coping mechanisms that help athletes manage stress and regulate their responses (Pheng & Zhang, 2021).

Meanwhile, competition anxiety, indicated by cognitive anxiety, somatic anxiety, and self-confidence, reflects the outcome of the interaction between stressors and coping processes (Rice et al., 2021).

The theory suggests that when training demands are high, athletes are more likely to experience increased anxiety. However, the use of effective cognitive strategies may help reduce or manage this anxiety by influencing how stress is perceived and handled. Thus, both training load and cognitive strategies play important roles in determining the level of competition anxiety among student-athletes.

Therefore, this study examined the individual and combined influence of cognitive strategies and training load on competition anxiety, consistent with the assumptions of the Cognitive Activation Theory of Stress.

See Figure 1.

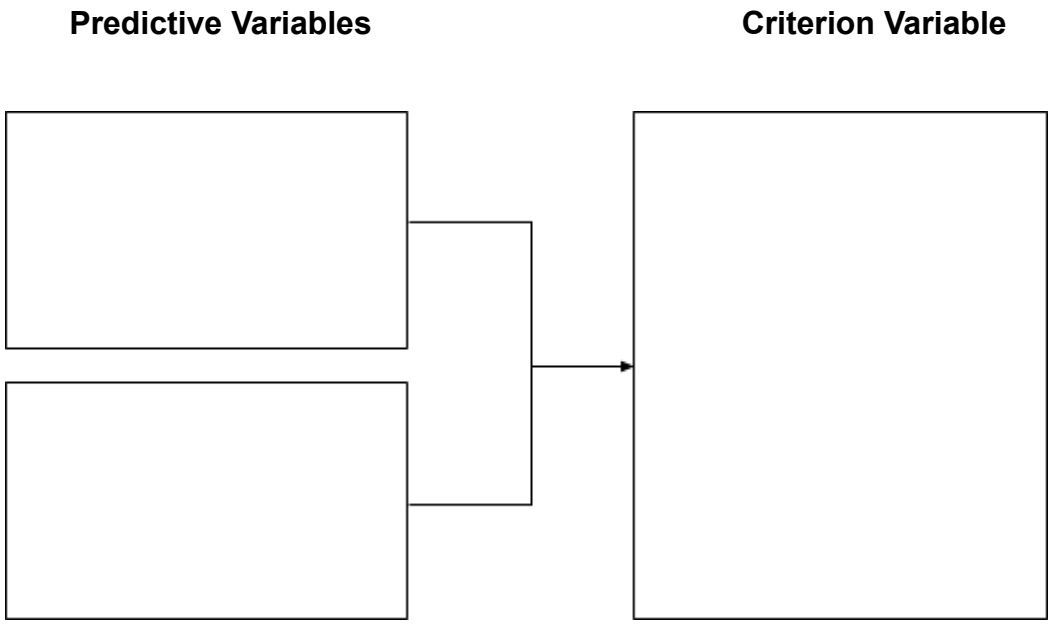

Figure 1. Conceptual Framework of the Study

METHODOLOGY

This chapter included the research design, study locale, sample, and sampling technique, data-gathering procedures, data analysis, and ethical considerations.

Research Design

This study utilized a diagnostic correlational research design. This design was used to determine the relationships and influence among variables and to identify underlying factors affecting a specific phenomenon. It was appropriate for this study as it examined the relationship and individual and combined influence of cognitive strategies and training load on competition anxiety among

student-athletes (Limberg et al., 2021).

Locale of the Study

This study was conducted at a private school in Manila (NCR), focusing specifically on student-athletes. These student-athletes were also active members of the National Collegiate Athletic Association (NCAA). This geographical and institutional setting will provide a diverse yet cohesive environment to examine the interplay of cognitive anxiety among athletes engaged in high-level collegiate competition.

Sample and Sampling Technique

The study involved a total enumeration sample of 70 student-athletes from a private school in Manila who were officially enrolled during the academic year 2025–2026. These respondents were selected because they are directly engaged in competitive sports and are therefore capable of providing relevant data on cognitive strategies and competition anxiety.

A purposive sampling technique was employed in selecting both the school and the respondents. This non-probability sampling method was used to ensure that participants possessed the necessary characteristics and experience relevant to the study's variables. Specifically, only officially enrolled student-athletes actively participating in school sports programs were included.

For the selection of individual respondents, inclusion criteria were applied to ensure data validity and relevance. Participants must be recognized members of their respective school sports teams and currently involved in training and/or competitions during the academic year 2025–2026.

The use of a sample size of 70 is supported by Althubaiti (2022), who emphasized that while formal power analysis is ideal in quantitative research, behavioral and social science studies often rely on practical and heuristic approaches. In such contexts, sample sizes around 70 are commonly accepted and considered sufficient for descriptive-correlational research designs

Data Gathering Technique

The study used an online survey to collect data from respondents. Three standardized and adopted instruments were used in the study. The dependent variable, competition anxiety, was measured using the Sport Competition Anxiety Test (SCAT) developed by Martens (1977), which consists of 15 declarative statements designed to assess athletes' trait anxiety in competitive sport settings. One independent variable, cognitive strategies, was measured using the Cognitive Strategies Inventory (CSI), which contains 15 declarative statements assessing the use of cognitive skills such as self-talk, imagery, goal setting, attention control, and relaxation techniques. The second independent variable, training load, was assessed using the Borg Rating of Perceived Exertion (RPE) Scale, as described by Foster et al. (2001), a widely used instrument for evaluating perceived exertion during physical activity.

The three instruments were consolidated into a single survey questionnaire and reviewed to ensure their suitability for the respondents and alignment with the study's objectives. All items were measured on a 4-point Likert scale to assess respondents' perceptions and experiences of cognitive strategies, training load, and competition anxiety. The instruments are recognized for their validity and reliability and are considered appropriate for use among adolescent athletes in school settings.

Prior to data collection, the consolidated questionnaire underwent reliability testing. Results yielded a Cronbach's alpha coefficient of greater than .90, indicating excellent internal consistency and high reliability of the instrument. Thus, the questionnaire was deemed appropriate for gathering accurate and reliable data for the study.

Data Analysis Technique

The Mean and Standard Deviation (SD) were used to measure the levels of cognitive strategies, training load, and competition anxiety among student-athletes. A lower standard deviation indicates that respondents' scores are clustered closely around the mean, suggesting a high level of consistency or agreement among respondents (Ma et al., 2025).

The Pearson Product-Moment Correlation Coefficient was used to assess the significance of the relationships between cognitive strategies and competition, training load, and competition anxiety (Metsamuuronen, 2022). Furthermore, Multiple regression analysis was also utilized to determine the combined significant influence of cognitive strategies, training load, and competition anxiety among

student-athletes. The following matrix contains the scale and the corresponding level, and the interpretation of the mean.

Scale	***Level***	***Interpretation for Cognitive Strategies***	***Interpretation for Training load***	***Interpretation for Competition Anxiety***
3.26 - 4.00	Very High	Very good	Very good	Very good
2.51 - 3.25	High	Good	Good	Good
1.76 - 2.50	Low	Poor	Poor	Poor
1.00 - 1.75	Very Low	Very poor	Very poor	Very poor

For the interpretation of standard deviation the following percentage standard is followed by Sergent et al., (2024)

% of Scores Covered	**Interpretation Basis**
=68%	Scores are highly consistent
=95%	Scores are moderately dispersed
=99.7%	Scores are highly dispersed

For the interpretation scale of r-value, the following scheme is used as proposed by Guilford (1956)

Computed r	**Descriptive Interpretation**
+/- 1.00	Perfect Correlation
Between +/- 0.75 - +/- 0.99	High Correlation
Between +/- 0.51 - +/- 0.74	Moderately High Correlation
Between +/- 0.31 - +/- 0.50	Moderately Low Correlation
Between +/- 0.01 - +/- 0.30	Low Correlation
0.0	No Correlation

In terms of the Scale of Beta (β) Coefficient Strength, the following scheme, as proposed by Cohen (1988) and Hair et al. (2019), was used:

β Value Range	Strength of Relationship
±0.00 – ±0.09	Very Weak
±0.10 – ±0.29	Weak
±0.30 – ±0.49	Moderate
±0.50 – ±0.69	Strong
±0.70 and above	Very Strong

Ethical Consideration

The study upheld high ethical standards in its engagement with human participants. The researcher adhered to the HCDC SMILE Review guidelines, implementing informed consent and assent procedures, evaluating risks and benefits, and prioritizing participant safety. Privacy and confidentiality were maintained in line with the Data Privacy Act of 2012. Printed informed consent was distributed and collected before participation, and the survey was administered online to ensure voluntary and secure responses. The study posed no foreseeable risks, and participants were assured of safety and autonomy throughout. Data collection and analysis emphasized transparency, impartiality, and accuracy. Responses were treated with strict confidentiality, handled responsibly, and disposed of properly. Participants remained anonymous, and their contributions were acknowledged respectfully. Findings were shared to support inclusive, ethical, and evidence-based educational practices.

RESULTS

This chapter presented the study's results, including the descriptive, correlation, and regression analyses. A summary of the findings is also provided.

Descriptive Analysis

Table 1 presents the descriptive statistics of the study variables, specifically cognitive strategies, training load, and competition anxiety, including their respective indicators. It also shows the number of respondents, the computed means, the standard deviations, and the corresponding descriptive levels. As shown in the table, 70 respondents assessed all variables. The results reveal that most indicators for cognitive strategies showed very high levels, indicating strong use of psychological techniques such as imagery, self-talk, and relaxation. In

contrast, indicators under training load and competition anxiety were generally described as high, indicating strong levels of physical training demands and experienced anxiety among respondents.

Table 1. Descriptive Statistics (n = 70)

Variables	Mean	SD	Descriptive Level
Cognitive Strategies	**3.38**	**0.39**	**Very High**
Imagery	3.36	0.44	Very High
Self-talk	3.36	0.44	Very High
Relaxation	3.42	0.48	Very High
Training Load	**3.24**	**0.48**	**High**
Intensity	3.15	0.63	High
Volume	3.22	0.56	High
Frequency	3.36	0.44	Very High
Competition Anxiety	**2.94**	**0.58**	**High**
Cognitive Anxiety (Worry)	3.19	0.71	High
Somatic Anxiety (Physical)	3.07	0.72	High
Self-Confidence	2.56	0.49	High

Specifically, the table shows that cognitive strategies had an overall mean score of 3.38 (SD = 0.39), indicating a very high level and highly consistent responses among respondents. This indicates that respondents demonstrate a very strong use of cognitive strategies in their performance. Among its indicators, relaxation had the highest mean of 3.42 (SD = 0.48), indicating that respondents effectively manage tension and maintain composure. Similarly, imagery (M = 3.36, SD = 0.44) and self-talk (M = 3.36, SD = 0.44) were also described as very high, indicating strong mental preparation and internal motivation strategies. This shows that all indicators under cognitive strategies reached very high descriptive levels.

Furthermore, the results show that training load had an overall mean score of 3.24 (SD = 0.48), indicating a high level of response and relatively consistent responses among respondents. This indicates that respondents experience considerable physical training demands. Among its indicators, frequency had the highest mean of 3.36 (SD = 0.44), indicating that respondents consistently engage in training sessions. Similarly, volume (M = 3.22, SD = 0.56) and intensity (M = 3.15, SD = 0.63) were described as high, indicating that respondents experience substantial training workloads in terms of both duration and effort. This shows that all indicators reached high descriptive levels, indicating that training load is consistently experienced among the respondents.

Finally, competition anxiety had an overall mean score of 2.94 (SD = 0.58), indicating a high level and moderately consistent responses among respondents. This indicates that respondents experience a notable level of anxiety in competitive situations. Among its indicators, cognitive anxiety (worry) had the highest mean of 3.19 (SD = 0.71), indicating that respondents frequently experience mental concerns and apprehensions during competition. Similarly, somatic anxiety (physical) (M = 3.07, SD = 0.72) was also described as high, indicating the presence of physical symptoms such as tension and nervousness. However, self-confidence obtained the lowest mean of 2.56 (SD = 0.49), which was still described as high, indicating that although respondents maintain confidence, it is comparatively lower than the other aspects of competition anxiety. This shows that all indicators reached high descriptive levels, indicating that competition anxiety is consistently experienced among the respondents.

Correlation Analysis

Table 2 presents the correlation analysis between the independent variables, namely cognitive strategies and training load, and the criterion variable, which is competition anxiety. It also includes the computed r-values and p-values, the decision regarding the null hypothesis, and the corresponding interpretation of the relationships among the variables. This table examines whether significant relationships exist between the predictors and competition anxiety among the respondents.

Table 2. Relationship Between Variables (n = 70)

Variables	Competition Anxiety			
	r-value	p-value	Decision on H_o	Interpretation
Cognitive Strategies	0.115	0.342	Fail to Reject	Very Low, Not Significant
Training Load	0.675	0.000	Reject	High, Significant

Level of Significance: 0.05
Decision Rule: Reject H0 if p < 0.05

Table 2 shows that the correlation between cognitive strategies and competition anxiety yielded a p-value of 0.342, which is greater than the 0.05 level

of significance. Hence, the null hypothesis was not rejected. This indicates that there is no statistically significant relationship between cognitive strategies and competition anxiety. With an r-value of 0.115, the correlation between the two variables is described as very low.

Furthermore, the table shows that the correlation between training load and competition anxiety had a p-value of 0.000, which is below the 0.05 significance level. Hence, the null hypothesis was rejected. This finding indicates that the relationship between training load and competition anxiety is statistically significant. With an r-value of 0.675, the correlation between the two variables is described as high.

Regression Results

Table 3 presents the regression results and includes the predictor variables, namely cognitive strategies and training load. It also includes the criterion variable, which is competition anxiety. Furthermore, the table displays the β coefficients, t-values, p-values, decisions regarding the hypotheses, and their corresponding interpretations. This analysis determines the extent to which each predictor variable influences competition anxiety.

Table 3. Regression Table (n = 70)

	Competition Anxiety				
Predictors	Coefficient β	t	p -Value	Decision Ho	Interpretation
Cognitive Strategies	-0.522	-3.586	.000	Reject Ho	Influence, Significant
Training Load	1.038	8.814	.000	Reject Ho	Influence, Significant

Model Summary:
F-*Stat =39.817 / p-value =0.000 / r-squared = 0.543*
Level of Significance: 0.05
Decision Rule: Reject Ho if p <0.05

Table 3 specifically shows that cognitive strategies have a standardized coefficient (β) of -0.522, indicating a negative influence on competition anxiety. This influence is considered significant, as indicated by the p-value of 0.000, which is less than the 0.05 significance level; therefore, the null hypothesis is rejected. Likewise, training load obtained a standardized coefficient β of 1.038, indicating a positive influence on competition anxiety. This degree of influence is significant, as denoted by the p-value of 0.000, which is less than the level of significance; thus, the null hypothesis is likewise rejected. This indicates that both cognitive strategies and training load have a statistically significant influence on competition anxiety.

Finally, Table 3 presents the combined influence of cognitive strategies and training load on competition anxiety. It was found that their combined influence is statistically significant, as indicated by the F-statistic of 39.817 and a p-value of 0.000, which is below the 0.05 alpha level. This shows that variables jointly contribute significantly to competition anxiety when other factors are held constant. Moreover, the model achieved an r^2 of 0.543, indicating that cognitive strategies and training load together explain 54.3% of the variance in competition anxiety, with moderate-to-strong explanatory power.

Summary of Findings

Based on the statistical results, it was specifically found that:

1. Cognitive strategies show a very low and not significant relationship with competition anxiety, while training load shows a high and significant relationship with competition anxiety.
2. Cognitive strategies and training load have a significant influence (55%) on competition anxiety; however, training load has a stronger influence (5%) than cognitive strategies.
3. Cognitive strategies and training load exert a significant combined influence (63%) on competition anxiety, accounting for a substantial portion of the variance in the criterion variable.

Discussion

This chapter presents the discussion of the study's results. Specifically, includes reviews of prior findings that are either supported or refuted by this study's results.

Correlation of Cognitive Strategies, Training Load, and Competition Anxiety

The findings of this study state that cognitive strategies have a very low and non-significant relationship with competition anxiety, indicating that imagery, self-talk, and relaxation do not directly influence anxiety levels, consistent with Peng and Zhang (2021). This may be explained by the habitual and independent use of cognitive strategies regardless of anxiety state, as supported by Smith et al. (2016), Barrett et al. (2023), and Khng (2017), who noted that cognitive strategies are more strongly linked to performance than anxiety reduction; however, Walter et al. (2019) found that these strategies can reduce anxiety under certain conditions.

In contrast, the results also show that training load has a high and significant relationship with competition anxiety, suggesting that higher intensity, volume, and frequency are associated with increased anxiety levels, similar to Aloulou et al. (2021). Several studies reported that accumulated physical and psychological stress from intensive training, as supported by Brenner and Watson (2024), Brenner and Watson (2024), and Hamstra-Wright et al. (2021), although Macedo et al. (2024) argued that properly monitored and periodized training load may not necessarily increase anxiety.

Influence of Cognitive Strategies, Training Load, and Competition Anxiety

The findings of this study stating that cognitive strategies have a significant negative influence on competition anxiety, indicating that greater use of imagery, self-talk, and relaxation reduces anxiety levels, consistent with the study of Pheng and Zhang (2021), Tod et al. (2021), Isar et al. (2022), and Rowland et al. (2021), who emphasized that psychological skills improve emotional regulation and stress management, although Feng et al. (2020) noted that their effectiveness may vary under extreme stress conditions.

In contrast, training load has a significant positive influence on competition anxiety and a stronger effect than cognitive strategies, suggesting that higher intensity, volume, and frequency increase anxiety levels, aligning with Blume et al. (2018), Bonin et al. (2025), Hamstra-Wright et al. (2021), and Kellmann et al. (2018), while DiPasquale et al. (2021) argued that proper periodization may prevent this effect. Finally, cognitive strategies and training load jointly exert a significant combined influence on competition anxiety, explaining 54.3% of the variance of the current study, supporting the studies of Hamlin et al. (2019), Guo et al. (2025), Yu et al. (2024), Heidari et al. (2019), and Neumann (2025), though McGruder (2026) suggested that other psychological and clinical factors may also

play a stronger role in anxiety beyond these variables.

Conclusion

Based on the findings, it is concluded that cognitive strategies and training load significantly influence competition anxiety among student-athletes. This finding partially supports the Cognitive Activation Theory of Stress (CATS), which explains that both cognitive and physiological factors contribute to stress responses. Specifically, training load increases competitive anxiety, while cognitive strategies help manage it. However, training load exerts a stronger influence, highlighting the importance of proper load management in reducing anxiety among athletes.

Recommendation

Based on the conclusion, the following are recommended:

1. Future research may include additional variables such as resilience, coping mechanisms, and coaching strategies to explain the remaining variance in competition anxiety.
2. Exploratory studies and factor analysis may also be conducted to identify other contributing factors.
3. Coaches and educational institutions may implement programs focusing on psychological skills training and proper training load management to reduce competition anxiety and enhance student-athlete performance.

REFERENCES:

Althubaiti, H. A., & Alqurashi, H. S. (2022). The impact of teaching approaches on students' English language learning in higher education: A case study of a Saudi university. *Arab World English Journal, 13*(3). https://doi.org/10.24093/awej/vol13no3.26

Barrett, E., Kannis-Dymand, L., Love, S., Ramos-Cejudo, J., & Lovell, G. P. (2023). Sports-specific metacognitions and competitive state anxiety in athletes: A

comparison between different sporting types. *Applied Cognitive Psychology, 37*(1), 200–211. https://doi.org/10.1002/acp.4040

Blume, K., Körber, N., Hoffmann, D., & Wolfarth, B. (2018). Training load, immune status, and clinical outcomes in young athletes: A controlled, prospective, longitudinal study. *Frontiers in Physiology, 9*, 120. https://doi.org/10.3389/fphys.2018.00120

Bonin, G. T., Serafim, T. T., & Andrade, A. (2025). Mood profiles and overtraining syndrome: A systematic review. *Sport Sciences for Health, 21*(4), 2445–2466. https://doi.org/10.1007/s11332-025-01496-6

Brenner, J. S., & Watson, A. (2024). Overuse injuries, overtraining, and burnout in young athletes. *Pediatrics, 153*(2), e2023065129. https://doi.org/10.1542/peds.2023-065129

Coyne, J. O., Coutts, A. J., Newton, R. U., & Haff, G. G. (2021). The relationship between subjective training load and performance in open- and closed-skill sports. *International Journal of Sports Physiology and Performance, 16*(9), 1260–1267. https://doi.org/10.1123/ijspp.2020-0743

Dela Cruz, M. A., & Reyes, P. R. (2022). *Psychological challenges among Filipino student-athletes.* [Complete publication details needed.]

Feng, Y. C., Krahé, C., Koster, E. H. W., Lau, J. Y. F., & Hirsch, C. R. (2022). Cognitive processes predict worry and anxiety under different stressful situations. *Behaviour Research and Therapy, 157*, 104168. https://doi.org/10.1016/j.brat.2022.104168

Foster, C., Florhaug, J. A., Franklin, J., Gottschall, L., Hrovatin, L. A., Parker, S., Doleshal, P., & Dodge, C. (2001). A new approach to monitoring exercise training. *Journal of Strength and Conditioning Research, 15*(1), 109–115. https://doi.org/10.1519/1533-4287(2001)015<0109:ANATME>2.0.CO;2

Gabbett, T. J. (2020). How much? How fast? How soon? Three simple concepts for progressing training loads to minimize injury risk and enhance performance. *Journal of Orthopaedic & Sports Physical Therapy, 50*(10), 570–573. https://doi.org/10.2519/jospt.2020.9256

Guo, S., Zhong, Y., & Hu, X. (2025). People are more susceptible to misinformation with realistic AI-synthesized images that provide strong evidence to headlines. *Harvard Kennedy School (HKS) Misinformation Review, 6*(6). https://doi.org/10.37016/mr-2020-145

Hamlin, M. J., Wilkes, D., Elliot, C. A., Lizamore, C. A., & Kathiravel, Y. (2019). Monitoring training loads and perceived stress in young elite university athletes. *Frontiers in Physiology, 10*, Article 34. https://doi.org/10.3389/fphys.2019.00034

Hamstra-Wright, K. L., Huxel Bliven, K. C., & Napier, C. (2021). Training load capacity, cumulative risk, and bone stress injuries: A narrative review of a holistic approach. *Frontiers in Sports and Active Living, 3*, 665683. https://doi.org/10.3389/fspor.2021.665683

Heidari, J., Kölling, S., Pelka, M., & Kellmann, M. (2019). Monitoring the recovery-stress state in athletes. In M. Kellmann & J. Beckmann (Eds.), *Sport, Recovery, and Performance: Interdisciplinary Insights* (pp. 3–18). Routledge. https://doi.org/10.4324/9781315268149-1

Inoue, A., dos Santos Bunn, P., do Carmo, E. C., Lattari, E., & da Silva, E. B. (2022). Internal training load perceived by athletes and planned by coaches: A systematic review and meta-analysis. *Sports Medicine - Open, 8*(1), Article 27. https://doi.org/10.1186/s40798-022-00420-3

Jones, M. I., & Mattie, P. (2024). Self-talk, goal setting, and visualization. In *Handbook of Mental Performance* (pp. 63–85). Routledge. https://doi.org/10.4324/9781003378969-6

Kanwal, S., Ahsan, M., Khan, R., & Khan, A. (2025). Load management and injury prevention in elite athletes: A narrative review. *Premier Journal of Science.* https://doi.org/10.70389/PJS.100088

Kellmann, M., Bertollo, M., Bosquet, L., Brink, M., Coutts, A. J., Duffield, R., Erlacher, D., Halson, S. L., Hecksteden, A., Heidari, J., Kallus, K. W., Meeusen, R., Mujika, I., Robazza, C., Skorski, S., Venter, R., & Beckmann, J. (2018). Recovery and performance in sport: Consensus statement. *International Journal of Sports Physiology and Performance, 13*(2), 240–245. https://doi.org/10.1123/ijspp.2017-0759

Kelly, N. (2024). *An examination of pressure, competition anxiety, and performance in sport using virtual reality* (Doctoral dissertation). https://doi.org/10.34961/researchrepository-ul.26412085

Kemarat, S., Theanthong, A., Yeemin, W., & Suwankan, S. (2022). Personality characteristics and competitive anxiety in individual and team athletes. *PLOS ONE, 17*(1), e0262486. https://doi.org/10.1371/journal.pone.0262486

Khng, K. H. (2017). A better state-of-mind: Deep breathing reduces state anxiety and enhances test performance through regulating test cognitions in children. *Cognition and Emotion, 31*(7), 1502–1510. https://doi.org/10.1080/02699931.2016.1233095

Lan, J., Rashid, R. A. A., & Chen, S. (2025). The effectiveness of mental toughness training in athletes: A systematic review and meta-analysis. *Physical Education Theory and Methodology, 25*(6), 1483–1492. https://doi.org/10.17309/tmfv.2025.6.18

Limberg, D., Gnilka, P. B., & Broda, M. (2021). Advancing the counseling profession by examining relationships between variables. *Journal of Counseling & Development, 99*(2), 145–155. https://doi.org/10.1002/jcad.12362

Macedo, A. G., Almeida, T. A., Massini, D. A., de Oliveira, D. M., Espada, M. C., Robalo, R. A., ... & Pessôa Filho, D. M. (2024). Load monitoring methods for controlling training effectiveness on physical conditioning and planning involvement: A narrative review. *Applied Sciences, 14*(22), 10465. https://doi.org/10.3390/app142210465

McGruder, M. A. (2026). *Correlations between impostor phenomenon, self-efficacy, and gender among graduate counseling students* (Doctoral dissertation, Capella University). https://www.proquest.com/docview/3313250602?pq-origsite=gscholar&fromopenview=true

Metsämuuronen, J. (2022). Essentials of visual diagnosis of test items: Logical, illogical, and anomalous patterns in test items to be detected. *Practical Assessment, Research, and Evaluation, 27*(1), Article 5. https://doi.org/10.7275/n0kf-ah40

Neumann, N. D., Van Yperen, N. W., Arens, C. R., Brauers, J. J., Lemmink, K. A., Emerencia, A. C., ... & Den Hartigh, R. J. (2025). How do psychological and physiological performance determinants interact within individual athletes? An analytical network approach. *International Journal of Sport and Exercise Psychology, 23*(4), 672–693. https://doi.org/10.1080/1612197X.2024.2344108

Nuetzel, B. (2023). Coping strategies for handling stress and providing mental health in elite athletes: A systematic review. *Frontiers in Sports and Active Living, 5*, 1265783. https://doi.org/10.3389/fspor.2023.1265783

Peng, F., & Zhang, L. W. (2021). The relationship of competitive cognitive anxiety and motor performance: Testing the moderating effects of goal orientations and self-efficacy among Chinese collegiate basketball players. *Frontiers in Psychology, 12*, 685649. https://doi.org/10.3389/fpsyg.2021.685649

Rice, S. M., Parker, A. G., Rosenbaum, S., Milne, S., King, R., Pilkington, V., ... & Purcell, R. (2021). Development and preliminary validation of the Athlete Psychological Strain Questionnaire (APSQ). *International Journal of Sport and Exercise Psychology, 19*(3), 346–361. https://doi.org/10.1080/1612197X.2019.1678144

Rowland, D. L., Moyle, G., & Cooper, S. E. (2021). Remediation strategies for performance anxiety across sex, sport and stage: Identifying common approaches and a unified cognitive model. *International Journal of Environmental Research and Public Health, 18*(19), 10160. https://doi.org/10.3390/ijerph181910160

Smith, M. M., Saklofske, D. H., Keefer, K. V., & Tremblay, P. F. (2016). Coping strategies and psychological outcomes: The moderating effects of personal resiliency. *Journal of Psychology, 150*(3), 318–332. https://doi.org/10.1080/00223980.2015.1036828

Tod, D. (2021). Stories of critical moments contributing to the development of applied sport psychology practitioners. *The Sport Psychologist, 35*(1), 11–21. https://doi.org/10.1123/tsp.2020-0011

Ursin, H., & Eriksen, H. R. (2004). The cognitive activation theory of stress. *Psychoneuroendocrinology, 29*(5), 567–592. https://doi.org/10.1016/S0306-4530(03)00091-X

Walter, N., Nikoleizig, L., & Alfermann, D. (2019). Effects of self-talk training on competitive anxiety, self-efficacy, volitional skills, and performance: An intervention study with junior sub-elite athletes. *Sports, 7*(6), Article 148. https://doi.org/10.3390/sports7060148

Yongtawee, A., Park, J., Kim, Y., & Woo, M. (2022). Athletes have different dominant cognitive functions depending on type of sport. *International Journal of Sport and Exercise Psychology, 20*(1), 1–15. https://doi.org/10.1080/1612197X.2021.1956570

Yu, X., Yang, Y., & He, B. (2024). The effect of athletes' training satisfaction on competitive state anxiety: A chain-mediated effect based on psychological resilience and coping strategies. *Frontiers in Psychology, 15*, 1409757. https://doi.org/10.3389/fpsyg.2024.1409757