12 (2) (2025) 461 - 466

Journal of Physical Education, Health and Sport

https://journal.unnes.ac.id/journals/jpehs

The Relationship Between Training Programs and The Achievement Level of Taekwondo Athletes at Dojang Sartika Pati

Salsabilla Pramono Putri[1]✉, Roas Irsyada[2]✉

Jurusan Pendidikan Jasmani Kesehatan dan Rekreasi, Fakultas Ilmu Keolahragaan, Universitas Negeri Semarang, Indonesia[12]

History Article

Received Desember 2025
Approved Desember 2025
Published vol 12 no 2 2025

Keywords

Training Program; Training Intensity; Nutrition; Psychology; Athlete Performance; Taekwondo

Abstract

Several factors, such as constitution of the training program, affect performance of Taekwondo players. The purpose of this research is to examine the relationships between intensity training, rest pattern, nutrition and psychological factors with performance in taekwondo athletes at Dojang Sartika Pati. The design of the study was quantitative correlational research. The sample consisted of 30 athletes using a total sampling. The research tool was a Likert scale questionnaire by the training program indicators and athletes performance. Data analysis was performed in SPSS version 25 with descriptive statistics, normality and linearity tests, as well as Pearson correlation tests. The data indicated a significant relationship between training intensity ($r = 0.435$; $p < 0.05$), rest pattern ($r = 0.489$; $p < 0.05$), nutrition ($r = 0.566$; $p < 0.05$) and the outcome factors that influence an athlete's performance ($r = 0497$, $p < .05$). The best relation to athlete results was with the nutrition variable. The results suggest that a well-designed training program, focusing on exercise, recovery, nutrition and psychology could be essential for enhancing the performance of taekwondo athletes. Thus, maximizing all aspects of the training programme should be one main goal in athlete development at the regional level.

How to Cite

Putri, S. P., & Irsyada, R. (2025). The Relationship Between Training Programs and The Achievement Level of Taekwondo Athletes at Dojang Sartika Pati. Journal of Physical Education, Health and Sport, 12 (2), 461-466.

✉ Correspondence Author:
E-mail: salsabillapramono99@students.unnes.ac.id
roaspjkr@mail.unnes.ac.id

p-ISSN 2354-7901
e-ISSN 2354-8231

INTRODUCTION

Sport is physical activity that is planned and continuous, to improve physical fitness and overall athletic performances (Istiqomah et al., 2021). To maximize their performance, athletes need a process-oriented coaching model that is measurable and sustainable. This coaching involves the Development in many aspects that include physical condition, techniques of play, tactics and mental health, nutrition and rest pattern (Yang et al., 2024). In competitive sports, all training components must be integrated to optimize the athlete›s physical function and psychological abilities. Optimal performance can be achieved through high-quality coaching skills, a well-organized and systematic Development program, and the effective and efficient achievement of performance goals (Wang, 2023). The increasing trend of performance, participation, and competition in competitive sports requires the Development of physical, technical, and psychological qualities (Dereck, 2020).

Good coaching, along with proper mental, technical, and physical training, will achieve maximum performance (Soan, 2017). Science and technology, when applied to a well-programmed training program, will improve its capabilities (Henjilito et al., 2022). A training program is a complete unit of components that cannot be separated, both for improvement and for maintenance. This means that, in an effort to improve physical condition, technique, and tactics, as well as nutrition, rest patterns, and mental Development, all of these components must be developed (with some components requiring a larger training program than others). According to the circumstances or status required, what needs to be known is how an athlete›s physical condition can be assessed at any given time (Buanasita, 2022). This is also necessary for the Taekwondo sport in all athlete camps, both regional and provincial.

Taekwondo, a rapidly developing branch of martial arts in Indonesia, requires athletes to possess a combination of excellent physical, technical, tactical, and mental abilities. PBTI, as the parent organization of Taekwondo in Indonesia, along with its provincial and district-level organizational structure, plays a crucial role in athlete Development. However, the success of the Development is not solely determined by the organization but also depends heavily on the quality of the training program implemented in each dojang (Genç & Dağlıoğlu, 2021). Training programs are a crucial component in shaping athlete performance (Bili & Bete, 2021). A good training program must consider intensity, frequency, duration, training load, and adequate nutritional support and rest (Goodarzi et al., 2020). Furthermore, psychological aspects such as motivation, self-confidence, and the ability to manage anxiety play a significant role in determining the performance of taekwondo athletes (Mylsidayu, 2022).

Several studies indicate that quality of training programs contribute to the success and performance in athletes (Sandbakk et al., 2023; Jayanthi et al., 2022). On the other hand when training is not well-prepared, it would cause decline in performance, loss of motivation and greater risk of getting injured (Nissa & Soenyoto, 2021). The decay of Taekwondo athlete's achievement in Dojang Sartika Pati in the past few years becomes an important issue. Based on observations during training sessions, there was a decrease in interest in training activities and a weakening of physical condition. Furthermore, athletes› ability to maintain mental focus during competition decreased significantly. Athletes' performance levels in Regional and Provincial Championships have therefore deteriorated. A number of factors have been proposed to potentially explain this performance decrement, which include inefficient management of training load, nutritional deficits, poor sleep timings and lack of psychological readiness. Moreover, academic may also have higher preference by student athletes in their final years and thus it led to less training consistency (Hasanpouri et al., 2023). This status calls for re-assessment and reform of the training programme tailored to athletes› physical capacities, along with their psychological status.

The novelty of this study lies in the integrated analysis of training programs and taekwondo athlete performance, involving five main components: training intensity, physical condition, nutritional intake, rest periods, and psychological factors. Unlike previous studies that tended to examine these factors partially, this study places them in a comprehensive relationship model. Furthermore, this study examines explicitly student-level taekwondo athletes at the regional level at Sartika Pati Dojang. This approach makes a novel contribution by mapping the dominant factors that influence athlete performance in a specific, context-specific manner, thereby providing the basis for developing more effective, individualized, and evidence-based training programs.

METHOD

This investigation consists of a quantitative correlational study with factors on training intensity, resting patterns, nutritional habits, psychology and athlete performance. The sampling was total sampling, involving all taekwondo athletes at the Sartika Pati Dojang who actively train between those with normal practice and have competed in official matches, amounting 30 people. An ad-hoc Likert-scale instrument was designed according to the training program dependent variables: Training intensity; Rest; Nutrition; Psychology and Performance of the athlete.

Data analysis The data was analyzed with descriptive statistic test to view the means, standard deviation, minimum and maximum of each variable. Then, a precondition analysis was performed for normality and linearity checks so that the data complied with the correlation test. Once assumptions were satisfied, the analysis progressed to Pearson's correlation test examining relationships between training intensity, rest, nutrition, and psychology and athlete success. All analysis was performed by the SPSS software with version 25.

RESULTS AND DISCUSSION

The purpose of this study is to assess the relationship between training program and performance level of 2025 taekwondo's athlete at dojang Sartika Pati. The variables are measured using a questionnaire instrument, constructed from the indicators of: training intensity, rest, nutrition, psychology and athlete performance. Data obtained will be analyzed with SPSS version 25 by the researcher. The following are the results of the analysis.

Table 1. Frequency Distribution

N=30	Mean	Standar Deviation	Min	Max
Exercise Intensity	25.20	2.265	20	29
Rest	21.37	2.059	17	25
Nutrition	27.00	3.270	20	32
Psychological	21.20	2.188	17	25
Athlete Achievements	22.40	1.734	19	25

Based on the **Table 1** analysis of 30 taekwondo athletes from Sartika Pati Dojang, variables in the training program seem to be different for each component. The average of the training intensity variable is 25.20, and rest has been considered moderate with a mean value of 21.37. Nutrition is the dimension with greatest variability (average 27.00), denoting that athletes´ food needs are properly satisfied. The mean experimental variable'svalue of 21.20 reveals that the mental state of the athletes ismoderate. Values for athlete performance averaged 22.40, indicating a stable level of performance achievements. In general, the descriptive data suggest that nutrition and training intensity are equally loaded among the variables.

Once it is determined that this data are normally distributed and linear (normality test and linearity test) the results show a relationship between the training program variables: intensity, rest, nutrition, psychology and athlete performance. This test of linearity is crucial in considering correlation analysis as a hypothesis testing procedure. The correlation test is then conducted to examine the relationship level among the training intensity, rest, nutrition, psychology and athlete performance variables.

Table 2. Pearson Correlation Test

Variables	r	Sig.	Description	Strength
Exercise Intensity	0.435	0.016	Significant	Currently
Rest	0.489	0.006	Significant	Moderate Strong
Nutrition	0.566	0.001	Significant	Strong
Psychology	0.487	0.006	Significant	Moderate Strong

Results of the **Table 2.** Pearsons correlation test show that all training program factors are significantly correlated to Taekwondo talent performance. The training intensity variable had a moderate relationship, significant at p = 0.016, with r = 0.435. The rest variable returned a moderate-to-strong correlation with r = 0.489, P = 0.006. The nutrition factor showed the strongest correlation, r = 0.566 (p = 0.001), with a positive strong association between the two. Moreover, the psychological variable had an r-value of =.487 (p= 0.006), indicating that there was a moderate to strong correlation. In summary, what these data demonstrate is that the greater the quality of training (and this encompasses training intensity, rest, nutrition and psychological factors), then the higher the level of performance from athletes.

The results showed that the training program of this lesson, consisting of Tournaments intensity; rest, nutritions & mind has significant correlation to studying the performance of taekwondo at Dojang Sartika Pati. These results support previous theories and focused research, in which performance of the athletes is not influen-

ced by one single factor, but by a set of physical, psychological and managerial training factors. The relationship between training intensity and athlete performance for the moderate scale ($p = 0.016$; $r = 0.435$) suggests that as training intensities become more consistent and adequate, athletes' performance increases. These findings are in agreement with Sulatio, (2020) that training at a level of intensity produce an enhancement on the athletic's physical capacity, technique, and adaptation to different loads. Well intensity contributes physically, strength, endurance and speed are very crucial in Taekwondo competitions (Gusnelia et al., 2022). The optimal intensity of training must be high enough to improve not only aerobic/anaerobic capacity, but also enhance technical and tactical skills in Taekwondo competitions. This is in line with the opinion of Sulatio, (2020) that intensity that follows training's principles (overload, progression and specificity) will enhance adaptation of the body thus improving performance (Anggriawan, 2015). Some athletes reported that sometimes training intensity was not paid attention to because of school schedule or a drop in physical condition. This variability in intensity impacted on performance, specifically endurance and technical proficiency when it comes to competition (Anggia et al., 2020). Hence, a more structured policy of training intensity is highly needed for Taekwondo athletes of Dojang Sartika Pati.

In the 'rest' component, $r = 0.489$ ($p = 0.006$) suggests a significant contribution of quality of rest to performance for athletes. This is in accordance with the findings of Fadillah, (2024) that rest is a recovery phase that very determines the body's condition before entering training or competition. Poor sleep can lead to fatigue, reduced focus and risk of injury (Parwata, 2018). Athletes who receive an amount normal sleep (7-8 hours/day) have a performance that better than those who sleep less (Wulandari, 2023). Proper sleep also limits injury danger and encourages muscle growth. This finding has relevance to Dojang Sartika Pati athletes, as some of them experience a decrease in performance and are affected by the fatigue because they do not have enough rest time due to the demands from their academics. Poor quality rest lead to shorter times for recovery that reduced the opportunity to prepare and compete in high-quality matches, decreased fatigue resistance, the development of symptoms of overreaching and underperformance which takes longer time to recover such as athletes fatigues faster, loss ability to concentration during training process and properties more injuries (Wulandari, 2023). Rest is an essential training-loading component involved in the body's recuperation process and will impact its preparedness for subsequent exercise. Thus, time work organization and sleep patterns monitoring on athletes still leave much to improve, for complete recovery and continued performance improvement.

Nutritional factors is the factor most strongly associated with performance ($r = 0.566$; $p = 0.001$). This is evidence that balanced diet enhances both fitness levels. Proper nutrition helps keep energy levels where they should be, facilitates muscle repair, and enhances endurance. This result is consistent with the study done by Kuswari et al., (2021), who put forward that nutrition is crucial for an athlete to be able to achieve success in training. For Taekwondo players, appropriate nutrition is an important factor in maintaining punching power, kicking speed and stamina during competitions (Rahmawati & Riyadi, 2023). According to Sukma, (2020) highlighted that proper nutrition is an important factor in the support of energy requirements, muscle recovery and to sustain stamina during training as well as competition because everything starts with a good foundation: Nutrition. Some athletes at Dojang Sartika Pati still eat suboptimally, either in protein or fluid. In contrast, participants with "good" eating habits demonstrated a relatively stable performance at the competition level, particularly for strength and kicking speed, which are critical components of Taekwondo. These results highlight the importance of nutrition for inclusion in athlete training programs.

Psychological factors were also found to have a significant correlation with athlete performance ($r = 0.487$; $p = 0.006$). Furthermore, it was suggested through this correlation analysis that some impressive mental talents (e.g., self-confidently, concentration, emotional control and anxiety management) are prevalent in Taekwondo competitions. These results are in line with Kriswibowo & Widodo, (2025) who consider that mental factors greatly contribute to an athlete's success. Variance mental state such as anxiety, stage fright, and academic burden can also importantly affect athlete performance (Manah & Jannah, 2020). Some participants also report lower levels of self-confidence and motivation while competing. Recognizing psychological problems that a small number of the players seemed to have, such as low motivation caused by academic pressure and lack of confidence against more skillful competitors. Competitive anxiety can inhibit the performance of an athlete and the

psychological training like mental counseling, Development of Positive Mindset, and exercises visualization is necessary at Dojang Sartika Pati due to develop athlete's Psychological Readiness (Junaidi et al., 2023).

An effective training program should combine the levels of training hard, rest, proper nutritional and psychological care (Baek et al., 2021). These four elements cannot operate alone, but instead are interconnected and affect athletes' overall physical and mental preparedness (Dika, 2024). The nutrition element is the most influential feature to enhance athletes' performance, since good nutrition directly leads to energy availability, muscle recovery and sustained efforts during training and competitions. The factors of intensity,rest and psychology have also shown to be the determining factors in the stability of performance for taekwondo athletes in Sartika Pati Dojang. These results support and extend previous theories, as they are based on data from the realities of local level athlete training. Through optimisation of training programmes in its entirety, it is assumed that the training process will function more efficiently and over time lead to enhanced athletic performance.

CONCLUSION

Research findings from the studies would suggest that factors like training load, recovery pattern, nutrition and psychological aspect are strongly associated with athlete performance. Each of these four constituents has been demonstrated to be beneficial for athlete performance, although with varying levels of influence. The weak association suggests that empirical, steady improvements in training make a difference to performance. In general, the findings of the present investigation suggest that exercise performance depends not only on physical training per se but also on an additive or synergistic interaction between the intensity of training, nutritional support depth, sleep quality, and psychological factors. Thus, the training program in Dojang Sartika Pati must be organized more completely based on these four dimensions so that development will occur more effective and increase the performance optimally. However, the result also has limitations including small amount of samples, using possibly subjective questionnaires and insufficient variables. Subsequently, the investigation needs to be extended with bigger samples, objective types of instruments that could tackle new other variables in the findings, in order to provide more comprehensive and general results.

REFERENCES

Anggia, O., Dwi, I., Wati, P., & Triansyah, A. (2020). Jurnal Ilmu Keolahragaan Volume II Nomor 1 April 2019 Oky Anggia , Isti Dwi Puspita Wati , Andika Triansyah Tersedia di : http://jurnal.untan.ac.id/index.php/jilo Survei Efektivitas Latihan Pada Ekstrakurikuler Sepak Jurnal Ilmu Keolahragaan Volume II Nom. II(April), 1–9.

Anggriawan, N. (2015). Peran Fisiologi Olahraga Dalam Menunjang Prestasi. 11, 8–18.

Baek, S., Park, J., Choi, S., Lee, J., & Nam, S. (2021). Effects of Taekwondo Training on Body Composition : A Systematic Review and Meta-Analysis.

Bili, L. D., & Bete, D. E. M. T. (2021). Lari Berbeban 1 Kg pada Kaki 100 M 4 Repetisi Meningkatkan Kecepatan Tendangan Mawashi Geri Dojo SMP St. Theresia. Gelanggang Olahraga: Jurnal Pendidikan Jasmani Dan Olahraga (JPJO), 4(2), 150–161. https://doi.org/10.31539/jpjo.v4i2.1727

Buanasita, A. (2022). Buku Ajar Gizi Olahraga, Aktivitas Fisik dan Kebugaran. Penerbit NEM.

Dereck, A. (2020). Tingkat Kondisi Fisik Atlet Pplop Taekwondo Jawa Tengah Tahun 2019.

Dika, A. (2024). Perbedaan Ketangguhan Mental Atlet Taekwondo Berdasarkan Jenis Kelamin. AγαηAyu Dika. (2024). Perbedaan Ketangguhan Mental Atlet Taekwondo Berdasarkan Jenis Kelamin. Αγαη, 15(1), 37–48., 15(1), 37–48.

Fadillah, Z. I. (2024). Pentingnya Istirahat Terhadap Pemulihan Fisik dan Mental Atlet. JPKO Jurnal Pendidikan Dan Kepelatihan Olahraga, 2(1), 1–7.

Genç, F. A., & Dağlıoğlu, Ö. (2021). Effect of Plyometric Training Program on Athletic Performance in Young Taekwondo Athletes. 156–166. https://doi.org/10.46827/ejpe.v7i5.4089

Goodarzi, G. R., Mahmoudi, S. M., Kordnaeij, A., Saberi, A., & Babashahi, J. (2020). Designing a Model of Key Factors in Success in Taekwondo (with an Emphasis on the Olympics). 11, 149–160.

Gusnelia, S., Hermanzoni, H., Umar, U., & Setiawan, Y. (2022). Pengaruh Latihan Pliometrik Terhadap Peningkatan Daya Ledak Otot Tungkai Atlet Taekwondo Dojang Kodim 03/04 Agam Bukittinggi. Jurnal Patriot, 4(1), 81–94. https://doi.org/10.24036/patriot.v4i1.793

Hasanpouri, A., Rahmani, B., Gharakhanlou, B. J., & Solaimanian, S. (2023). Nutritional knowledge, attitude, and practice of professional athletes in an Iranian population (a cross - sectional study). BMC Sports Science, Medicine and Rehabilitation, 3, 1–10. https://doi.org/10.1186/s13102-023-00776-3

Henjilito, R., Atiq, A., Syafii, A., Putro, R. A., Alfian, M., Alamsyah, R., & Dkk. (2022). Strategi & Pola Latihan Fisik Atlet Pemula.

Istiqomah, I. P. N., Kristiyanto, A., & Ardyanto, T.

D. (2021). Hubungan Status Gizi dengan Kebugaran Jasmani Atlet Taekwondo Remaja. FISIO MU: Physiotherapy Evidences, 3(1), 1–7. https://doi.org/10.23917/fisiomu.v3i1.14802

Jayanthi, N., Schley, S., Cumming, S. P., Myer, G. D., Saffel, H., Hartwig, T., & Gabbett, T. J. (2022). Developmental training model for the sport specialized youth athlete: a dynamic strategy for individualizing load-response during maturation. Sports Health, 14(1), 142–153.

Junaidi, S., Yuliawan, D., Kholis, M. N., & Allsabah, M. A. H. (n.d.). Level 1 Regional Trainer Training as an Effort to Increase the Competence of Taekwondo Coach ' s in East Java. 4(1), 949–957.

Kriswibowo, R. R., & Widodo, A. (2025). Evaluasi Pertandingan pada Kejuaraan Olimpiade Paris 2024 Cabang Olahraga Taekwondo Kategori Kyorugi Male Under 58Kg. Jurnal Kesehatan Olahraga, December 2024, 32–38.

Kuswari, M., Gifari, N., Taufik, F. J., Febriani, A., & Himarwan, A. (2021). Pendampingan Gizi Atlet Taekondow Indonesia untuk Pra-Kualifikasi Olimpiade 2020.

Manah, A. C., & Jannah, M. (2020). Hubungan Antara Regulasi Emosi Terhadap Kepercayaan Diri pada Atlet Taekwondo di Mojokerto. Character: Jurnal Penelitian Psikologi, 7(4), 155–160.

Mylsidayu, A. (2022). Psikologi olahraga. Bumi Aksara.

Nissa, E. C., & Soenyoto, T. (2021). Hubungan ketangguhan mental dengan kecemasan bertanding pada atlet beladiri PPLP Jawa Tengah. Indonesian Journal for Psysical Education and Sport, 2(1), 267–277.

Parwata, I. M. Y. (2018). Kelelahan dan Recovery dalam Olahraga. Jurnal Pendidikan Kesehatan Rekreasi, 1, 2–13.

Rahmawati, L. S., & Riyadi, H. (2023). Status Gizi, Kualitas Diet, Frekuensi Minuman Isotonik, dan Daya Tahan Anaerobik di Taekwondo Speed Club Wonosobo. 2(September), 190–198. https://doi.org/10.25182/jigd.2023.2.3.190-198

Sandbakk, S. B., Walther, J., Solli, G. S., Tønnessen, E., & Haugen, T. (2023). Training quality—what is it and how can we improve it? International Journal of Sports Physiology and Performance, 18(5), 557–560.

Soan, U. F. (2017). Kebijakan Dan Strategi Pembinaan Olahraga Prestasi Daerah. Jurnal Sains Keolahragaan Dan Kesehatan, 2(1), 20. https://doi.org/10.5614/jskk.2017.2.1.5

Sukma, H. W. (n.d.). Hubungan kualitas tidur, status gizi, tingkat kecukupan energi dan zat gizi makro dengan tingkat kebugaran atlet bela diri kempo Kota Semarang.

Sulatio, A. (2020). Pengaruh Metode Latihan Interval Ekstensif dan Intensif Terhadap Prestasi Lari 400 Meter Putra Atlet PASI Riau. Journal Sport Area Penjaskesrek FKIP Universitas Islam Riau, 1–9.

Wang, P. (2023). Evaluation and analysis of effectiveness and training process quality based on an interpretable optimization algorithm : The case study of teaching and learning plan in taekwondo sport taekwondo sport. Applied Artificial Intelligence, 37(1). https://doi.org/10.1080/08839514.2023.2189667

Wulandari, A. R. (2023). Pola Konsumsi, Aktivitas Fisik, Dan Kualitas Tidur Terhadap Kebugaran Jasmani Pada Atlet Sepak Bola Di Kota Palu. Universitas Widya Nusantara.

Yang, P., Xu, R., & Le, Y. (2024). Factors influencing sports performance: A multi-dimensional analysis of coaching quality, athlete well-being, training intensity, and nutrition with self-efficacy mediation and cultural values moderation. Heliyon, 10(17).