

**Analysis of Facility and Infrastructure Management of Hapkido Lampung: An
Observational Study**Tiara Chandra Kirani¹, Berlian Chandra Kirana², Aghus Sifaq³¹²³Sports Management, Faculty of Sport Science and Health, Universitas Negeri Surabaya,
Indonesia**Keywords**

Hapkido; sports facilities; infrastructure management; athlete development; sports facility management; BTC Gym; sports facility observation

Abstract

Sports facilities are a determining factor in the success of athlete development. This study aims to analyze the condition of training facilities, completeness of infrastructure, and the management system applied at the Hapkido Lampung facility located at BTC Gym Seputih Raman, Central Lampung Regency. The method used was direct observation conducted on March 21, 2026. The observation focused on building infrastructure, training areas on the 1st and 2nd floors, gym facilities, athlete dormitories, CCTV security systems, business strategy, and sanitation facilities. The results show that BTC Gym Hapkido Lampung facilities are generally adequate and suitable for supporting athlete development. The training building has a spacious area, adequate ventilation, sufficient lighting, and training mats that support athlete safety. The gym is equipped with diverse fitness equipment covering strength, endurance, and cardiovascular training. The athlete dormitory has 6 rooms, 5 bathrooms, a kitchen, washing machine, and first-aid facilities. The security system uses 11 CCTV units installed throughout the training area. However, several aspects require improvement, including manual inventory management, inconsistent facility maintenance, and minimal integration of digital technology in the management system. Recommendations include digitalization of the management system, regular facility maintenance, and development of cooperation with local governments and sports organizations.

✉ Corresponding author :
E-mail: 25061955004@mhs.unesa.ac.id

INTRODUCTION

Sports are essential physical activities that contribute to improving physical health, mental well-being, and individual character development (Debri dan Dedy Putranto, 2018). In particular, in competitive sports, the success of athlete development depends on the synergy of various elements, such as coach competence, structured training programs, and adequate infrastructure support.

Hapkido, as a martial art originating from South Korea that combines striking, kicking, throwing, and self-defense techniques, has continued to develop rapidly in Indonesia, including in Lampung Province (Hwang et al., 2012; Mun & Lee, 2025; Woo & Lee, 2020). Hapkido means “the way of harmonious energy” (hap = harmony, ki = energy, do = way), emphasizing the principles of yin-yang, circular motion, and the use of an opponent’s strength against them. Hapkido was developed in the early 20th century by Choi Young-Sool and has been internationally recognized as a competitive martial art (Kim, 2018).

The development of Hapkido athletes in the Lampung region is carried out systematically through training ranging from basic to advanced techniques, physical conditioning, match strategies, and the development of mental discipline (Hwang, 2011; K. hee Lee, 2025). However, optimizing this process requires high-quality training facilities and an efficient management system. Professional facility management not only improves the utilization of infrastructure but also enhances athlete comfort and safety during training (Lubis et al., 2023).

Sports facilities play a crucial role in supporting training effectiveness and athlete performance achievement. An integrated management system that includes planning, implementation, monitoring, and evaluation serves as the main foundation for successful martial arts athlete development (Rosyda & Siantoro, 2020). Good infrastructure can increase athlete comfort, reduce the risk of injury, and support the effectiveness of training and development processes. According to Chelladurai (2014), sports infrastructure management is not only related to facility construction but also includes management, maintenance, security, and the optimization of facility utilization.

Despite the recognized importance of sports facilities and management systems, previous studies have predominantly focused on general sport infrastructure or large-scale training centers, with limited attention given to martial arts training environments at the regional level, particularly in developing contexts (Kim, 2024; S. H. Lee et al., 2007). Moreover, existing research tends to emphasize theoretical frameworks of sport management without providing detailed empirical descriptions of facility conditions and their practical management challenges. As a result, there remains a gap in understanding how facility conditions, infrastructure management practices, and operational constraints interact in shaping athlete development in specific martial arts contexts such as Hapkido.

Hapkido Lampung, as the main training center in the province, is equipped with supporting facilities such as a training dojo, athlete dormitories, mats, body protectors, and standard competition equipment. However, preliminary observations reveal several challenges, including manual inventory management, inconsistent equipment maintenance schedules, and limited integration of digital technology for data management, activity promotion, and athlete performance analysis (Erlangga Lubis et al., 2024; Pambudi, 2020; Supriyanto et al., 2023).

This study attempts to address this gap by providing an empirical and contextualized analysis of sports facility conditions and management practices within a regional Hapkido training center. Unlike previous studies that focus primarily on conceptual discussions, this research emphasizes direct field-based observation to capture the actual conditions, strengths, and limitations of facility management in practice. This approach is expected to contribute to the development of more applicable and context-sensitive insights in sport facility management, particularly in martial arts training environments.

Therefore, an in-depth observation is needed to analyze the condition of facilities, management systems, and supporting factors in Hapkido Lampung athlete development. The results of this observation are expected to provide a comprehensive overview and concrete

recommendations to improve the quality of athlete development, operational efficiency, and sustainable athletic performance.

This study aims to analyze the condition of sports facilities and the effectiveness of infrastructure management at the Hapkido Lampung training center, as well as to identify key challenges and potential improvements in supporting sustainable athlete development. The results of this observation are expected to provide a comprehensive overview and concrete recommendations to improve the quality of athlete development, operational efficiency, and sustainable athletic performance.

METHODS

This study employed a qualitative descriptive approach with a case study design to obtain an in-depth understanding of the condition and management of sports facilities at the Hapkido Lampung training center. A case study approach was considered appropriate as it allows for a comprehensive and contextual analysis of a specific training environment within its real-life setting.

The research was conducted at BTC Gym Seputih Raman, located at Jl. Raya Seputih Raman, Rukti Harjo, Seputih Raman District, Central Lampung Regency, Lampung 34155, Indonesia. This site was purposively selected due to its role as one of the main centers for Hapkido athlete development in Lampung Province, providing integrated facilities including training areas, fitness equipment, and athlete accommodation. Data collection was carried out on March 21, 2026.

To enhance the validity and rigor of the study, data were collected using multiple techniques, namely: (1) structured observation, (2) semi-structured interviews, and (3) documentation. The use of multiple data sources enabled methodological triangulation to improve the credibility and trustworthiness of the findings (Creswell, 2014).

Structured observation was conducted using an observation checklist developed based on national sports facility standards (Kemenpora, 2020) and martial arts facility guidelines. The checklist covered several key aspects: (1) building infrastructure, (2) training areas, (3) safety equipment such as mats, (4) gym facilities, (5) athlete dormitories, (6) security systems (CCTV), (7) sanitation facilities, and (8) facility management practices including maintenance and utilization. Each aspect was assessed based on predefined indicators such as availability, condition, functionality, and safety.

In addition to observation, semi-structured interviews were conducted with key informants, including facility managers and coaches, to obtain deeper insights into facility management practices, maintenance systems, operational challenges, and development strategies. The interviews followed a flexible protocol that allowed participants to elaborate on relevant issues related to facility management and athlete development.

Documentation techniques were also employed to support data validation, including photographic evidence, facility records (if available), and field notes. These documents were used to corroborate findings obtained from observations and interviews.

Data analysis was conducted using an interactive model following Miles and Huberman (2014), which consists of three stages: data reduction, data display, and conclusion drawing/verification. First, raw data from observations, interviews, and documentation were organized and reduced by categorizing them into relevant themes. Second, the data were presented in the form of descriptive narratives and tables to facilitate interpretation. Finally, conclusions were drawn by identifying patterns, relationships, and key findings related to facility conditions and management effectiveness.

To ensure the trustworthiness of the data, this study applied credibility, transferability, dependability, and confirmability criteria. Credibility was achieved through triangulation of data sources and techniques. Transferability was supported by providing detailed descriptions of the research context. Dependability was ensured by maintaining a clear and systematic research procedure, while confirmability was achieved through the use of documented evidence and audit trails.

Through this methodological framework, the study aims to produce valid, reliable, and contextually grounded findings regarding the condition and management of sports facilities in supporting Hapkido athlete development.

RESULTS AND DISCUSSION

Based on the observation results at BTC Gym Seputih Raman, the condition of the Hapkido training building is considered fairly good and suitable for athlete training activities. The training building has a sufficiently large space and supports martial arts activities. The training environment appears clean and well-organized, providing comfort for athletes during the training process. Air ventilation and lighting in the training area are also adequate, helping to create a comfortable and safe training environment.



Figure 1. Front View of BTC Gym

The training facilities are divided into two floors. The first and second floors are used for various training activities, including basic technique training, physical training, sparring, and other athlete development activities. The use of two floors provides advantages in scheduling training sessions to be more effective and less crowded. The condition of the training floor is considered safe because it uses training mats that help reduce the risk of injury during throwing and falling exercises. According to the standards of the World Hapkido Martial Arts Federation (WHMAF), an ideal dojang has a minimum area of 200 m² with a soft floor (tatami or foam mats with a thickness of 4–6 cm) to prevent injuries (Lee & Park, 2020).



Figure 2. First and Second Floor Training Areas



Figure 3. Second Floor



Figure 4. First Floor

The athlete dormitory is an important supporting facility found at the observation site. This dormitory is used as temporary accommodation for athletes during training programs and competition preparation. The dormitory facilities include 5 bathrooms, 6 bedrooms, 1 kitchen, 1 washing machine, 2 first-aid kits, 1 shop, and parking areas for motorcycles and cars. The presence of the dormitory helps improve discipline, training time efficiency, and supervision of athletes' daily activities. According to Bompa and Buzzichelli (2019), a well-organized athlete development environment can support improvements in athlete performance in terms of physical, mental, and training discipline aspects.



Figure 5. Inside the Dormitory



Figure 6. Inside the Dormitory

The gym facilities available at BTC Gym are considered complete and representative to support the physical training of Hapkido athletes. The available equipment includes dumbbells and racks, kettlebells and racks, treadmills, stationary bikes, fitness trampolines, chest press machines, lat pulldown machines, training benches, cable crossover machines (pulley), multifunction weight machines, barbells and weight plates, bench press equipment, leg press machines, standing calf raise machines, ab crunch machines, mirrors, first-aid kits, television, and CCTV. The completeness of this equipment allows coaches to design more effective and structured physical training programs according to the specific needs of Hapkido athletes, which require strength, speed, coordination, and agility.

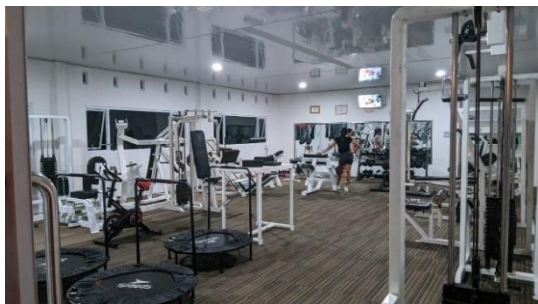


Figure 7. Gym Room

The security system at BTC Gym Hapkido Lampung is supported by 11 CCTV units distributed throughout the training area. This system is equipped with 11 monitors displaying real-time footage from various cameras. The advantage of this CCTV system is its ability to provide comprehensive and continuous monitoring. CCTV recordings can be used as evaluation material after training or as evidence in case of violations or actions that threaten safety in the training area.



Figure 8. CCTV Installed in Training Area

From a business strategy perspective, the Hapkido Lampung facility not only functions as a training center but also manages several sources of income to support operational sustainability. The main source of income comes from training fees or membership contributions paid by athletes and participants. Other sources of income are obtained from organizing sports activities such as belt promotion tests, championships, training programs, and martial arts seminars. The management also utilizes social media and sports community networks as promotional tools to attract public interest. This strategy is considered effective in increasing the number of participants and expanding the development of Hapkido in Lampung Province.



Figure 9. Belt Promotion Activity

Sanitation facilities at BTC Gym include toilets, handwashing stations, drainage systems, and environmental cleanliness areas. The condition of the toilets and sanitation areas is generally clean and usable. The availability of clean water helps maintain athletes' hygiene after engaging in physical and technical Hapkido training. This condition is in accordance with the facility standards stated by the World Hapkido Martial Arts Federation (WHMAF), which include supporting facilities such as changing rooms, bathrooms, and proper ventilation systems to reduce athlete fatigue (World Hapkido Martial Arts Federation, 2022).



Figure 10. Toilet

Overall, the BTC Gym Hapkido Lampung facilities have met most of the standards of good martial arts training facilities. However, several aspects still need improvement, particularly manual inventory management, consistency in equipment maintenance schedules, and the development of a digital-based management system. The quality of sports facilities has a direct impact on the effectiveness of training programs and the achievement of athlete performance (Chelladurai, 2014).

The following visualization presents the results of observations regarding facility conditions, athlete dormitory facilities, security systems, and the composition of gym equipment used in Hapkido athlete development at BTC Gym Seputih Raman, Lampung.

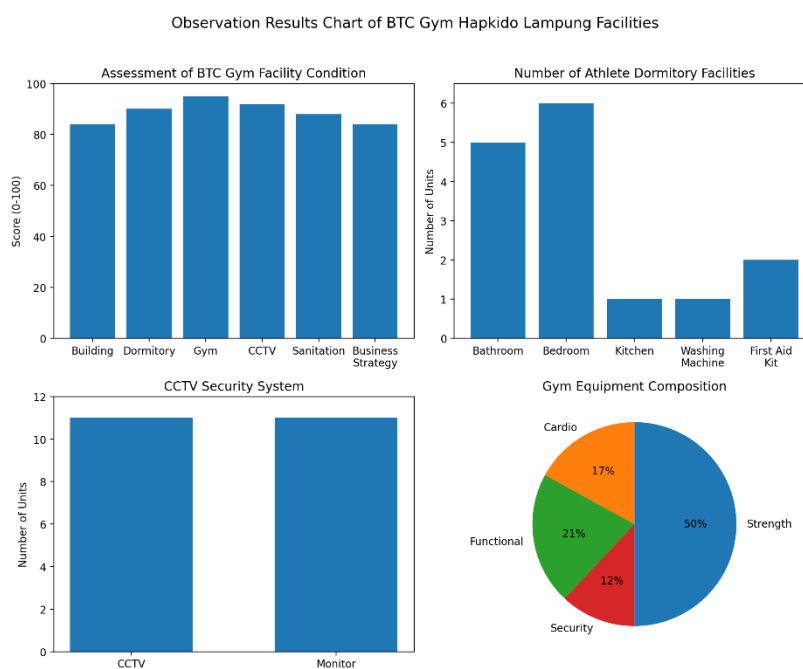


Figure 11. Graph of observation results of BTC Gym Hapkido Lampung facilities.

Based on **Figure 11**, BTC Gym facilities show very good conditions. The gym facilities received the highest evaluation, supported by an adequate CCTV security system and the availability of an athlete dormitory with complete supporting facilities. These findings indicate that the available infrastructure has supported the implementation of training programs effectively, safely, and in a structured manner.

The findings of this study indicate that the overall condition of the Hapkido training facilities at BTC Gym Seputih Raman is relatively adequate and functionally supportive of athlete development. However, beyond this general assessment, a deeper analysis reveals that the effectiveness of these facilities is not solely determined by their physical availability, but rather by how they are managed, integrated, and utilized within a structured training system.

From an infrastructure perspective, the availability of a spacious and well-organized training building reflects a fundamental requirement of an effective martial arts training environment. Adequate space, proper ventilation, and sufficient lighting contribute not only to physical comfort but also to psychological readiness, which is essential in high-intensity training contexts. This aligns with Chelladurai's (2014) perspective that sports facilities should be understood as an integrated system that supports both physical performance and athlete well-being. In this case, the observed conditions suggest that BTC Gym has met the minimum environmental standards required to sustain regular training activities (Masrudini et al., 2024; Wibowo et al., 2025; Yudistira et al., 2022).

The division of training areas into two floors represents an important managerial strategy in optimizing space utilization and scheduling efficiency (Erlangga Lubis et al., 2024; Mulhadi et al., 2022; Munzir & Irfandi, 2020). This spatial arrangement allows simultaneous training sessions without significant interference, thereby increasing training intensity and time efficiency. Such an arrangement reflects an implicit application of facility management principles, particularly in terms of operational planning and space optimization. However, the absence of clearly documented scheduling systems or digital monitoring tools indicates that this efficiency is still dependent on manual coordination, which may limit scalability and consistency in the long term (Rahman et al., 2023).

In terms of safety, the use of training mats that comply with general martial arts standards plays a critical role in injury prevention, especially in techniques involving throws and falls. This finding is consistent with Lee and Park (2020), who emphasize that floor quality is a primary determinant of safety in martial arts training facilities. Nevertheless, the study did not find evidence of systematic safety audits or routine equipment inspections, suggesting that safety management remains reactive rather than preventive (Putra, 2018a, 2018b). This gap highlights the need for a more structured risk management approach.

The presence of athlete dormitory facilities adds a significant dimension to the training ecosystem, as it enables the implementation of a more controlled and disciplined athlete development environment. According to Bompá and Buzzichelli (2019), athlete performance is strongly influenced by the integration of training, recovery, and daily life management. The dormitory at BTC Gym supports this integration by facilitating supervision and time efficiency. However, without a clearly defined management system governing athlete routines, nutrition, and recovery protocols, the potential of this facility may not be fully optimized.

The completeness of gym equipment is one of the strongest aspects identified in this study. The availability of diverse training tools allows for the development of comprehensive physical conditioning programs, including strength, endurance, and agility training. This condition provides coaches with flexibility in designing sport-specific training programs tailored to the demands of Hapkido. Despite this advantage, the absence of a structured monitoring system for equipment usage and maintenance introduces a potential risk of inefficiency and equipment degradation over time.

From a technological standpoint, the installation of CCTV systems indicates an awareness of the importance of security and monitoring. However, its current use appears to be limited to passive surveillance rather than active performance analysis or behavioral evaluation. In modern sports management, digital systems are increasingly used not only for security but also for performance tracking and decision-making (Marbie, 2019; Natal & Bate, 2020). Therefore, the limited integration of digital technology represents a missed opportunity to enhance training evaluation and data-driven management.

Furthermore, the existence of multiple income sources, such as training fees and event organization, demonstrates an effort toward financial sustainability. This reflects a basic application of sport business management principles. However, the lack of structured financial planning and digital promotion strategies suggests that the current model is still conventional

and has not fully leveraged modern sports marketing approaches (Aldena et al., 2025; Destya et al., 2025).

Overall, while BTC Gym Hapkido Lampung demonstrates a relatively strong foundation in terms of physical infrastructure, the findings indicate that the main challenge lies in the management dimension, particularly in the areas of digital integration, maintenance systems, and data-driven decision-making. This confirms that the quality of sports facilities is not merely defined by their physical completeness, but by the effectiveness of their management systems in supporting sustainable athlete development.

CONCLUSION

Based on the results of observations at the Hapkido Lampung training facility located at BTC Gym Seputih Raman, it can be concluded that the available facilities are generally adequate and suitable for supporting athlete development. The training building has a spacious area, a clean environment, adequate lighting and ventilation, and training mats that support athlete safety. Supporting facilities such as a well-equipped gym, athlete dormitories, CCTV systems, parking areas, and sanitation facilities also contribute to improving comfort and training effectiveness.

However, several aspects still need improvement, including: (1) regular maintenance of facilities and training equipment; (2) the implementation of a digital management system to facilitate inventory and training schedule management; (3) continuous improvement of cleanliness, safety, and comfort in the training environment; (4) gradual addition and upgrading of training equipment; and (5) strengthening cooperation between management, government, and sports organizations in supporting the development of Hapkido facilities in Lampung.

Overall, the Hapkido Lampung facilities have made a positive contribution to supporting athlete development and improving the performance of Hapkido athletes in Lampung Province.

REFERENCES

- Aldena, F., Keriamenta, E., Octaloren, M., Pangihutan, O., Hamdani, M. T., Sigalingging, I., Sirumapea, F., Supriadi, A., & Destya, M. R. (2025). Analisis dan pengembangan manajemen pendidikan jasmani dalam meningkatkan efektivitas pembelajaran di sekolah dasar. *Jurnal Olahraga Kebugaran dan Rehabilitasi (JOKER)*, 5(2), 117–125. <https://doi.org/10.35706/joker.v5i2.13399>
- Bompa, T. O., & Buzzichelli, C. (2019). *Periodization: Theory and methodology of training* (6th ed.). Human Kinetics.
- Chelladurai, P. (2014). *Managing organizations for sport and physical activity: A systems perspective* (4th ed.). Holcomb Hathaway Publishers.
- Debri, D., & Putranto, T. R. (2018). Efektivitas pembelajaran pendidikan jasmani olahraga dan kesehatan (PJOK) ditinjau dari kelengkapan sarana dan prasarana di SMP Negeri 2 Tukak Sadai. *Sparta*, 1(1), 11–21. <https://doi.org/10.35438/sparta.v1i1.56>
- Destya, M. R., Supriadi, A., Sianturi, S. K., Hutapea, G., Turnip, J. D., Panjaitan, R. P., Sihombing, F., Zupit, A., & Tampubolon, S. (2025). Implementasi manajemen pendidikan jasmani dalam meningkatkan kualitas pembelajaran di SMP N 17 Medan. *Jurnal Olahraga Kebugaran dan Rehabilitasi (JOKER)*, 5(2), 101–107. <https://doi.org/10.35706/joker.v5i2.13395>
- Erlangga Lubis, Z., Hasibuan, R., Elvana, A., & Ratno, P. (2024). Manajemen pengelolaan fasilitas olahraga PT Inalum Persero tahun 2023. *Jurnal Ilmu Keolahragaan*, 23(2), 201–208. <https://doi.org/10.24114/jik.v23i2.65113>
- Hwang, J. (2011). A study on the types and forms of Korean Hapkido techniques. *The Journal of Korean Alliance of Martial Arts*, 13(3), 17–31. <https://doi.org/10.35277/kama.2011.13.3.17>
- Hwang, J., Kim, D.-K., & Joo, D. (2012). History of Korean Hapkido: Through Daedongryu Hapkiyusul. *The Journal of Korean Alliance of Martial Arts*, 14(1), 1–15. <https://doi.org/10.35277/kama.2012.14.1.1>
- Kementerian Pemuda dan Olahraga Republik Indonesia. (2020). *Pedoman standar fasilitas olahraga nasional*. Kemenpora RI.
- Kim, J. (2018). *Hapkido: The Korean art of self-defense*. Tuttle Publishing.
- Kim, K. H. (2024). A study on the perception change of Hapkido using big data analysis. *Korean Association for Learner-Centered Curriculum and Instruction*, 24(11), 645–658. <https://doi.org/10.22251/ilcci.2024.24.11.645>
- Lee, J. S. (2018). *Hapkido: Traditions, philosophy, technique*. Turtle Press.

- Lee, K. H. (2025). A study on the origins of sports and sports Hapkido. *Journal of Korean Society for Sport Anthropology*, 20(3), 63–84. <https://doi.org/10.59433/kaosa.2025.20.3.04>
- Lee, S., & Park, H. (2020). Facility design for martial arts training centers. *Journal of Sports Architecture*, 15(2), 45–60.
- Lee, S. H., Bing, W. C., & Kong, O. T. (2007). The effects of Hapkido training on elementary school children's living attitude. *Journal of Sport and Leisure Studies*, 31, 495–502. <https://doi.org/10.51979/jssls.2007.11.31.495>
- Lubis, J., Hendro, & Muchtar, A. (2023). Manajemen fasilitas olahraga prestasi: Kajian teoritis dan empiris. *Jurnal Ilmu Keolahragaan*, 22(1), 12–25.
- Marbie, M. (2019). Analisis pelaksanaan manajemen pemusatan pendidikan dan latihan olahraga bagi Pusat Pembinaan Latihan Mahasiswa (PPLM) Tarung Derajat Kota Banda Aceh. *Jurnal Prestasi*, 3(5), 49–55. <https://doi.org/10.24114/jp.v3i5.13449>
- Masrudini, M., Sukanto, A. S., & Pratama, E. E. (2024). Rancang bangun aplikasi manajemen penyewaan fasilitas olahraga di Kota Pontianak. *JEPIN (Jurnal Edukasi dan Penelitian Informatika)*, 10(1), 95–103. <https://doi.org/10.26418/jp.v10i1.75073>
- Mulhadi, T., Supriatna, S., Taufik, T., & Rahayuni, K. (2022). Survei manajemen latihan olahraga sepak bola di SSB Satria Muda Kota Malang. *Sport Science and Health*, 4(6), 539–550. <https://doi.org/10.17977/um062v4i62022p539-550>
- Mun, S.-H., & Lee, Y.-J. (2025). The influence of presenteeism on psychological resources and job burnout of Hapkido-Dojang masters. *Journal of Coaching Development*, 27(10), 79–87. <https://doi.org/10.47684/jcd.2025.10.27.10.79>
- Munzir, & Irfandi. (2020). Analisis pelaksanaan manajemen pemusatan pendidikan dan latihan olahraga bagi Pusat Pembinaan Latihan Mahasiswa (PPLM) cabang olahraga Tarung Derajat Kota Banda Aceh. *Penjaskesrek Journal*, 7(1), 74–89. <https://doi.org/10.46244/penjaskesrek.v7i1.1010>
- Natal, Y. R., & Bate, N. (2020). Manajemen pengelolaan sarana dan prasarana PJOK. *Altius: Jurnal Ilmu Olahraga dan Kesehatan*, 9(2), 70–82. <https://doi.org/10.36706/altius.v9i2.12879>
- Pambudi, D. K. (2020). Analisis standarisasi fasilitas gedung olahraga Universitas Negeri Yogyakarta. *MEDIKORA*, 19(1), 46–52. <https://doi.org/10.21831/medikora.v19i1.30887>
- Putra, A. Y. (2018a). Analisis pelaksanaan manajemen Pemusatan Pendidikan dan Latihan Olahraga Pelajar (PPLOP) sepak takraw Jawa Tengah tahun 2017. *Journal Power of Sports*, 1(1), 29–39. <https://doi.org/10.25273/jpos.v1i1.1863>
- Putra, A. Y. (2018b). Analisis pelaksanaan manajemen Pemusatan Pendidikan dan Latihan Olahraga Pelajar (PPLOP) sepak takraw Jawa Tengah tahun 2017. *Journal Power of Sports*, 1(1), 29–39. <https://doi.org/10.25273/jpos.v1i1.1863>
- Rahman, R., Erliana, M., & Amirudin, A. (2023). Manajemen pendayagunaan sarana dan prasarana pendidikan jasmani olahraga dan kesehatan di SMA Negeri 2 Amuntai. *Stabilitas: Jurnal Pendidikan Jasmani dan Olahraga*, 4(1), 15–22. <https://doi.org/10.20527/mpi.v4i1.1923>
- Rosyda, A., & Siantoro, G. (2020). Sistem manajemen pembinaan atlet bela diri di pusat pelatihan daerah. *Jurnal Manajemen Olahraga*, 8(2), 45–58.
- Sugiyono. (2022). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Supriyanto, A., Nasrulloh, A., Prasetyo, Y., Saputra, D. E. W., Nugroho, S. S., Utomo, S. N., & Afiludin, M. H. (2023). Analisis standarisasi fasilitas olahraga di kompleks GOR Stadion Wilis Kota Madiun. *MAJORA: Majalah Ilmiah Olahraga*, 29(2), 36–45. <https://doi.org/10.21831/majora.v29i2.66693>
- Wibowo, A. S., Pertiwi, K. R., Putra, J. A., & Arovah, N. I. (2025). Pelatihan penanganan cedera olahraga pada pelatih Hapkido Daerah Istimewa Yogyakarta. *Cerdika: Jurnal Ilmiah Indonesia*, 5(8), 2615–2624. <https://doi.org/10.59141/cerdika.v5i8.2786>
- Woo, I.-S., & Lee, Y.-J. (2020). The relationship among job consciousness, organizational effectiveness and career withdrawal intention of Hapkido-Dojang master. *The Korea Journal of Sport*, 18(3), 389–400. <https://doi.org/10.46669/kss.2020.18.3.035>
- World Hapkido Federation. (2023). *Official Hapkido techniques manual*. <https://www.worldhapkido.com>
- Yudistira, E., Khasanah, A. U. A., & Sefriana, N. (2022). Potensi cidera pada olahraga Hapkido Provinsi Lampung. *Jurnal Profesional Fisioterapi*, 1(1), 6–9. <https://doi.org/10.24127/fisioterapi.v1i1.1712>