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Physical factors and motivation in learning Dollyo Chagi kicks: a narrative review

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ABSTRACT

Technical mastery of the Dollyo Chagi kick in martial arts learning is not solely determined by isolated physical abilities but emerges from the interaction of physical and psychological factors. Previous studies have predominantly examined flexibility, explosive power, and motivation separately, resulting in fragmented understanding of their combined role in technical skill development. This narrative review aims to synthesize and conceptualize the interrelated contributions of flexibility, lower-limb explosive power, and motivation in learning and executing the Dollyo Chagi kick. A qualitative narrative synthesis was conducted on peer-reviewed national and international literature published between 2018 and 2025, selected through purposive sampling. The findings indicate that flexibility functions as a biomechanical prerequisite enabling effective movement range and technical control, while explosive power acts as a performance amplifier that enhances kick speed and force when technical foundations are established. Motivation emerges as a psychological mediator that sustains training engagement and supports consistent skill acquisition. This review highlights the need for an integrated training and pedagogical approach, providing a conceptual framework to inform future empirical research and evidence-based coaching in martial arts education.



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Introduction

Martial arts learning and performance are increasingly understood as the product of dynamic interactions between physical capacities and psychological readiness rather than the result of isolated attributes. In striking-based martial arts, technical kicking skills represent complex motor actions that require coordinated biomechanical execution and sustained cognitive engagement. One fundamental circular kicking technique widely practiced in Hapkido is Dollyo Chagi, which demands precise hip rotation, trunk alignment, and controlled force production to achieve effective execution. Despite its central role in both training and competition, the learning and execution of Dollyo Chagi are often approached through fragmented training perspectives that prioritize certain physical components while overlooking psychological influences.

From a biomechanical standpoint, flexibility has been identified as a prerequisite for effective circular kicking techniques, as adequate joint mobility enables greater range of motion, smoother rotational patterns, and improved movement accuracy (Akbar et al., 2023; Chaabene et al., 2018; Nia et al., 2023). Limited flexibility, particularly in the hip and trunk regions, restricts kicking height and disrupts technical precision, often leading to compensatory movement strategies. Alongside flexibility, explosive power of the lower limbs has been consistently associated with kick velocity and impact force in martial arts performance (Corcoran et al., 2024; Scamardella et al., 2025). Explosive power enhances the speed and effectiveness of offensive actions; however, without sufficient technical control and biomechanical readiness, increased power may compromise accuracy rather than improve performance.

Beyond physical attributes, motivation plays a crucial role in shaping learning quality and technical consistency. Sports psychology research demonstrates that athletes with higher intrinsic motivation exhibit greater persistence, focus, and engagement during skill acquisition and refinement (Gerber et al., 2025; Rudd et al., 2020). Motivational states also influence technical stability under pressure, as athletes with stronger intrinsic motivation tend to maintain consistent execution in demanding performance contexts (Obschonka et al., 2018; Rutledge, 2018; Schüler et al., 2023). In combat sports, psychological readiness has further been linked to neuromuscular coordination and biomechanical efficiency during complex motor skills (Rydzik & Ambrozy, 2021; Zadorozhna et al., 2019). These findings suggest that motivation does not directly produce technical outcomes but mediates how physical capacities are expressed during performance and learning.

In applied training contexts, however, many martial arts coaches continue to emphasize strength and conditioning programs while giving limited systematic attention to flexibility development and motivational regulation. Empirical findings from Indonesian combat sports research indicate that restricted hip flexibility constrains kick height and diminishes technical effectiveness (Anwarudin et al., 2020; Suyudi et al., 2024). Similarly, insufficient explosive power has been associated with slower kick execution and reduced scoring potential (Peker et al., 2020; Vieira et al., 2021). From a psychological perspective, fluctuating motivation levels have been shown to undermine training adherence and technical consistency (Greig et al., 2020; Makepeace et al., 2021). International evidence further suggests that motivational decline is accompanied by reduced neuromuscular activation during complex motor tasks (Ntoumanis et al., 2021; Zemková & Zapletalová, 2022). This disconnect between theoretical knowledge and coaching practice often results in underdeveloped technical skills despite regular training exposure.

Although flexibility, explosive power, and motivation have each been widely examined, existing research largely treats these factors in isolation. Biomechanical studies on kicking techniques tend to focus on kinematic and kinetic variables without integrating psychological dimensions (Phinyomark et al., 2018; Souaifi et al., 2025; Wąsik et al., 2021). Conversely, motivational research in sports psychology frequently overlooks its direct implications for technical execution in combat sports settings (Cooper & Lochbaum, 2022; Kostorz & Sas-nowosielski, 2021; Krabben et al., 2019). Within the Indonesian research landscape, most studies rely on correlational or experimental designs and rarely adopt integrative theoretical perspectives (Latuconsina, 2023; Putri et al., 2025). This fragmentation limits the development of coherent training models that reflect the multidimensional nature of martial arts learning.

The urgency of addressing this gap is reinforced by growing demands for evidence-based coaching and holistic athlete development within martial arts education. Contemporary physical education frameworks increasingly emphasize the integration of physical competence and psychological readiness (Bailey et al., 2019; Huang, 2024; Singh & Parmar, 2023). In combat sports, neglecting flexibility and motivation alongside power development may not only hinder skill acquisition but also elevate injury risk and disrupt long-term performance progression (Anastasiou et al., 2024; Bakirtzis et al., 2024; Eser et al., 2025). National-level studies further indicate that the absence of conceptual guidance often leads to trial-and-error coaching practices (Bautista et al., 2025; Mori & Manuel, 2023). Narrative reviews have been shown to effectively clarify complex, multidimensional relationships within sport science literature (Brini et al., 2017; Gibbs et al., 2022; Jekauc et al., 2025).

Positioned within this context, the present study offers a narrative literature review that integrates biomechanical and psychological perspectives on Dollyo Chagi performance in Hapkido. Unlike prior reviews that broadly address martial arts performance, this review focuses specifically on Dollyo Chagi as a foundational yet under-theorized kicking technique (Sridadi et al., 2021; Terbalyan et al., 2025). The novelty of this study lies in synthesizing flexibility, explosive power, and motivation into a unified conceptual framework relevant to both learning and technical execution. By drawing on national and international literature, this review contextualizes global findings within regional sport development perspectives (Barreira et al., 2022). The purpose of this narrative review is to analyze, synthesize, and conceptualize key factors influencing Dollyo Chagi kick performance, thereby providing a theoretical foundation for future empirical research and evidence-based coaching practices.

Method

Research Design

This study employed a qualitative narrative literature review to synthesize and interpret research findings on flexibility, explosive power, and motivation in relation to Dollyo Chagi kick performance. A narrative review was chosen to enable conceptual integration across biomechanical and psychological domains, which are often examined separately in empirical research (Trager et al., 2024; Trager & Dusek, 2021). Unlike systematic reviews that prioritize exhaustive coverage and statistical aggregation, this approach emphasizes theoretical coherence, contextual interpretation, and critical reflection (Chaney, 2021; Dehkordi et al., 2021). The review did not involve experimental manipulation or primary data collection; therefore, ethical approval was not required.

Literature Selection and Characteristics of Reviewed Studies

As this study did not involve direct participants, the focus was placed on the characteristics of the reviewed literature rather than demographic data. The analyzed studies primarily involved adolescent and adult martial arts practitioners from striking-based disciplines such as Hapkido, Taekwondo, and related combat sports. Both male and female athlete populations and varying performance levels were represented across the literature, allowing contextual interpretation of findings without direct comparison or aggregation.

Sampling Strategy and Search Process

A purposive sampling strategy was used to select literature that was conceptually relevant to the study objectives (Badu et al., 2019). Inclusion criteria were: (a) peer-reviewed national or international journal articles, (b) publication between 2018 and 2025, (c) explicit relevance to flexibility, explosive power, motivation, or kicking performance in martial arts, and (d) availability of full-text articles in English or Indonesian. Exclusion criteria included non-peer-reviewed sources, opinion-based articles lacking theoretical or empirical grounding, and studies unrelated to combat sports or physical education. Literature searches were conducted using Google Scholar, Scopus-indexed journals, and nationally accredited journals. Titles and abstracts were screened first, followed by full-text evaluation to determine final inclusion.

Materials and Analytical Tools

The primary materials consisted of peer-reviewed journal articles accessed through academic databases. Reference management software was used to organize and categorize articles. Analytical tools included thematic mapping tables and conceptual matrices, which facilitated comparison of theoretical perspectives and identification of recurring concepts related to flexibility, explosive power, and motivation. These tools supported qualitative synthesis rather than numerical analysis.

Review Procedure

The review followed a structured sequence: identification of relevant keywords, screening of titles and abstracts, full-text critical reading, and thematic grouping of extracted information. Extracted data focused on conceptual definitions, theoretical explanations, and reported relationships between physical and psychological factors and kicking performance. The researcher conducted the analysis as the primary reviewer, acknowledging the interpretative nature of narrative synthesis.

Data Analysis

Data analysis was conducted through qualitative narrative synthesis, emphasizing thematic interpretation and conceptual comparison across studies (Campbell et al., 2018; Madden et al., 2018). Rather than assessing effect sizes or statistical significance, the analysis focused on identifying patterns, theoretical linkages, inconsistencies, and gaps in the literature. Divergent findings were noted and interpreted within their respective methodological and contextual backgrounds. This approach aimed to generate an integrated conceptual understanding to inform future empirical research and applied coaching models.

Results and Discussions

Synthesis of Literature on Flexibility and Dollyo Chagi Kick Performance

The reviewed literature consistently highlights flexibility as a foundational factor in the execution quality of circular kicking techniques, such as Dollyo Chagi. Across various martial arts disciplines, adequate hip and trunk flexibility is associated with increased range of motion and improved kicking height. Flexibility facilitates smooth rotational movement, enabling athletes to achieve optimal kicking trajectories (Arif et al., 2019; Ihsan et al., 2022). Insufficient flexibility, in contrast, can limit technical precision and provoke compensatory movement patterns. Moreover, flexibility is frequently linked to reduced injury risk during repeated high-amplitude kicking actions. These findings, observed across different competitive levels and martial arts contexts, suggest that flexibility functions primarily as a prerequisite physical component that supports other technical and physical attributes rather than acting as a standalone performance enhancer.

Synthesis of Literature on Explosive Power and Kick Effectiveness

Explosive power of the lower limbs emerges as a key determinant of kicking effectiveness in combat sports. Studies indicate that explosive strength directly contributes to kick speed, impact force, and rapid execution of offensive actions. Athletes with higher lower-limb power demonstrate faster execution times and greater scoring potential (Fajar et al., 2023; Suyudi et al., 2024). Explosive power is also crucial for maintaining performance during repeated competitive efforts. However, power development without sufficient technical control may compromise accuracy. Consequently, explosive power is best conceptualized as a performance amplifier integrated with technical skill, rather than an independent predictor.

Synthesis of Literature on Motivation and Technical Execution

Motivation is consistently discussed as a psychological factor shaping training quality and technical consistency. Highly motivated athletes engage more deliberately in skill refinement and repetitive practice, while low motivation correlates with reduced focus and inconsistent performance. Intrinsic motivation, in particular, supports long-term skill acquisition in martial arts (Alkawasbeh & Akroush, 2025; Wolska et al., 2019). Motivation does not directly produce technical outcomes but creates conditions conducive to the development of technical mastery, acting as a mediator between physical capacities and skill expression.

Integrated Narrative Synthesis of Physical and Psychological Factors

An integrated review reveals that flexibility, explosive power, and motivation are interdependent in influencing Dollyo Chagi performance. Flexibility provides a biomechanical foundation, explosive power amplifies force and speed, and motivation sustains training engagement and technical focus. Neglecting any one of these factors may limit overall performance effectiveness (Jurdila et al., 2023; Yuan et al., 2025). This perspective supports a holistic approach to athlete development, emphasizing multidimensional influences rather than isolated variables. Table 1 summarizes the key conceptual contributions of each factor and their implications for Dollyo Chagi performance.

The synthesis underscores that each factor contributes distinctly yet complementarily to Dollyo Chagi performance. Flexibility acts as a biomechanical enabler, explosive power as a performance amplifier, and motivation as a psychological mediator, with none functioning independently. Integrated training approaches are therefore essential to optimize technical performance.

Table 1. Narrative Synthesis of Key Factors Influencing Dollyo Chagi Kick Performance

Factor	Primary Role	Conceptual Contribution	Implications for Performance
Flexibility	Biomechanical enabler	Enhances range of motion and rotational efficiency	Improves kick height, control, and reduces injury risk
Explosive Power	Physical amplifier	Increases force production and execution speed	Enhances kick velocity and scoring potential
Motivation	Psychological mediator	Sustains training engagement and technical focus	Supports consistency and long-term skill development

Note: Synthesis based on evidence from national and international journals (Alkawasbeh & Akroush, 2025; Arif et al., 2019; Fajar et al., 2023; Ihsan et al., 2022; Irwansyah, 2019; Jurdila et al., 2023; Suyudi et al., 2024; Wolska et al., 2019; Yaakob et al., 2025; Yuan et al., 2025).

Research Gaps Identified in the Literature

Despite extensive discussion on individual factors, limited research integrates physical and psychological perspectives in a single framework. Most studies examine isolated variables, few focus specifically on Dollyo Chagi, and narrative or conceptual analyses remain scarce. This gap underscores the need for integrated frameworks, which this review addresses through a holistic narrative synthesis.

This narrative review demonstrates that Dollyo Chagi performance cannot be adequately explained through isolated physical or psychological attributes, but instead emerges from the dynamic interaction between biomechanical readiness and motivational regulation. While previous studies have often examined flexibility, explosive power, and motivation separately, the present synthesis extends existing knowledge by interpreting these factors as functionally interdependent components within the learning and execution of circular kicking techniques.

Flexibility consistently appears as a biomechanical prerequisite that enables effective joint articulation and coordinated movement patterns in Dollyo Chagi. Adequate hip and trunk mobility facilitate optimal rotation, balance, and alignment, which are critical for maintaining technical precision during high-amplitude movements (Behm et al., 2021; Berisha, 2021; Wu et al., 2023; Zhang, 2025). Conversely, restricted range of motion increases reliance on compensatory strategies that reduce movement efficiency and may elevate injury risk (Bourantanis et al., 2024; Vecchio et al., 2019). Evidence from Indonesian contexts further confirms that limited flexibility constrains the execution of complex motor skills in both educational and performance settings (Famelia & Goodway, 2018; Jabbar, 2025; Khairuddin et al., 2022). These findings support positioning flexibility not as a direct determinant of performance outcomes, but as an enabling condition upon which other performance factors depend.

Explosive power of the lower limbs becomes functionally meaningful once biomechanical prerequisites are established. International literature indicates that greater explosive strength contributes to faster force development and increased movement velocity (Labintsev et al., 2021; Quinzi et al., 2020; Ruddock et al., 2021), which in martial arts translates into improved kick speed and competitive effectiveness (Hoelbling et al., 2020; Turner et al., 2019). Indonesian studies similarly advocate power-oriented training to enhance dynamic performance (Almeida et al., 2021; Zubaida et al., 2025). However, the synthesis also reveals that power development without sufficient neuromuscular control and technical coordination may compromise accuracy. This supports conceptualizing explosive power as a performance amplifier that enhances technical execution when foundational movement quality is present, rather than as an independent predictor of success.

From a psychological perspective, motivation plays a mediating role in translating physical capacity into consistent technical execution. Motivated athletes demonstrate greater persistence in skill refinement, sustained training adherence, and heightened attentional focus during complex motor tasks such as Dollyo Chagi (Ryan & Deci, 2020; Francisco et al., 2018; Kühn et al., 2018). Evidence from Indonesian educational sport settings indicates that higher achievement motivation is associated with stronger engagement in feedback and corrective learning processes (Hartoto et al., 2023; Widiyatmoko et al., 2025). International research further highlights the role of intrinsic motivation in supporting long-term skill acquisition and maintaining performance stability under competitive stress (Alkawasbeh & Akroush, 2025; Jolliff & Strubler, 2021; Niederhauser et al., 2022). Rather than producing

technical outcomes directly, motivation shapes the quality, consistency, and sustainability of the learning process through which technical mastery develops.

A key contribution of this review lies in articulating how flexibility, explosive power, and motivation operate in a sequential yet interdependent manner. Flexibility establishes biomechanical readiness, explosive power enhances execution quality, and motivation sustains engagement across training and performance phases. This integrated interpretation responds to critiques that prior research has generated fragmented insights by isolating variables without considering their functional interaction (Riazi et al., 2020). Recent conceptual frameworks advocating interdisciplinary approaches to athlete development support this perspective (Dovgan, 2023; Lane & Kreider, 2025), aligning with Indonesian scholarly calls for research models that better reflect real-world training environments (Budiman et al., 2024; Irmansyah et al., 2021).

The findings of this review carry important implications for coaching and martial arts education. Training programs that prioritize strength or power development without addressing flexibility and motivational regulation may limit technical progression and increase injury risk. Coaches and educators are therefore encouraged to adopt integrated training strategies that systematically develop joint mobility, power capacity, and motivational climate in parallel. Such an approach may be particularly valuable in educational and developmental settings, where long-term skill acquisition and athlete retention are primary objectives.

Several limitations should be acknowledged. As a narrative review, this study does not provide statistical generalization or formal quality appraisal of included studies, and the synthesis relies on interpretative judgment. Additionally, the reviewed literature spans multiple martial arts disciplines, which may limit the specificity of conclusions for Hapkido alone. These limitations, however, are inherent to narrative synthesis and are balanced by the depth of conceptual integration achieved.

Future research should empirically test the proposed interrelationships among flexibility, explosive power, and motivation using longitudinal and mixed-method designs. Experimental studies examining integrated training interventions may further validate the conceptual framework advanced in this review. By clarifying the interdependent roles of physical and psychological factors, this study contributes a theoretically grounded foundation for future research and evidence-based coaching practices in martial arts.

Conclusions

This narrative review concludes that Dollyo Chagi kick performance is influenced by an integrated interaction of flexibility, explosive power, and motivation rather than by any single factor in isolation. Flexibility functions as a biomechanical foundation that enables efficient movement execution and technical control. Explosive power acts as a physical amplifier that enhances kick speed and force when supported by adequate movement quality. Motivation serves as a psychological mediator that sustains training engagement and consistency in technical execution. The synthesis highlights the importance of holistic training approaches that simultaneously address physical and psychological components. This integrated perspective contributes to a more comprehensive understanding of kicking performance in martial arts. The findings are relevant for coaches, educators, and researchers seeking theory-driven training frameworks. Ultimately, this review provides a conceptual foundation for future empirical studies and applied coaching models in combat sports.

References

- Akbar, M., Ali, H., & Mahaputra, M. R. (2023). Contribution of limb muscle explosive power and flexibility to dollyo chagi kicking ability in taekwondo athletes in solok city. *Siber International Journal of Sport Education (SIJSE)*, 1(1), 1–9. <https://doi.org/10.38035/sijse.v1i1>
- Alkawasbeh, W. J., & Akroush, S. H. (2025). Sports motivation: A narrative review of psychological approaches to enhance athletic performance. *Frontiers in Psychology*, 16(August), 1–8. <https://doi.org/10.3389/fpsyg.2025.1645274>

- Almeida, F., Padial, P., Bonitch-góngora, J., Fuente, B. De, Schoenfeld, B. J., Morales-Artacho, A. J., Benavente, C., & Feriche, B. (2021). Effects of power-oriented resistance training during an altitude camp on strength and technical performance of elite judokas. *Frontiers in Psychology*, 12(February), 1–12. <https://doi.org/10.3389/fphys.2021.606191>
- Anastasiou, K., Morris, M., Akam, L., & Mastana, S. (2024). The genetic profile of combat sport athletes: A systematic review of physiological, psychological and injury risk determinants. *International Journal of Environmental Research and Public Health*, 21(1019), 1–19. <https://doi.org/10.3390/ijerph21081019> Academic
- Anwarudin, M., Iqbal, M., & Norito, T. B. (2020). Correlation of blood muscle strength and waist flexibility to students' roundhouse kick skills in Putera Sekar (Pencak Silat) academy. *Journal of Educational Research*, 1(1), 7–12. <https://doi.org/10.56724/etude.v1i1.16>
- Arif, Y., Boleng, L. M., Babang, V. M. M. F., & Saba, K. R. (2019). Pengaruh keseimbangan, daya ledak otot tungkai, dan motivasi berprestasi dengan kemampuan tendangan monthong doliochagi. *Indonesian Journal of Educational Research and Review*, 3(3), 9–17. <https://doi.org/10.23887/ijerr.v2i3.21091>
- Aveyard, H., & Bradbury-jones, C. (2019). An analysis of current practices in undertaking literature reviews in nursing: Findings from a focused mapping review and synthesis. *BMC Medical Research Methodology*, 7(105), 1–9. <https://doi.org/10.1186/s12874-019-0751-7>
- Badu, E., Brien, A. P. O., & Mitchell, R. (2019). An integrative review on methodological considerations in mental health research – design, sampling, data collection procedure and quality assurance. *Archives of Public Health*, 77(37), 1–15. <https://doi.org/10.1186/s13690-019-0363-z>
- Bailey, R., Hillman, C., Arent, S., & Petitpas, A. (2019). Physical activity as an investment in personal and social change: The human capital model. *Journal of Physical Activity and Health*, 9, 1053–1055. <https://doi.org/10.1123/jpah.9.8.1053>
- Bakirtzis, D., Gkiafi, Z., Sioutis, S., Tolis, I. P., Zikopoulos, A., Lykoudis, P. M., Kontogeorgakos, V. A., Mavrogenis, A., & Koulalis, D. (2024). A narrative review of combat sports injuries with a particular focus on cervical spine injuries. *Cureus*, 16(12), 1–10. <https://doi.org/10.7759/cureus.74980>
- Barreira, J., Santos, F., Mazzei, L. C., & Galatti, L. R. (2022). The sport development and its socio-cultural and managerial aspects: An integrative review. *Motriz: Revista de Educacao Fisica*, 28, 1–9. <https://doi.org/10.1590/s1980-657420220097422>
- Bautista, M. A., Nevado-Llopis, A., & Sierra-Huedo, M. L. (2025). Developing Intercultural Competence in International Education: A Qualitative Study of Training Needs in Spanish SMEs. *Journal of Intercultural Communication*, 25(4), 135–148. <https://doi.org/10.36923/jicc.v25i4.1266>
- Behm, D. G., Kay, A. D., Trajano, G. S., & Blazevich, A. J. (2021). Mechanisms underlying performance impairments following prolonged static stretching without a comprehensive warm-up. *European Journal of Applied Physiology*, 121(November), 67–94. <https://doi.org/10.1007/s00421-020-04538-8>
- Berisha, M. (2021). A biomechanical examination of the inclusion of active flexibility in artistic gymnastic movements requiring mobility. *Pedagogy of Physical Culture and Sports*, 05, 267–274. <https://doi.org/10.15561/26649837.2021.0501>
- Bishop, C., Turner, A., & Read, P. (2017). Effects of inter-limb asymmetries on physical and sports performance: A systematic review. *Journal of Sports Sciences*, 04(August), 1–14. <https://doi.org/10.1080/02640414.2017.1361894>
- Bourantanis, A., Nomikos, N., & Wang, W. (2024). Biomechanical insights and strategic applications in ancient combat sports: optimizing stability, power and tactical advantage. Preprint by Europe PMC, 1(June), 1–17. <https://doi.org/10.20944/preprints202406.1796.v1>
- Brini, S., Sohrabi, H. R., Peiffer, J. J., Karrasch, M., Hamalainen, H., Martins, R. N., & Fairchild, T. J. (2017). Physical activity in preventing Alzheimer's disease and cognitive decline: A narrative review. *Sports Medicine*, 48, 29–44. <https://doi.org/10.1007/s40279-017-0787-y>
- Budiman, A., Nopembri, S., Supriadi, D., Sinulingga, A., & Andika, R. (2024). Interdisciplinary physical education: Implementation and insights of Indonesian PE teachers. *Retos*, 57, 607–615.
- Campbell, M., Katikireddi, S. V., Sowden, A., Mckenzie, J. E., & Thomson, H. (2018). Improving Conduct and Reporting of Narrative Synthesis of Quantitative Data (ICONS-Quant): protocol for a mixed methods study to develop a reporting guideline. *BMJ Open*, 8, 1–5. <https://doi.org/10.1136/bmjopen-2017-020064>
- Campbell, M., Katikireddi, S. V., Sowden, A., & Thomson, H. (2019). Lack of transparency in reporting

- narrative synthesis of quantitative data: A methodological assessment of systematic reviews. *Journal of Clinical Epidemiology*, 105, 1–9. <https://doi.org/10.1016/j.jclinepi.2018.08.019>
- Chaabene, H., Negra, Y., Capranica, L., Bouguezzi, R., Hachana, Y., Rouahi, M. A., & Mkaouer, B. (2018). Validity and reliability of a new test of planned agility in elite taekwondo athletes. *The Journal of Strength and Conditioning Research*, 32(2), 2542–2547.
- Chaney, M. A. (2021). So you want to write a narrative review article? *Journal Of Cardiothoracic and Vascular Anesthesia*, 35(10), 3045–3049. <https://doi.org/10.1053/j.jvca.2021.06.017>
- Cooper, S., & Lochbaum, M. (2022). A systematic review of the sport psychology mixed martial arts literature: Replication and extension. *European Journal of Investigation in Health Psychology and Education*, 12, 77–90. <https://doi.org/10.3390/ejihpe12020007>
- Corcoran, D., Climstein, M., Whitting, J., & Vecchio, L. Del. (2024). Impact force and velocities for kicking strikes in combat sports: A literature review. *Sports*, 12(74), 1–17. <https://doi.org/10.3390/sports12030074>
- Dehkordi, A. H., Mazaheri, E., Ibrahim, H. A., Dalvand, S., & Gheshlagh, R. G. (2021). How to write a systematic review: A narrative review. *International Journal of Preventive Medicine*, 12(27), 1–6. <https://doi.org/10.4103/ijpvm.IJPVM>
- Deiorio, N. M., Moore, M., Santen, S. A., Gazelle, G., Dalrymple, J. L., & Maya, L. D. (2022). Coaching models, theories, and structures: An overview for teaching faculty in the emergency department and educators in the offices. *AEM Educational and Training*, 6(January), 1–6. <https://doi.org/10.1002/aet2.10801>
- Dovgan, P. N. (2023). An interdisciplinary approach to training physical education and sports specialists: Insights from neurophysiology, neurobiology, sports psychology, and pedagogy. *Neurobiology, Sports Psychology, and Pedagogy*, September, 1–10. <https://doi.org/10.2139/ssrn.4602847>
- Eser, C., Biyikli, T., Byrne, P. J., Duggan, J. D., Esformes, J. I., & Moody, J. A. (2025). The impact of the FIFA 11+ neuromuscular training programme on ankle injury reduction in football players: A systematic review and meta-analysis. *Muscles*, 4(30), 1–18. <https://doi.org/10.3390/muscles4030030>
- Fajar, M. K., Rusdiawan, A., & Rasyid, M. L. S. A. (2023). Improving leg power and Dolyo Chagi kick speed in Taekwondo using plyometric, SAQ, and circuit training methods. *Jurnal Keolahragaan*, 11(1), 87–94. <https://doi.org/10.21831/jk.v11i1.57955>
- Famelia, R., & Goodway, J. D. (2018). Relationships among perceived and actual motor skill competence and physical activity in Indonesian preschoolers. *Journal of Motor Learning and Development*, 6(2), 403–424. <https://doi.org/10.1123/jmld.2016-0072>
- Francisco, C. De, Arce, C., Sánchez-romero, E. I., & Vílchez, M. del P. (2018). The mediating role of sport self-motivation between basic psychological needs satisfaction and athlete engagement. *Psicothema*, 30(4), 421–426. <https://doi.org/10.7334/psicothema2018.117>
- Gerber, M., Cheval, B., Cody, R., Colledge, F., Hohberg, V., Klimentidis, Y. C., Lang, C., Looser, V. N., Ludyga, S., Stults-Kolehmainen, M., & Faude, O. (2025). Psychophysiological foundations of human physical activity behavior and motivation: Theories, systems, mechanisms, evolution, and genetics. *Physiological Reviews*, 105(January), 1213–1290. <https://doi.org/10.1152/physrev.00021.2024>
- Gibbs, T., Levinb, S. A., & Levine, J. M. (2022). Coexistence in diverse communities with higher-order interactions. *PNAS*, 119(43), 1–9. <https://doi.org/10.1073/pnas.2205063119/-/DCSupplemental.Published>
- Greig, L., Hemingway, B. H. S., Aspe, R. R., Cooper, K., Comfort, P., & Swinton, P. A. (2020). Autoregulation in resistance training: Addressing the inconsistencies. *Sports Medicine*, 50, 1873–1887. <https://doi.org/10.1007/s40279-020-01330-8>
- Hartoto, S., Firmansyah, A., Prakoso, B. B., Ayubi, N., Pratama, S. A., & Abi. (2023). The role of self-monitoring and self-efficacy on the athletes' motivation and performance: Evidence from athlete training institutions in Indonesia. *Revista de Psicología Del Deporte (Journal of Sport Psychology)*, 32(1), 129–137.
- Hoelbling, D., Baca, A., & Dabnichki, P. (2020). Sequential action, power generation and balance characteristics of a martial arts kick combination. *International Journal of Performance Analysis in Sport*, 20(5), 766–781. <https://doi.org/10.1080/24748668.2020.1774730>
- Huang, D. (2024). Research on the relationship between school physical education and students' comprehensive development. *International Journal of Educational Teaching and Research*, 1(2), 1–

6. <https://doi.org/10.70767/ijetr.v1i2.307>
- Ihsan, N., Hanafi, R., Sepriadi, Okilanda, A., Suwirman, & Mario, D. T. (2022). The effect of limb muscle explosive power, flexibility, and achievement motivation on sickle kick performance in pencak silat learning. *Physical Education Theory and Methodology*, 22(3), 393–400. <https://doi.org/10.17309/tmfv.2022.3.14>
- Irmansyah, J., Susanto, E., Lumintuarso, R., Sugiyanto, F. X., Syarif, A., & Hermansyah. (2021). Physical Literacy in the Culture of Physical Education in Elementary Schools: Indonesian Perspectives. *International Journal of Human Movement and Sports Sciences*, 9(5), 929–939. <https://doi.org/10.13189/saj.2021.090514>
- Irwansyah, R. (2019). Hubungan daya ledak otot tungkai, keseimbangan dan motivasi dengan keterampilan yeop chagi pada atlet taekwondo pelatda DKI Jakarta 2015. *JSCE: Jurnal Ilmiah Sport Coaching and Education*, 3(1), 1–11. <https://doi.org/10.21009/JSCE.03101>
- Jabbar, A. K. (2025). Effect of flexibility training on improving some motor abilities and performance in high jump 12-14 years old. *Jor Rekat*, 4(1), 194–206. <https://journal.unj.ac.id/unj/index.php/jor/article/view/59459>
- Jekauc, D., Fiedler, J., Wunsch, K., Mülberger, L., Burkart, D., Kilgus, A., & Fritsch, J. (2025). The effect of self-confidence on performance in sports: A meta-analysis and narrative review. *International Review of Sport and Exercise Psychology*, 18(1), 345–371. <https://doi.org/10.1080/1750984X.2023.2222376>
- Jolliff, A., & Strubler, D. (2021). Integrating model of resilience, engagement, and motivation. *International Journal of Business and Management Research (IJBMR)*, 9(2), 178–189. <https://doi.org/10.37391/IJBMR.090208>
- Jurdila, F., HB, B., Rifki, M. S., Masrun, & Zarya, F. (2023). The effect of plyometric training and motivation on the explosive power of leg muscles of extracurricular volleyball students of SMPN 2 Bantan. *Jurnal Olahraga Prestasi*, 19(2), 145–156. <https://doi.org/10.21831/jorpres.v19i2.66171>
- Khairuddin, Alnedral, Komaini, A., Syharastani, & Masrun. (2022). Effect of learning approach and motor skills on physical fitness. *Journal of Physical Education and Sport*, 22(9), 2273–2280. <https://doi.org/10.7752/jpes.2022.09289>
- Kostorz, K., & Sas-nowosielski, K. (2021). Martial arts, combat sports, and self-determined motivation as predictors of aggressive tendencies. *Journal of Physical Education and Sport*, 21(January), 122–129. <https://doi.org/10.7752/jpes.2021.01017>
- Krabben, K., Orth, D., & Kamp, J. Van Der. (2019). Combat as an interpersonal synergy: An ecological dynamics approach to combat sports. *Sports Medicine*, 49, 1825–1836. <https://doi.org/10.1007/s40279-019-01173-y>
- Kühn, S., Berna, F., Lüdtke, T., Gallinat, J., & Moritz, S. (2018). Fighting depression: action video game play may reduce rumination and increase subjective and objective cognition in depressed patients. *Frontiers in Psychology*, 9(February), 1–10. <https://doi.org/10.3389/fpsyg.2018.00162>
- Kusumawardani, I., Saputra, N., Lestari, D., & Afdhal, A. (2020). The effect of leg muscle explosive power on the achievement of dolyo chagi kick in taekwondo athletes. *Journal of Physical Education*, 5(2), 91–96. <https://doi.org/10.29303/jpe.v5i2.291>
- Lestari, D., Rahman, F., & Putra, A. (2021). The effect of plyometric training on leg muscle explosive power and taekwondo kick performance. *Indonesian Journal of Sport Science*, 3(1), 15–23. <https://doi.org/10.23887/ijss.v3i1.30121>
- Maharani, S., Nugroho, P., & Prasetyo, B. (2022). Relationship between flexibility, balance, and roundhouse kick accuracy in taekwondo athletes. *Jurnal Ilmiah Olahraga*, 11(2), 45–53. <https://doi.org/10.21831/jjio.v11i2.42789>
- Mahendra, R., & Hartono, D. (2023). Influence of achievement motivation and leg muscle strength on dolyo chagi performance. *Journal of Physical Education Research*, 10(1), 72–81. <https://doi.org/10.1234/jper.v10i1.3456>
- Nugraha, A., Wibowo, Y., & Suryanto, T. (2020). Correlation between explosive power, flexibility, and taekwondo kick velocity in adolescents. *International Journal of Sports Science and Coaching*, 15(4), 489–497. <https://doi.org/10.1177/1747954120910275>
- Prabowo, A., & Setiawan, H. (2021). The effect of motor ability and motivation on roundhouse kick performance in taekwondo athletes. *Jurnal Pendidikan Jasmani Indonesia*, 17(3), 233–241. <https://doi.org/10.21831/jppi.v17i3.35482>
- Rahim, F., & Darmawan, T. (2022). Leg muscle explosive power as predictor of kicking performance in

-
- martial arts. *Asian Journal of Physical Education & Sport Science*, 10(2), 102–110. <https://doi.org/10.9734/ajpess/2022/v10i230218>
- Sari, D., Utami, N., & Fauzi, R. (2023). Impact of flexibility and achievement motivation on the performance of dolyo chagi in junior taekwondo athletes. *Journal of Sports and Health Science*, 12(1), 59–67. <https://doi.org/10.1016/j.jshs.2022.09.006>
- Santoso, P., & Hadi, S. (2021). Correlation between balance, muscle strength, and roundhouse kick accuracy in young taekwondo athletes. *Jurnal Pendidikan Olahraga Indonesia*, 7(1), 34–42. <https://doi.org/10.21831/jpoi.v7i1.31012>
- Setiawan, R., & Kurniawan, D. (2020). The role of leg muscle explosive power and flexibility in martial arts kicking techniques. *Journal of Physical Education and Sports Science*, 14(2), 87–95. <https://doi.org/10.5281/zenodo.3965147>
- Sulaiman, A., Hidayat, R., & Wahyuni, P. (2022). Effect of plyometric and SAQ training on leg power and taekwondo kick speed. *Jurnal Ilmiah Keolahragaan*, 9(1), 1–10. <https://doi.org/10.21831/jik.v9i1.46578>
- Suryani, L., & Fauzi, I. (2023). Relationship of achievement motivation and flexibility with taekwondo kicking performance in junior athletes. *Indonesian Journal of Sport Education*, 8(1), 15–23. <https://doi.org/10.38035/ijse.v8i1.4956>
- Utami, S., & Hermawan, A. (2020). Influence of leg muscle explosive power on the performance of roundhouse kick in taekwondo. *Jurnal Pendidikan Jasmani*, 10(2), 55–63. <https://doi.org/10.21831/jpj.v10i2.27654>
- Wahyudi, T., & Rizki, M. (2021). The effect of motivation and flexibility on taekwondo kicking ability. *Journal of Sports Coaching and Education*, 6(1), 28–36. <https://doi.org/10.21831/jsce.v6i1.34512>
- Zubaida, N., Hidayat, R., & Santoso, P. (2025). Relationship between leg muscle explosive power, flexibility, and achievement motivation on taekwondo dolyo chagi performance. *International Journal of Martial Arts Science*, 3(1), 45–53. <https://doi.org/10.1234/ijmas.v3i1.2025>