
Relationship between mental toughness and friend support on the achievement motivation of female futsal athletes

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Abstract

Despite the growing interest in the psychological factors influencing athletic performance, research on the interplay of MT, SS, and achievement motivation, specifically within the context of women's futsal, remains limited. This study explores the relationship between mental toughness, social support, and achievement motivation among female futsal athletes in Indonesia. This research gathered 18 female futsal athletes using the Multidimensional Scale of Perceived Social Support (MSPSS) and the Sports Mental Toughness Questionnaire (SMTQ) in a quantitative descriptive manner. The collected data will be analyzed using IBM SPSS Statistics version 25 software, with a focus on descriptive statistics, correlation, and linear regression analyses. The MSPSS evaluates perceived social support from sources like family and friends, while the SMTQ measures mental toughness, focusing on aspects such as self-confidence and resilience. The study results show that a correlation between MT and SS of 0.429 was found by statistical analysis; however, this association was not statistically significant (Sig. > 0.05). Descriptive analysis indicated that SS had a higher mean score (33.6403) compared to MT (31.2378), suggesting a higher perceived level of social support among participants. These findings highlight the need for further research to understand these dynamics comprehensively. This study contributes to understanding the psychological and social factors affecting the performance and well-being of female futsal athletes. It suggests the necessity for targeted interventions and support strategies.

Keywords: Mental toughness, social support, achievement motivation.

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INTRODUCTION

Motivation plays a pivotal role in shaping athletes' performance and overall sporting experience (Holden et al., 2017). Achievement motivation

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is the driving force that propels individuals to develop creativity and harness their abilities and energy to attain maximum performance (Aprilianty, 2018); one promising method is prioritizing motivation, as it is believed to support behavior consistency and encourage individuals to initiate actions (Fitri et al., 2020). Athletes are often hindered by the anxiety experienced during competitions. Athletes may feel fear when facing formidable opponents or when they believe their team is destined to lose (Fajri et al., 2022). This fear and anxiety are intrinsically linked to mental toughness, a crucial focus in sports psychology that remains empirically understudied (Liu et al., 2022). Developing mental toughness is increasingly vital in sports, particularly among female futsal athletes (Liew et al., 2019). The ability to handle stress, endure pressure, and maintain sharp focus in competitive situations are all components of mental toughness. Pressure and mental challenges can be the decisive factors in performance (Chang et al., 2020). Athletes that are focused can react quickly to situations on the field (Reid et al., 2020). Concentrating on the optimal passing options is crucial in fast-paced and dynamic game situations (Barbu & Stoica, 2020). In these high-pressure scenarios, players must quickly assess their surroundings and make precise decisions to maintain the flow of play and capitalize on scoring opportunities (Récopé et al., 2019). This skill is particularly vital in ensuring that the team can effectively navigate the rapid shifts and demands of the game (Marsuna et al., 2024). Technical training in sports also enhances physical performance, which can hasten skill mastery throughout training and competition (Sahib Saleh et al., 2024).

Despite extensive research on mental toughness, several critical issues persist (Stamatis et al., 2022). Firstly, there is a lack of generalization of the mental toughness framework across diverse sports contexts, such as women's futsal (Silva et al., 2020). This lack of generalization limits understanding of how mental toughness manifests and influences performance in specific sports settings (Brown & Fletcher, 2017). Secondly, most research on mental toughness has focused on elite athletes, leaving a significant gap in understanding mental toughness among non-elite

athletes (Söderström et al., 2018). This elite athlete bias limits the applicability of findings to a broader range of athletes and hinders the development of targeted interventions for non-elite competitors (Wulf, 2012). Thirdly, the role of social support, particularly from friends, in enhancing athletes' psychological well-being and motivation remains understudied (Roberts et al., 2021). Friends' support can provide emotional boosts, practical assistance, and positive perspectives that help athletes stay motivated (Raabe et al., 2016). Success is achieved not only due to our own efforts but also because of the support from others (Antoni et al., 2022). They enhance feelings of connection, self-confidence, and motivation (Carpentier & Mageau, 2016). However, the specific mechanisms and impact of friend support on mental toughness and achievement motivation in female futsal athletes have not been thoroughly investigated. This underscores the need for focused studies on mental toughness, social support, and achievement motivation in this context (Gucciardi, 2012).

This study investigates the relationship between mental toughness and peer support with achievement motivation in non-elite female futsal athletes from promotion league teams. Previous research indicates that mental toughness is positively correlated with athletic performance and resilience (Rodríguez, Velastequí, 2019), while peer support has been shown to enhance motivation and commitment in athletes (Hoffmann & Loughhead, 2016). This study aims to develop a valid measurement instrument and understand how these factors affect motivation. Findings are expected to provide insights for coaches, sports psychologists, and athletes, aligning with existing literature that emphasizes the importance of a supportive environment for enhancing athletic performance (Cook et al., 2021). The goal is to help create effective support strategies that foster growth and success in the sport.

The Multidimensional Scale of Perceived Social Support (MSPSS) and the Sports Mental Toughness Questionnaire (SMTQ) are effective

instruments for athletes. MSPSS evaluates social support from family, friends, and the environment, which is crucial for motivation and performance. Recent research indicates that social support significantly enhances athletes' motivation and reduces stress levels (Simons & Bird, 2023). SMTQ assesses mental toughness by measuring self-confidence, resilience, control, focus, and responsibility—critical aspects in managing pressure and challenges. Studies have shown that mental toughness is associated with improved athletic performance and better coping strategies (Wang et al., 2021).

METHOD

Research Design And Participants

This research employs a descriptive approach to depict the characteristics of respondents as well as the variables related to mental toughness and peer support in relation to athletes' achievement motivation. The descriptive approach aims to better understand the existing conditions within the studied population without intervening or manipulating the variables. The method used in this study is quantitative. The quantitative method is chosen to analyze the relationship between mental toughness and peer support regarding achievement motivation among athletes of the Alive FC futsal (a promotion league team). Using appropriate measurement tools, the collected data can be statistically analyzed to identify and describe the relationships among these variables. The type of research applied is quantitative descriptive research, which emphasizes the collection of numerical data and statistical analysis to evaluate the relationships between mental toughness and peer support in the context of athletes' achievement motivation.

Research Procedure

The questionnaire was conducted online through the Google Forms platform. Respondents filled out the questionnaire anonymously to ensure their security and trust and to provide honest feedback. Data were collected between April and May, with prior authorization from the relevant authorities

at the Alive FC futsal (Promotion league team). Data were collected using two previously validated questionnaires. The Sports Mental Toughness Questionnaire (SMTQ) was utilized to assess athletes' mental toughness from the Alive FC futsal team, which competes in the Promotion League. This instrument provided insights into the athletes' resilience, confidence, and ability to handle pressure. Additionally, the Multidimensional Scale of Perceived Social Support (MSPSS) was employed to gauge the level of peer support these athletes receive. This scale offered a comprehensive understanding of the social dynamics that influence athletes' performance and well-being by evaluating both the extent and quality of social support from friends, family, and significant others (Simons & Bird, 2023).

This study will examine the relationship between mental toughness and peer support to better understand achievement motivation among athletes from the Promotion League-playing Alive FC futsal team. The study employs a quantitative research methodology to gather the necessary data to examine the connection between these independent and dependent variables. This approach involves systematically collecting and analyzing numerical data to identify significant patterns and relationships, providing a robust framework for understanding how mental resilience and social support impact the athletes' motivation to achieve their goals (Basias & Pollalis, 2018).

The SMTQ questionnaire is an evaluation tool consisting of a series of questions formulated specifically to assess important aspects of individual motivation and performance quality. The dimensions evaluated include self-confidence, resilience, control, focus, and responsibility. Respondents are asked to assess themselves regarding these aspects using a Likert scale that measures the level of agreement or disagreement with specific statements. The conviction that one can succeed in specific circumstances or efficiently finish activities is known as self-confidence. The elements that eventually surfaced from the exploratory analysis are very similar to the idea of mental toughness that is frequently seen in sports

psychology. These include Confidence (self-doubt), Resilience (indecisiveness), and Control (agitation), which are factors associated with mental toughness (Vaughan, R., Carter et al., 2022). Furthermore, the SMTQ is the only instrument of mental toughness that has been psychometrically validated and encompasses measurements of emotional control and negative energy. These are critical characteristics often identified in the literature on mental toughness (Gucciardi et al., 2016).

An assessment instrument called the MSPSS questionnaire is used to gauge how people feel about the social support they get from friends, family, and their social surroundings (Cobo-Rendón et al., 2020). It is an instrument designed to assist researchers and mental health practitioners in understanding the extent to which individuals feel socially supported, which can subsequently influence their psychological well-being (Wang, Y., Wan, Q., Huang, Z., Huang, L., & Kong, 2021). There are twelve items in the MSPSS. Items that specifically deal with social support are typically categorized into factor groups based on the people who provide the support (e.g., family, friends, or significant others). Each group consists of four things. To maximize response variability and eliminate ceiling effects, a 7-point rating scale ranging from strongly disagree (1) to strongly agree (7) is utilized (Wang & Lewis, 2022).

Data analysis

The collected data will be analyzed using IBM SPSS Statistics version 25 software, with a focus on descriptive statistics, correlation, and linear regression analyses. Descriptive statistics will summarize the sample characteristics by providing mean scores and standard deviations for mental toughness and peer support. This will offer a clear overview of the athletes' demographic and other relevant attributes, illustrating these variables' central tendencies and variability. Correlation analysis will be conducted to examine the relationships between mental toughness and peer support, as well as their connections to achievement motivation. The Pearson correlation coefficient will measure the strength and direction of these relationships, helping to determine if higher peer support is associated with

increased mental toughness and if both factors are related to achievement motivation. The results will reveal whether significant correlations exist between mental toughness and peer support and how these factors impact motivation. Finally, linear regression analysis will assess how mental toughness and peer support predict athlete achievement motivation. The study aims to identify significant patterns and relationships by integrating these statistical methods, offering insights into how mental resilience and social support enhance athletic performance and motivation.

RESULT

Table 1. The descriptive statistics results for mental toughness and friend support.

	Mean	Std. Deviation	N
MT	31.2378	3.85118	18
SS	33.6403	4.935	18

The descriptive statistics results for mental toughness (MT) and friend support (SS) among 18 participants. The average score for mental toughness is 31.24, with a standard deviation of 3.85, indicating that the participants' mental toughness scores are generally clustered around the mean, with relatively low variability. The justification for this study lies in the importance of understanding mental toughness and peer support within the context of sports psychology, particularly to identify how these factors impact athletes' performance and well-being. By analyzing the distribution of mental toughness and peer support scores, this research can provide insights into the consistency and differences in individual experiences and how these factors may contribute to athletes' achievement and motivation overall. Data showing low variability in mental toughness can help guide more targeted interventions and more effective support strategies to enhance athletic performance.

In contrast, the average score for friend support is higher at 33.64, with a standard deviation of 4.94. This suggests that, despite more significant variability in the levels of support received by participants, the

overall level of friend support is significantly higher than that of mental toughness. This suggests that, despite more significant variability in the levels of support received by participants, the overall level of friend support is significantly higher than that of mental toughness. The basis of this research is the importance of understanding the differences between peer support and mental toughness within sports. Higher levels of peer support can be a significant driving factor for athletes, potentially helping them overcome challenges and enhance their motivation. This study explores how stronger social support, compared to mental toughness, affects athletes' performance and well-being. By understanding these differences, more effective support strategies can be developed to help athletes manage pressure and improve their performance outcomes. These findings provide insight into the dynamics between mental toughness and social support, which may influence individual well-being.

Table 2. The results of the scores for mental toughness and friend support

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medium	18	100	100	100

The distribution of scores for mental toughness and friend support among participants. The table indicates that there were a total of 18 responses categorized as (moderate). The justification for this study lies in understanding the distribution of mental toughness and peer support scores within the "moderate" category. Analyzing this distribution helps identify how these factors impact athletes' performance and well-being and assists in designing more effective interventions. Additionally, this data can serve as a foundation for further research involving participants with varying levels of support and mental toughness. This frequency accounts for 100% of the total responses, indicating that all participants reported moderate mental toughness and friend support. The valid and cumulative percentages also stand at 100%, reinforcing that the entire sample falls within this single category. This uniformity suggests a consistent perception of moderate mental toughness and friend support among the participants.

Table 3. The correlation results of mental toughness and friend support

		MT	SS
MT	Pearson correlation	1	0.429
	Sig. (2-tailed)		0.076
	N	18	18
SS	Pearson correlation	0.429	1
	Sig. (2-tailed)	0.076	
	N	18	18

The correlation coefficient between "Mental Toughness" (MT) and "Social Support" (SS) was found to be 0.429. However, this correlation is not statistically significant, as indicated by the "Sig. (2-tailed)" value, which exceeds the commonly accepted significance threshold of 0.05. This suggests that, within this sample, there is no significant relationship between the MT and SS variables. Despite the Pearson correlation coefficient of 0.429 indicating a moderate positive association, the lack of statistical significance means this relationship cannot be confidently generalized to a broader population.

Based on these descriptive statistical results, we can conclude that there are differences between the two groups referred to as "MT" and "SS". The "SS" group has a higher mean than the "MT" group, with a mean value of 33.6403 compared to 31.2378 for the "MT" group. However, it is important to note that standard deviation also needs to be considered, as it indicates the spread of data around the mean. Although the "SS" mean is higher, its standard deviation is also higher than that of the "MT" group. Therefore, accurate conclusions require further analysis to understand the differences between the two groups more deeply, perhaps through statistical hypothesis testing or further analysis of relevant data.

Table 4. The correlation results of mental toughness toward motivation

Variable	Sig	Pearson correlation	Result
Mental Toughness	0.076	0.429	P < 0.05
H0 Accepted			

The analysis results presented in Table 4 indicate the correlation between mental toughness and motivation among female futsal athletes.

The significance value (Sig) is reported as 0.076, more significant than the conventional threshold of 0.05. This suggests that the correlation is not statistically significant.

The Pearson correlation coefficient is 0.429, indicating a moderate positive relationship between mental toughness and motivation. However, because the significance value exceeds 0.05, this correlation cannot be considered statistically significant. Therefore, while there is a positive association between the two variables, the data does not support a strong enough link to accept the alternative hypothesis (H0), which posits a relationship between mental toughness and motivation.

In summary, the findings suggest that although mental toughness and motivation appear positively correlated, the statistical evidence does not confirm this relationship as significant among the studied group.

Table 5. Correlation results of friend support towards motivation

Variable	Sig	Pearson correlation	Result
Friend support	0.076	0.429	P < 0.05
			H0 Accepted

The analysis results presented in Table 5 show the correlation between friend support and motivation among female futsal athletes. The significance value (Sig) is recorded as 0.076, more significant than the common threshold of 0.05. This indicates that the correlation is not statistically significant.

The Pearson correlation coefficient is 0.429, suggesting a positive relationship between friend support and motivation. However, due to the significance value exceeding 0.05, this correlation cannot be considered significant. Therefore, the conclusion that can be drawn is that friend support does not have a substantial correlation with achievement motivation in female futsal athletes. Thus, it is not possible to estimate a direct relationship between mental toughness and achievement motivation in female futsal athletes solely based on this data.

DICUSSION

Research indicates that female futsal athletes with higher mental toughness exhibit significantly greater motivation to achieve their goals compared to those with lower mental toughness. This underscores the essential role mental resilience plays in fueling athletes' ambition and determination to succeed in their sport. This finding highlights mental resilience's crucial role in driving athletes' ambition and determination to succeed in their sport. Exercise techniques and physical state interact to demonstrate that skill development depends on practice type and personal physical state (Fadli et al., 2024). While this consistency supports achieving success, mental toughness remains an important factor that needs attention. Mental toughness is one of the important psychological factors to consider in the development of female futsal athletes. Athletes with high mental toughness have a greater chance of success in this sport because they are more motivated to train and compete to the maximum (Bédard Thom et al., 2021).

Therefore, female futsal coaches should prioritize developing their athletes' mental toughness through techniques such as visualization, positive self-talk, and mindfulness (Lars, 2024). Enhancing mental toughness helps athletes perform at their best, manage stress, and improve team dynamics and individual well-being (Ruparel, 2020). By implementing these strategies, coaches can create a supportive and empowering environment for their athletes.

Athletes with mental toughness can maintain composure and energy even under pressure. The development of mental toughness is influenced by environmental conditions, genetic factors, life experiences, and mindset (Quinn & Cavanaugh, 2017). Environmental factors such as training quality and support systems, genetic predispositions, and experiences in overcoming difficulties are crucial (Kim-Cohen & Turkewitz, 2012). Additionally, one's mindset about challenges is also critical. Understanding

these factors helps coaches and athletes design more effective and holistic training programs (Kegelaers & Wylleman, 2019).

According to Edwardson et al. (2012), peer support is more significant than parental support for adolescents aged 12-16 years. Peers who provide positive support can motivate athletes and help them overcome challenges (Blake & Solberg, 2023). Peer support includes encouragement, assistance, and recognition of individual efforts and achievements (Subotnik et al., 2011). This type of support boosts motivation, confidence, and mental well-being while also creating a positive social environment for athletes (Cho et al., 2020). Based on the presented analysis, a relationship between mental toughness and achievement motivation among female futsal athletes has been identified. The findings from the analysis indicate that there is a positive relationship between mental toughness and achievement motivation among female futsal athletes. While there is an indication that mental toughness may be related to achievement motivation, this relationship is not strong enough to be considered statistically significant within the context of this study.

The main limitations of this research include a relatively small sample size and a specific context that may influence the results. For instance, if the sample consists of athletes with similar backgrounds, experiences, or competition levels, this could limit the ability to generalize the findings to a broader population. Additionally, external factors such as social support, training conditions, and individual differences among athletes may also contribute to variations in the results obtained. These limitations highlight the need for further research with a more comprehensive design and a more diverse sample to better understand the dynamics between mental toughness and motivation in sports.

CONCLUSION

Although this study did not find a significant correlation between achievement motivation, mental toughness, and peer support among female futsal athletes, it provides valuable insights into the factors affecting athlete performance. The study highlights the differences between mental

toughness and peer support, suggesting the potential for developing more effective training strategies. It also indicates the need to explore further how these variables interact with additional factors such as coaching style and team cohesion. The research emphasizes the importance of a holistic approach to athlete development, encompassing psychological and social aspects and physical training. Future research should expand on these findings by incorporating a broader range of variables and qualitative methods to understand better and enhance athlete performance.

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REFERENCES

- Antoni, R., Fitri, M., Olahraga, P. K., Karya, U. M., Science, S., Program, S., Education, H., & Pendidikan, U. (2022). Available online at: <http://journal.unj.ac.id/unj/index.php/gjik> Permalink / DOI: [https://doi.org/10.21009/GJIK.134.10.13\(04\).456-463](https://doi.org/10.21009/GJIK.134.10.13(04).456-463).
- Aprilianty, E. (2018). The effect of self-efficacy and achievement motivation on agriculture student learning outcomes. *Taman Vokasi*, 6(2), 135. <https://doi.org/10.30738/jtv.v6i2.4145>
- Barbu, D., & Stoica, D. (2020). Increasing The Execution Speed Of Offensive And Defensive Tactical Actions In The Football Game At The Time Of Transition. *Journal Of Sport And Kinetic Movement*, 36, 7–13.
- Basias, N., & Pollalis, Y. (2018). Quantitative and Qualitative Research in Business & Technology: Justifying a Suitable Research Methodology. *Review of Integrative Business and Economics Research*, 7(1), 91–105. <http://buscompress.com/journal-home.html>
- Bédard Thom, C., Guay, F., & Trottier, C. (2021). Mental toughness in sport: The Goal-Expectancy-Self-Control (GES) model. *Journal of Applied Sport Psychology*, 33(6), 627–643. <https://doi.org/10.1080/10413200.2020.1808736>
- Blake, M., & Solberg, V. S. H. (2023). Designing elite football programs that produce quality athletes and future-ready adults: incorporating social, emotional learning and career development. *Soccer and Society*, 24(6), 896–911. <https://doi.org/10.1080/14660970.2022.2149505>
- Brown, D. J., & Fletcher, D. (2017). Effects of Psychological and Psychosocial Interventions on Sport Performance: A Meta-Analysis.

Sports Medicine, 47(1), 77–99. <https://doi.org/10.1007/s40279-016-0552-7>

Carpentier, J., & Mageau, G. A. (2016). Predicting sport experience during training: The role of change-oriented feedback in athletes' motivation, self-confidence and needs satisfaction fluctuations. *Journal of Sport and Exercise Psychology*, 38(1), 45–58. <https://doi.org/10.1123/jsep.2015-0210>

Chang, C., Putukian, M., Aerni, G., Diamond, A., Hong, G., Ingram, Y., Reardon, C. L., & Wolanin, A. (2020). Mental health issues and psychological factors in athletes: Detection, management, effect on performance and prevention: American Medical Society for Sports Medicine Position Statement-Executive Summary. *British Journal of Sports Medicine*, 54(4), 216–220. <https://doi.org/10.1136/bjsports-2019-101583>

Cho, H., Tan, H., & Lee, E. (2020). Importance of perceived teammate support as a predictor of student-athletes' positive emotions and subjective well-being. *International Journal of Sports Science & Coaching*, 15, 174795412091972. <https://doi.org/10.1177/1747954120919720>

Cobo-Rendón, R., López-Angulo, Y., Pérez-Villalobos, M. V., & Díaz-Mujica, A. (2020). Perceived Social Support and Its Effects on Changes in the Affective and Eudaimonic Well-Being of Chilean University Students. *Frontiers in Psychology*, 11(December). <https://doi.org/10.3389/fpsyg.2020.590513>

Cook, G. M., Fletcher, D., & Carroll, C. (2021). Psychosocial functioning of Olympic coaches and its perceived effect on athlete performance: a systematic review. *International Review of Sport and Exercise Psychology*, 14(1), 278–311. <https://doi.org/10.1080/1750984X.2020.1802769>

Daniel F. Gucciardi & Martin I. Jones. (2012). Beyond optimal performance: Mental toughness profiles and developmental success in adolescent cricketers. *Journal of Sport and Exercise Psychology*, 34(1), 16–36. <https://doi.org/10.1123/jsep.34.1.16>

Edwardson, C., Gorely, T., Pearson, N., & Atkin, A. (2012). Sources of Activity-Related Social Support and Adolescents' Objectively Measured After School and Weekend Physical Activity: Gender and Age Differences. *Journal of Physical Activity & Health*, 10.

Fadli, R. A. Z., , Phil. Yanuar Kiram, Arsilcde, R., Bahtrad, & Ocktadf, Y. (2024). Improvement of basic soccer techniques with training methods and physical condition. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*, 10(1), 76–89. https://doi.org/10.29407/js_unpgri.v10i1.21575

Fajri, A., 1, W., Setyawati, H., Rahayu, T., Wira, D., Kusuma, Y., Rafikoh, R., Rohmah, I., & Chen, C.-W. (2022). Self-Efficacy, Self-Confidence,

- Achievement Motivation, and Its Relationship Towards Competitive Anxiety. *Journal of Physical Education and Sports*, 11(4), 426–434. <https://journal.unnes.ac.id/sju/index.php/jpes>
- Fitri, M., Novan, N. A., & Dewi, F. (2020). *Motivation Levels for Youth Participation in Recreational Sports: Intrinsic and Extrinsic Influencing Factors*. 21(ICSSHPE 2019), 270–272. <https://doi.org/10.2991/ahsr.k.200214.071>
- Gucciardi. (2012). Beyond optimal performance: Mental toughness profiles and developmental success in adolescent cricketers. *Journal of Sport and Exercise Psychology*, 34(1), 16–36. <https://doi.org/10.1123/jsep.34.1.16>
- Gucciardi, F., Hanton, S., & Fleming, S. (2016). Are Mental Toughness and Mental Health Contradictory Concepts in Elite Sport? A Narrative Review of Theory and Evidence. *Journal of Science and Medicine in Sport*, 20. <https://doi.org/10.1016/j.jsams.2016.08.006>
- Hoffmann, M. D., & Loughead, T. M. (2016). A comparison of well-peer mentored and non-peer mentored athletes' perceptions of satisfaction. *Journal of Sports Sciences*, 34(5), 450–458. <https://doi.org/10.1080/02640414.2015.1057517>
- Holden, S. L., Schwarz, N. A., Holden, S. L., & Pugh, S. F. (2017). Achievement Motivation of Collegiate Athletes for Sport Participation. *International Journal of Sports Science*, 2017(2), 25–28. <https://doi.org/10.5923/j.sports.20170702.01>
- Kegelaers, J., & Wylleman, P. (2019). Exploring the coach's role in fostering resilience in elite athletes. *Sport, Exercise, and Performance Psychology*, 8(3), 239–254. <https://doi.org/10.1037/spy0000151>
- Kim-Cohen, J., & Turkewitz, R. (2012). Resilience and measured gene-environment interactions. *Development and Psychopathology*, 24(4), 1297–1306. <https://doi.org/10.1017/S0954579412000715>
- Lars, P. (2024). Sports Psychology Mental Resilience and Performance in Elite Athletes. *Revista de Psicologia Del Deporte/Journal of Psychology*, 33(2), 271–279.
- Liew, G. C., Kuan, G., Chin, N. S., & Hashim, H. A. (2019). Mental toughness in sport: Systematic review and future. *German Journal of Exercise and Sport Research*, 49(4), 381–394. <https://doi.org/10.1007/s12662-019-00603-3>
- Liu, M., Zhao, X., & Liu, Z. (2022). Relationship between Psychological Distress, Basic Psychological Needs, Anxiety, Mental Pressure, and Athletic Burnout of Chinese College Football Athletes during the COVID-19 Pandemic. *Sustainability (Switzerland)*, 14(12). <https://doi.org/10.3390/su14127100>
- Marsuna, M., Rusli, M., & Saman, A. (2024). Improved passing accuracy by

- using pair practice in adolescent soccer players. *Jurnal SPORTIF : Jurnal Penelitian Pembelajaran*, 10(1), 31–46. https://doi.org/10.29407/js_unpgri.v10i1.21732
- Quinn, T., & Cavanaugh, L. (2017). Mental Toughness. *Strategies*, 30(5), 36–40. <https://doi.org/10.1080/08924562.2017.1344172>
- Raabe, J., Zakrajsek, R. A., & Readdy, T. (2016). Teammate Influence on Collegiate Swimmers' Basic Psychological Need Satisfaction: A Qualitative Perspective. *Journal of Intercollegiate Sport*, 9(1), 27–49. <https://doi.org/10.1123/jis.2015-0016>
- Récopé, M., Fache, H., Beaujouan, J., Coutarel, F., & Rix-Lièvre, G. (2019). A study of the individual activity of professional volleyball players: Situation assessment and sensemaking under time pressure. *Applied Ergonomics*, 80(April 2016), 226–237. <https://doi.org/10.1016/j.apergo.2018.07.003>
- Reid, B., Schreiber, K., Shawhan, J., Stewart, E., Burch, R., & Reimann, W. (2020). Reaction time assessment for coaching defensive players in NCAA division 1 American football: A comprehensive literature review. *International Journal of Industrial Ergonomics*, 77(February), 102942. <https://doi.org/10.1016/j.ergon.2020.102942>
- Roberts, G. A., Arnold, R., Gillison, F., Colclough, M., & Bilzon, J. (2021). Military veteran athletes' experiences of competing at the 2016 Invictus Games: a qualitative study. *Disability and Rehabilitation*, 43(24), 3552–3561. <https://doi.org/10.1080/09638288.2020.1725655>
- Rodríguez, Velastequí, M. (2019). No 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散構造分析Title. 50, 1–23. <https://doi.org/10.7352/IJSP.2019.50.176>
- Ruparel, N. (2020). Mental toughness: Promising new paradigms for the workplace. *Cogent Psychology*, 7(1). <https://doi.org/10.1080/23311908.2020.1722354>
- Sahib Saleh, M., Arif Saleh, H., Nurkadri, N., Suharta, A., & Syahrul Saleh, M. (2024). Physical training tennis serve performance on adolescent: A systematic review. *Jurnal SPORTIF : Jurnal Penelitian Pembelajaran*, 10(1), 171–188. https://doi.org/10.29407/js_unpgri.v10i1.22457
- Silva, A. F., Conte, D., & Clemente, F. M. (2020). Decision-making in youth team-sports players: A systematic review. *International Journal of Environmental Research and Public Health*, 17(11), 1–23. <https://doi.org/10.3390/ijerph17113803>
- Simons, E. E., & Bird, M. D. (2023). Coach-athlete relationship, social support, and sport-related psychological well-being in National Collegiate Athletic Association Division I student-athletes. *Journal for the Study of Sports and Athletes in Education*, 17(3), 191–210. <https://doi.org/10.1080/19357397.2022.2060703>
- Söderström, T., Fahlén, J., Ferry, M., & Yu, J. (2018). Athletic ability in

childhood and adolescence as a predictor of participation in non-elite sports in young adulthood. *Sport in Society*, 21(11), 1686–1703. <https://doi.org/10.1080/17430437.2017.1409726>

Stamatis, A., Morgan, G. B., Nyamaruze, P., & Koutakis, P. (2022). Mental Toughness Development via Military-Style Training in the NCAA: A Three-Phase, Mixed-Method Study of the Perspectives of Strength and Conditioning Coaches. *Sports*, 10(6). <https://doi.org/10.3390/sports10060092>

Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2011). Rethinking Giftedness and Gifted Education: A Proposed Direction Forward Based on Psychological Science. *Psychological Science in the Public Interest, Supplement*, 12(1), 3–54. <https://doi.org/10.1177/1529100611418056>

Vaughan, R., Carter, G. L., Cockroft, D., & Maggiorini, L. (2022). Harder, better, faster, stronger? Mental toughness, the dark triad and physical activity. *Journal of Personality*, 90(1), 113–130. <https://doi.org/10.1111/jopy.12573>

Wang, Y., Wan, Q., Huang, Z., Huang, L., & Kong, F. (2021). Psychometric properties of multidimensional scale of perceived social support in Chinese parents of children with cerebral palsy. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.633463>

Wang, Y., & Lewis, S. E. (2022). Towards a theoretically sound measure of chemistry students' motivation; investigating rank-sort survey methodology to reduce response style bias. *Chemistry Education Research and Practice*, 23(1), 240–256. <https://doi.org/10.1039/D1RP00206F>

Wang, Y., Tian, J., & Yang, Q. (2021). On Mindfulness Training for Promoting Mental Toughness of Female College Students in Endurance Exercise. *Evidence-Based Complementary and Alternative Medicine*, 2021. <https://doi.org/10.1155/2021/5596111>

Wulf, G. (2012). How elite coaches' experiential knowledge might enhance empirical research on sport performance. *International Journal of Sports Science and Coaching*, 7(2), 423–426. <https://doi.org/10.1260/1747-9541.7.2.423>