2024, Retos, 51, 1404-1414


# Assessment of sports coaching patterns, physical abilities, and physical fitness in athletics: a study of the provincial sports week championship

# Evaluación de las pautas de entrenamiento deportivo, las capacidades físicas y la forma física en atletismo: estudio del campeonato provincial de la semana del deporte

*Suratmin, *I Putu Darmayasa, *Wigutomo Gozali, *Qonita Awliya Hanif, **Y Touvan Juni Samodra, **Isti Dwi Puspita Wati, ***Didi Suryadi, ***BM. Wara Kushartanti, ***Ella Fauziah, *I Nyoman Sujana, ****I Gusti Putu Ngurah Adi Santika
*Universitas Pendidikan Ganesha, (Indonesia), **Universitas Tanjungpura, (Indonesia), ***Universitas Negeri Yogyakarta, (Indonesia), ****Universitas PGRI Mahadewa Indonesia, (Indonesia)

**Abstract.** The provincial sports week championship (PORPROV) organized by the Indonesian National Sports Committee (INSC) of Bali Province is held every two years followed by INSC Regency or City. Observing the results of each provincial sports week which became the first champion and runner up was always obtained by Badung and Denpasar regencies in a period of ten years. One of the contributors to a large number of medals is the athletic numbers of walking, running, jumping, and throwing as a measured sport. The Indonesian Athletics Association (PASI) of the districts or cities in Bali coaching patterns have not been evenly distributed as evidenced in the acquisition of medals at the provincial sports week, in addition to different coaching patterns supported by other facilities. Therefore, the purpose of the study was to examine the comparison of sports coaching patterns, physical abilities, and physical fitness of PASI athletic athletes at the Bali provincial sports week in 2022. This study uses a combination descriptive method (quantitative and qualitative), with a survey to find a comparison of the results of research data. The research sample was athletic athletes who participated in the Bali provincial sports week in 2022. The data were obtained through observations, interviews, questionnaires, tests and measurements, archives, and documentation. The data analysis used is data triangulation. The results of the study are (1) the creation of athletic sports coaching patterns and strategies through the management of district or city PASI administrators in Bali province to achieve achievement coaching goals, setting targets, and targets in developing and improving athletic sports achievements. (2) The level of physical ability of athletic sports athletes varies according to race numbers; fast walking numbers, running numbers, jumping numbers, and throwing numbers differ in physical needs and abilities. (3) The level of physical fitness of athletic sports number athletes according to the character of the race number, each race number requires different physical fitness. The results of the study make an expected contribution including overcoming obstacles, gaps, and obstacles faced by PASI district or city of Bali Province.
**Keywords:** Sports coaching pattern, physical ability, physical fitness, athletic athletes

**Resumen.** El campeonato de la semana deportiva provincial (PORPROV) organizado por el Comité Nacional Indonesio de Deportes (INSC) de la provincia de Bali se celebra cada dos años seguido por la regencia o ciudad de INSC. Observando los resultados de cada semana deportiva provincial que se convirtió en el primer campeón y subcampeón siempre fue obtenido por Badung y Denpasar regencias en un período de diez años. Uno de los factores que contribuyen a un gran número de medallas son las cifras atléticas de caminar, correr, saltar y lanzar como deporte medido. La Asociación Indonesia de Atletismo (PASI) de los distritos o ciudades de Bali los patrones de entrenamiento no se han distribuido uniformemente, como se evidencia en la adquisición de medallas en la semana deportiva provincial, además de los diferentes patrones de entrenamiento apoyados por otras instalaciones. Por lo tanto, el propósito del estudio era examinar la comparación de los patrones de entrenamiento deportivo, las capacidades físicas y la forma física de los atletas de la PASI en la semana deportiva provincial de Bali en 2022. Este estudio utiliza un método descriptivo combinado (cuantitativo y cualitativo), con una encuesta para encontrar una comparación de los resultados de los datos de la investigación. La muestra de la investigación fueron los atletas que participaron en la semana deportiva provincial de Bali en 2022. Los datos se obtuvieron mediante observaciones, entrevistas, cuestionarios, pruebas y mediciones, archivos y documentación. El análisis de datos utilizado es la triangulación de datos. Los resultados del estudio son (1) la creación de patrones y estrategias de entrenamiento de deportes de atletismo a través de la gestión de los administradores de PASI de distrito o ciudad en la provincia de Bali para alcanzar los objetivos de entrenamiento de logros, el establecimiento de objetivos y metas en el desarrollo y la mejora de los logros de los deportes de atletismo. (2) El nivel de capacidad física de los atletas de deportes de atletismo varía en función de los números de carrera; los números de marcha rápida, los números de carrera, los números de salto y los números de lanzamiento difieren en necesidades y capacidades físicas. (3) El nivel de aptitud física de los atletas de números deportivos de atletismo según el carácter del número de carrera, cada número de carrera requiere una aptitud física diferente. Los resultados del estudio hacen una contribución esperada incluyendo la superación de los obstáculos, las lagunas y los obstáculos que enfrenta PASI distrito o ciudad de la provincia de Bali.
**Palabras clave:** Patrón de entrenamiento deportivo, capacidad física, aptitud física, atletas de atletismo

Fecha recepción: 21-09-23. Fecha de aceptación: 21-11-23
Suratmin
suratmin@undiksha.ac.id

## Introduction

The government of Indonesia continues to improve sports coaching programs to optimally lift sports performance (Aziz, Okilanda, Permadi, et al., 2023; Aziz, Okilanda, Rozi, Suganda, & Suryadi, 2023). Furthermore, because of the tendency toward sporting achievements displayed by Indonesian athletes, they often experience a decline. Indonesian athletes are far behind other countries at both regional and international levels. Indonesia has not been able to beat Thailand and Malaysia at the SEA Games (Hayase, 2020). One of the sports that competes for the most medals is athletics (Lumintuarso, Suharjana, Widiyanto, & Ndayisenga, 2021). However, athletic sports

have not been able to produce the expected number of medals, even though the medals contested in athletic sports are classified as many, namely walking, running, jumping, and throwing. Various athletic sports numbers are contested. These conditions must get comprehensive attention from the government and sports stakeholders in Indonesia (Ma'mun, 2019). Of course, in order to increase the acquisition of athletic medals at regional and international events (Lumintuarso et al., 2021).

Achievements in the field of sports cannot be obtained in a short period of time, even through shortcuts (Suratmin et al., 2022). Sports achievements are produced through coaching, development, and sports assessment programs gradually and continuously over a period of approximately 8–10 years . Improving sports achievement is not an easy thing, like turning the palm of your hand, but it requires optimal coaching and the development of sports science and technology. The direct relationship between coaches and athletes in shaping and achieving athletic sports achievements is very strong (Rubiyatno et al., 2023). So it can be said that the high and low threshold values of athlete achievement will depend a lot on the high and low threshold values of knowledge and skills possessed by the coach. There are three things that can support the success of the coach: 1) educational background; 2) experience in sports; and 3) motivation (Ilham, Amri, Isnanto, & Kadir, 2023). It is clear that the position of the coach cannot be ruled out in fostering sports achievements so that the need for professional coaches with supporting scientific capacity and experience in the field of sports and motivation as a coach (Suratmin et al., 2022). Through the improvement of athletic sports achievements, it will then accumulate towards the achievement of national sports achievements. Athletic sports coaching needs to be improved through various continuous training programs, regular and continuous competitions (Samodra et al., 2023; Suryadi, Okilanda, et al., 2023).

Various efforts need to be made to optimize sports clubs at various levels of coaching, ranging from students to sports in the community. Sports club coaching needs to maintain its existence so that the potential of athletes can develop optimally (Dahlan, Mahyuddin, & Muslim, 2022). A serious commitment to improve the quality of long-term sports coaching certainly requires good management (Fella Suffa, Hartono, & Soenyoto, 2019). Efforts that need to be made are: (1) increasing the quantity and quality of sports clubs, both at the level of supply, nursery, and peak performance. (2) improving management; (3) improving the quality of coaches, coaches, and athletes; and (4) improving the quality of results (Sumarto, 2000). The national sports system has outlined that the coaching and development of athletic sports to achieve the expected achievements must be done starting from an early age by utilizing and based on sports science and technology.

The scientific knowledge of sports must be the basis for achievement; therefore, training programs and the quality of coaches in an effort to carry out their functions to improve athlete performance need to deeply understand sports science and technology. Many factors affect sports achievement. Other than good luck, very important factors include mental, physical, technical, and tactical or strategic maturity. Training is needed to achieve physical fitness (Suryadi, Suganda, et al., 2023), improved physical condition (Hardinata et al., 2023; Supriatna, Suryadi, Haetam, & Yosika, 2023; Suryadi, Yanti, Ramli, Tjahyanto, & Rianto, 2023), techniques and tactics (Rozi et al., 2023), as well as mental maturity, which is adjusted to the demands of each sport per competition with planned, systematic, tiered training increases (progressive overload) and sustainability. The degree of physical fitness, improved physical condition, technique, tactics, and high mental maturity (peak) achieved by athletes at a certain time is unlikely to be maintained in the same position all the time but fluctuates depending on the training performed.

The science of coaching is known as the periodization of training. Periodization is based on the biological laws of athletes who have worked hard during the competition period (Tudor O. Bompa & Buzzichelli, 2021). During the stages of the competition period, the athlete is expected to be in peak condition. After that, the athlete must relax because, at that time, the peak condition is unlikely to be maintained again. Relaxation time is a period for recovery after athletes work hard to do training and matches or competitions, which causes physical and mental fatigue. The relaxation period is usually biological, meaning the physical condition of the athlete concerned is below its peak condition. The demands of physical fitness and physical condition standards for each sport are different, so it is almost impossible to standardize physical fitness and physical condition uniformly for athletes from all sports (Kariyawasam, Ariyasinghe, Rajaratnam, & Subasinghe, 2019).

Sports require high levels of power, strength, speed, flexibility, endurance, reaction, agility, balance, accuracy, coordination, and stamina (Karalejić, Stojiljković, Stojanović, Andjelković, & Nikolić, 2014), and athletics is no exception (Comfort et al., 2023). Athletic sports also require the stabilization of locomotor conditions to gain muscle endurance. There is even a need for dynamic stabilization of the heart and breathing, flexibility, and relaxation. Regular physical training can improve physical fitness and optimal physical condition (Leppänen et al., 2016). Basically, each sport has different characteristics and energy demands, so different training models or methods, training programs, and management in training are needed (T. Bompa & Buzzichelli, 2015).

The coaching pattern is very important in the hope that athletes are able to obtain optimal performance (Rubiyatno et al., 2023). The highest sports achievement is a direct result of the organism's adaptation to the type and method of training (Pelamonia & Puriana, 2023). Given the importance of sustainable coaching patterns through the organization of the provincial sports week in developing athletic sports achievements, it is necessary to support the

community and sports stakeholders in a sustainable, measurable, and comprehensive manner. In organizing the provincial sports week in Bali, there is always a record-breaking number of athletic sports. As a state asset in improving sports performance, it is necessary to take a scientific approach through the study and application of sports science in a comprehensive manner. It is important to examine (1) athletic sports coaching patterns, (2) athletic sports training organization, and (3) athletic sports training methods. However, sports coaching in synergy and sustainability, especially at PASI Bali, has made optimal achievements. It is proven that PASI Bali's athletic coaching has produced achievements that make Indonesia proud, which were inscribed by its flagship athlete, Maria Natalonda. The jump number athlete is the record holder for the National Sports Week (PON) and national long jump and jump numbers and is able to donate the Asian Games gold medal for Indonesia.

The achievement of athletic sports as a measurable sport is a benchmark for the success of PASI sports coaching. One way to measure athletic achievement carried out by PASI Bali province is by organizing a Provincial Sports Week, which is routinely held every two years as one of the evaluations of PASI coaching. Provincial sports week is one way to recruit athletes, measure athletes' abilities, see the results of coaching, and evaluate athletic coaching in the region. The following results of the 2019 provincial sports week in athletics in Tabanan are shown in Table 1.

Table 1.
Results of the 2019 Athletics Number Provincial Sports Week in Tabanan

| District/City | Gold | Silver | Bronze | Ranking |
|---|---|---|---|---|
| Denpasar | 11 | 11 | 6 | 1 |
| Badung | 10 | 11 | 2 | 2 |
| Buleleng | 5 | 1 | 6 | 3 |
| Tabanan | 2 | 3 | 1 | 4 |
| Klungkung | 2 | 1 | 1 | 5 |
| Bangli | 1 | 2 | 5 | 6 |
| Jembrana | 1 | - | 2 | 7 |
| Karangasem | - | 2 | 6 | 8 |
| Gianyar | - | 1 | 3 | 9 |

Source: 2019 Provincial Sports Week Committee Report

Observing the results of the provincial sports week, athletic sports are still donated by PASI Denpasar and Badung Regency, so athletic coaching has not been evenly distributed. Athletic achievement can be achieved by everyone who has the talent, ability, and potential to achieve it. Athletic performance is the main requirement to ensure survival and achieve growth in the field of sports (Sun, Jiang, & Zou, 2021). Sports achievement is carried out through a process of coaching and developing sportsmen in a planned, tiered, and sustainable manner through competition to achieve achievements with the support of sports science and technology (Samodra et al., 2023; Suryadi, Gustian, & Fauziah, 2022). Athletic sports that are individual and measurable require high motivation, especially intrinsic motivation. Athletic sports are rarely interesting, boring, boring to practice, less interesting, and monotonous, so they need strong motivation from within the athlete.

Challenges are encountered in the athletic sports coaching program conducted by PASI Bali province, which includes early-age sports coaching, nursery, scouting, and athletic sports coaching. The systematic, tiered, and sustainable steps taken for intensive coaching aim to guide athletes to elite-level performance. However, several obstacles hinder the PASI Bali athletic coaching program, such as: (1) limited availability of sports facilities and equipment; (2) insufficient funding for sports coaching; (3) inadequate support from the community for sports coaching; (4) a lack of attention from universities, schools, and the Office of Education, Youth, and Sports towards the implementation of sustainable coaching stages; and (5) challenges and delays in obtaining dispensation for athletes who are students or employed individuals (Wahjoedi, Adi, & Danardani, 2009). Assessing and comparing athletic sports coaching becomes crucial to delineate coaching patterns, physical abilities, and fitness levels of PASI athletes in the districts or cities of Bali province, aiming to enhance sports achievements on both national and international stages.

## Materials and Methods

### *Participant*

The population of this study were all athletes, coaches, PASI administrators who participated in the contingent of the Bali provincial sports week in 2022, and officials and coaches of district administrators, city administrators, and provincial administrators of PASI Bali province. The research sample was athletes, coaches, officials, coaches, and PASI administrators who participated in the Bali provincial sports week contingent in 2022, totaling 25–50% of the population. Research data collection techniques with participative rondom sampling both athletes, coaches, officials, coaches, and PASI administrators who participated in the contingent of the Bali provincial sports week in 2022.

### *Study Design*

This research is descriptive research using the survey method. The model used is a qualitative and quantitative descriptive model. This method is used for a comparative assessment of the sports coaching patterns, physical abilities, and physical fitness of PASI sports athletes at the Bali provincial sports week in 2022, organized by nine districts or cities in Bali province. Previously, it was a multi-event in one place, but the 2022 provincial sports week is planned in the form of a single event in each region. Data and information can be obtained through the Bali provincial PASI contingent. This research was conducted to make decisions by choosing the best decision (Sugiyono, 2015). The data analysis used is data triangulation. Tri-angulation is a research approach that uses a combination of more than one strategy in one study to capture data or information. Triangulation is a method used in qualitative research, often also done in quantitative methods. The triangulation approach not only compares data from various sources but also uses various techniques and methods to examine and capture

data or information from the same phenomenon (Wirawan, 2012).

The instruments used in this study are observation, interviews, documents or archives, questionnaires, tests, and measurements. In collecting data, the stages are: (1) observation carried out directly by researchers on the implementation of athletic coaching patterns; (2) interviews with PASI coaches; (3) the results of tests of the physical abilities and fitness of athletic sports athletes; and (4) PASI sports achievements. Furthermore, calibrate the instrument by analyzing the data from the trial to determine its validity and reliability. The validity of the PASI athlete's instrument items was analyzed using Pearson's product moment formula. To test the validity of the athlete questionnaire, coaches and PASI administrators used internal criteria, namely calculating the correlation coefficient of each item with the total factor value. Then compare the values of each factor with the total value of the questionnaire. The results of the athlete, coach, and PASI administrator instrument trials.

The research data collection procedures are as follows: (1) conducting observations carried out directly by researchers (participatory) on the implementation of sports coaching patterns, physical abilities, and physical fitness of PASI sports athletes at the Bali provincial sports week in 2022, (2) conducting interviews with coaches, officials, and administrators about sports coaching patterns, physical abilities, and physical fitness of PASI sports athletes, (3) test results of physical abilities and physical fitness of PASI athletic sports athletes in districts / cities of Bali province, (4) filling out questionnaires about the sports achievements of PASI athletic sports athletes in districts / cities of Bali province.

### *Data analysis*

This research data analysis technique includes: (1) calculating the validity and reliability of athlete and coach questionnaires, (2) analyzing the results of interviews with coaches, officials and PASI teachers, (3) describing the results of interviews and documents/archives obtained in research data collection, (4) analyzing sports coaching patterns, physical abilities, and physical fitness of PASI sports athletes, (5) calculating the physical abilities and physical fitness of PASI sports athletes, and (6) analyzing comparison tests, and triangulating data or information related to research.

## Results

### *Comparative Pattern Analysis of Athletic Sports Coaching in Bali Province*

This study used all athletes, coaches, administrators of the Indonesian Athletics Association (PASI) who participated in the contingent of the provincial sports week in Bali in 2022, and officials and coaches of district administrators, city administrators and provincial administrators of PASI Bali province. Table 1 shows a comparison of athletic sports coaching analysis in Bali province.

Table 2.
Comparison of Athletics Coaching Provincial sports week 2022

| PASI District/City | Athlete Recruitment | Training Program | Evaluation of Sports Coaching | Target | Science and Technology Approach |
|---|---|---|---|---|---|
| Denpasar | - Recruiting Porjar athletes<br>- Fostering senior athletes still dominates | - Periodicity and yearly training program<br>- Regular training<br>- Single event provincial sports week, well prepared, but stadium facilities not optimized | - Regular physical tests and measurements are conducted<br>- Evaluation with a sports science and technology approach- | Provincial sports week champion | -Professional coach, sports education graduate |
| Badung | - Recruiting junior athletes<br>- Fostering senior athletes still dominates | - Periodicity and yearly training programs<br>- Regular training<br>- Single event pro-provincial sports week well prepared | - Regular physical tests and measurements are conducted<br>- Evaluation with a sports science and technology approach | Provincial sports week champion | Professional coach, sports education graduate |
| Buleleng | - Recruiting students and college students<br>- Porjar athletes<br>- Fostering senior athletes | - Periodicity and yearly training programs<br>- Regular training<br>- Single event pro-provincial sports week | - Regular physical tests and measurements are conducted<br>- Evaluation with a sports science and technology approach | Targeting the gold medal | Professional coach, sports education graduate |
| Gianyar | - Recruiting student athletes<br>- Fostering senior athletes | - Periodicity and yearly training programs<br>- Regular training<br>- Single event pro-provincial sports week | - Not conducting regular physical tests and measurements<br>- Approach has not optimized the approach of sports science and technology | Targeting silver and bronze medals | Professional coach, sports education graduate |
| Bangli | - Recruiting student athletes<br>- Fostering senior athletes<br>- Limited athletes sent | - Periodicity and yearly training programs<br>- Regular training<br>- Single event pro-provincial sports week | - Regular physical tests and measurements are conducted<br>- Approach has not optimized the approach of sports science and technology | Targeting silver and bronze medals | Professional coach, sports education graduate |

| | | | | | |
|---|---|---|---|---|---|
| Karangasem | - Fostering senior athletes<br>- Limited athletes | -Periodization and training program per year<br>- Regular training<br>- Single event provincial sports week | - Not conducting regular physical tests and measurements<br>- Approach has not optimized the approach of sports science and technology | Targeting silver and bronze medals | Professional coach, sports education graduate |
| Klungkung | - Fostering senior athletes<br>- Limited athletes | - Periodicity and yearly training programs<br>- Regular training<br>- Single event pro-provincial sports week | -Not conducting regular physical tests and measurements<br>- Approach has not optimized the approach of sports science and technology | Targeting silver and bronze medals | Professional coach, sports education graduate |
| Tabanan | - Fostering senior athletes<br>- Limited sending athletes | - Periodicity and yearly training programs<br>- Regular training<br>- Single event pro-provincial sports week | - Regular physical tests and measurements are conducted<br>- Evaluation with a sports science and technology approach | Gold medal | Professional coach, sports education graduate |
| Jembrana | - Fostering senior athletes<br>- Very few athletes | - Periodicity and yearly training programs<br>- Regular training<br>- Single event pro-provincial sports week | - Not conducting regular physical tests and measurements<br>- Approach has not optimized the approach of sports science and technology | Targeting silver and bronze medals | Sport Coaching |

The results showed that the patterns and strategies of athletic sports coaching through the management of PASI district or capital administrators in Bali province provide information on achieving achievement coaching goals, setting targets, and targets for developing and improving athletic sports achievements. The results can be seen in Table 2.

### *Physical Ability of Athletic Sports Athletes of the 2022 Provincial Sports Week*

Table 3.
Physical Ability of Back Muscles of Athletic Sports Athletes Provincial Sports Week in 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 17 | 0.35 |
| 2 | Good | 20 | 0.41 |
| 3 | Fair | 9 | 0.18 |
| 4 | Poor | 2 | 0.04 |
| 5 | Very poor | 1 | 0.02 |
| | Number (N) | 49 | 100 |

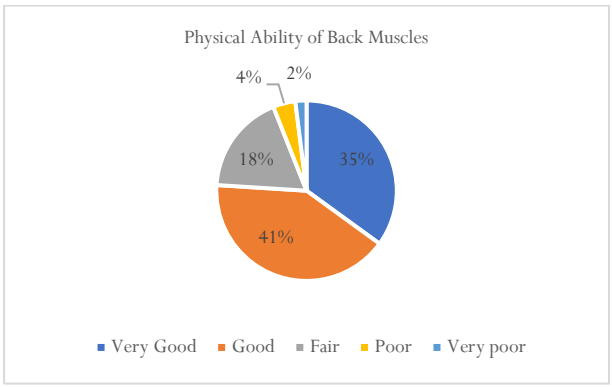


Figure 1. Physical Ability of Back Muscles of Athletic Sports Athletes at the provincial sports week in 2022

Based on the measurement results, it shows that the level of physical ability of the back muscles of athletic athletes in the 2022 provincial sports week, namely the excellent category = 17 people (35%), good = 20 people (41%), enough = 9 people (18%), less = 2 people (4%), and very less = 1 person (2%). The results can be seen in table 3 and figure 1.

Table 4.
Physical Ability of Limb Muscles of Athletic Sports Athletes Provincial Sports Week in 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 23 | 0.47 |
| 2 | Good | 13 | 0.27 |
| 3 | Fair | 9 | 0.18 |
| 4 | Poor | 3 | 0.06 |
| 5 | Very poor | 1 | 0.02 |
| | Number (N) | 49 | 100 |

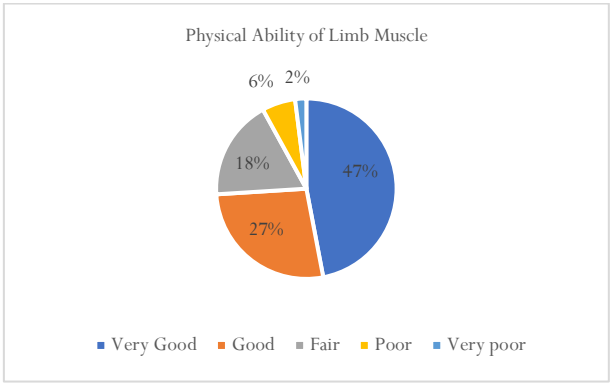


Figure 2. Physical Ability of Limb Muscles of Athletic Sports Athletes at the provincial sports week in 2022

Based on the measurement results, it shows that the level of physical ability of leg muscles in athletic athletes in the 2022 provincial sports week, namely the excellent category = 23 people (47%), good = 13 people (27%), enough = 9 people (18%), less = 3 people (6%), and very less = 1 person (2%). The results can be seen in table 4 and figure 2.

Based on the measurement results, it shows that the level of physical ability of the right hand squeezing muscle strength of athletic athletes in the 2022 provincial sports week, namely the excellent category = 19 people (39%), good = 18 people (37%), enough = 12 people (24%), less = 0 people (0%), and very less = 0 people (0%). The results can be seen in table 5 and figure 3.

Table 5.
Physical Ability of Right Hand Squeeze Muscle Strength of Athletic Sports Athletes Provincial Sports Week 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 19 | 0.39 |
| 2 | Good | 18 | 0.37 |
| 3 | Fair | 12 | 0.24 |
| 4 | Poor | 0 | 0 |
| 5 | Very poor | 0 | 0 |
| | Number (N) | 49 | 100 |

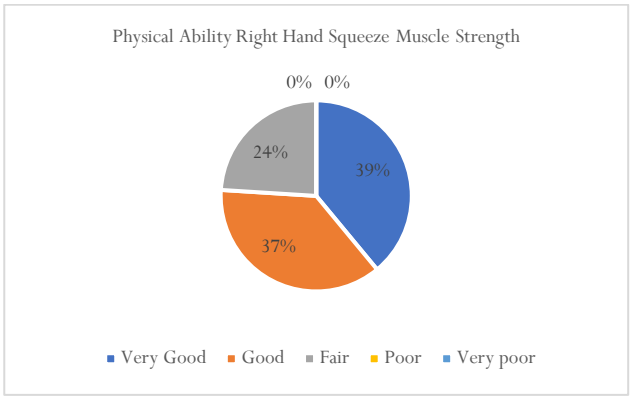


Figure 3. Physical Ability of Right Hand Squeeze Muscle Strength of Athletic Sports Athletes at the 2022 provincial sports week

Table 6.
Physical Ability of Left Hand Squeeze Muscle Strength of Athletic Sports Athletes Provincial Sports Week 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 15 | 0.31 |
| 2 | Good | 18 | 0.37 |
| 3 | Fair | 12 | 0.24 |
| 4 | Poor | 4 | 0.08 |
| 5 | Very poor | 0 | 0 |
| | Number (N) | 49 | 100 |

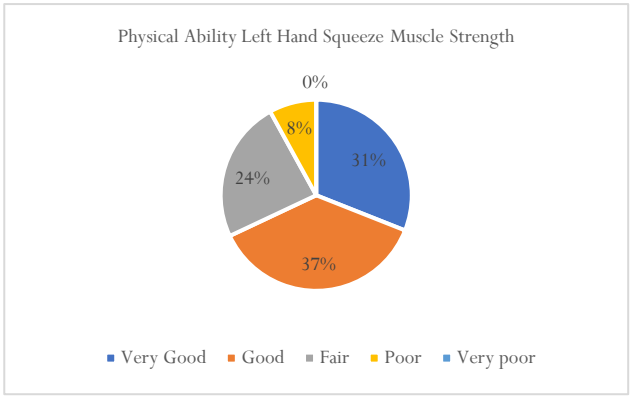


Figure 4. Physical Ability of Left Hand Squeeze Muscle Strength of Athletic Sports Athletes Provincial Sports Week 2022

Based on the measurement results, it shows that the level of physical ability of the left hand squeezing muscle strength of athletic athletes in the 2022 provincial sports week, namely the excellent category = 15 people (31%), good = 18 people (37%), enough = 12 people (24%), less = 4 people (8%), and very less = 0 people (0%). The results can be seen in table 6 and figure 4.

Based on the measurement results, it shows that the level of physical ability of the shoulder arm muscle strength of athletic athletes in the 2022 provincial sports week, namely the excellent category = 5 people (10%), good = 23 people (23%), enough = 21 people (43%), less = 12 people (24%), and very less = 0 people (0%). The results can be seen in table 7 and figure 5.

Table 7.
Physical Ability of Muscular Strength Arm Shoulder Pull Athlete Athletic Sports Provincial Sports Week in 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 5 | 0.1 |
| 2 | Good | 11 | 0.23 |
| 3 | Fair | 21 | 0.43 |
| 4 | Poor | 12 | 0.24 |
| 5 | Very poor | 0 | 0 |
| | Number (N) | 49 | 100 |

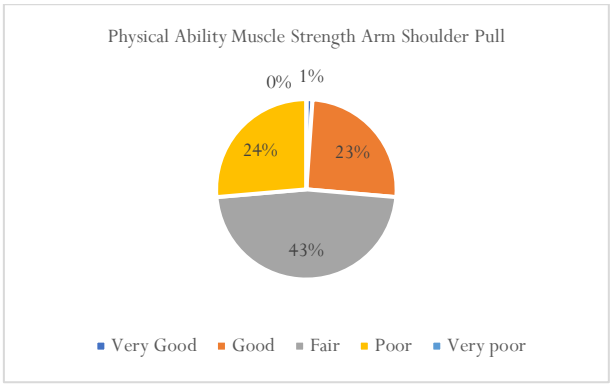


Figure 5. Physical Ability of Muscle Strength Arm Shoulder Pull Athlete Athletics Provincial sports week in 2022

Table 8.
Physical Ability of Muscle Strength Arm Shoulder Thrust Athletes Athletic Sports Provincial Sports Week in 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 9 | 0.18 |
| 2 | Good | 13 | 0.27 |
| 3 | Fair | 20 | 0.41 |
| 4 | Poor | 7 | 0.14 |
| 5 | Very poor | 0 | 0 |
| | Number (N) | 49 | 100 |

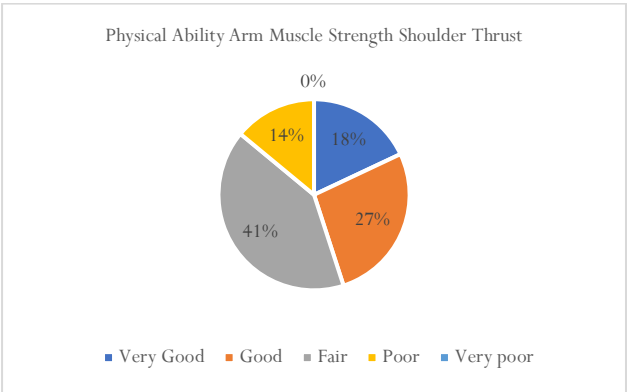


Figure 6. Physical Ability of Shoulder Arm Muscle Strength Push Athletes Athletic Sports Provincial Sports Week 2022

Based on the measurement results, it shows that the level of physical ability of the shoulder arm muscle strength of athletic athletes in the 2022 provincial sports week, namely the excellent category = 9 people (18%), good = 13 people (27%), enough = 20 people (41%), less = 7 people (14%), and very less = 0 people (0%). The results can be seen in table 8 and figure 6.

Table 9.
Physical Ability of Abdominal Muscle Strength of Athletic Sports Athletes Provincial Sports Week 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 6 | 0.12 |
| 2 | Good | 23 | 0.47 |
| 3 | Fair | 11 | 0.23 |
| 4 | Poor | 8 | 0.16 |
| 5 | Very poor | 1 | 0.02 |
| | Number (N) | 49 | 100 |

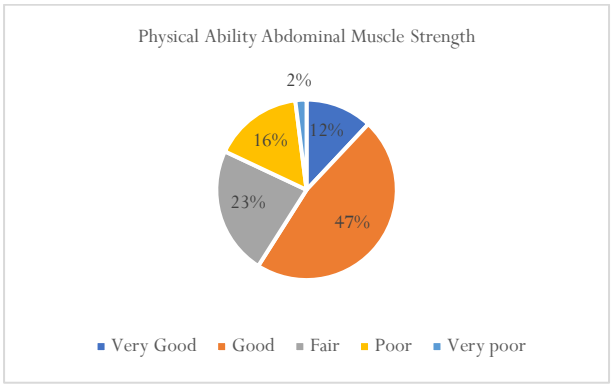


Figure 7. Physical Ability of Abdominal Muscle Strength of Athletic Sports Athletes Provincial Sports Week 2022

Table 10.
Physical Ability Balance of Athletic Sports Athletes Provincial sports week in 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 24 | 0.50 |
| 2 | Good | 9 | 0.18 |
| 3 | Fair | 8 | 0.16 |
| 4 | Poor | 4 | 0.08 |
| 5 | Very poor | 4 | 0.08 |
| | Number (N) | 49 | 100 |

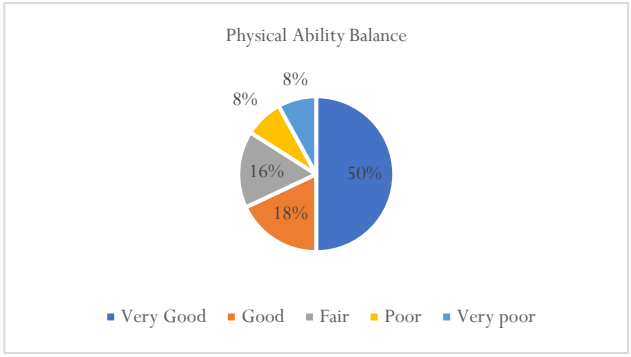


Figure 8. Physical Ability of Balance Athletes Athletic Sports Provincial Sports Week 2022

Based on the measurement results, it shows that the level of physical ability of abdominal muscle strength of athletic athletes in the 2022 provincial sports week, namely the excellent category = 6 people (12%), good = 23 people (47%), sufficient = 11 people (23%), less = 8 people (16%), and very less = 1 person (2%). The results can be seen in table 9 and figure 7.

Based on the measurement results, it shows that the level of physical ability of athletic athletes balancesat the 2022 provincial sports week, namely the category very good= 24 people (50%), good=9 people (18%), enough= 8 people (16%) less = 4 people (8%), and very less people (8%). The results can be seen in Table 10 and Figure 8.

Table 11.
Physical Ability of Limb Muscle Power of Athletic Sports Athletes Provincial Sports Week 2022

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Very Good | 40 | 0.82 |
| 2 | Good | 8 | 0.16 |
| 3 | Fair | 1 | 0.02 |
| 4 | Poor | 0 | 0 |
| 5 | Very poor | 0 | 0 |
| | Number (N) | 49 | 100 |

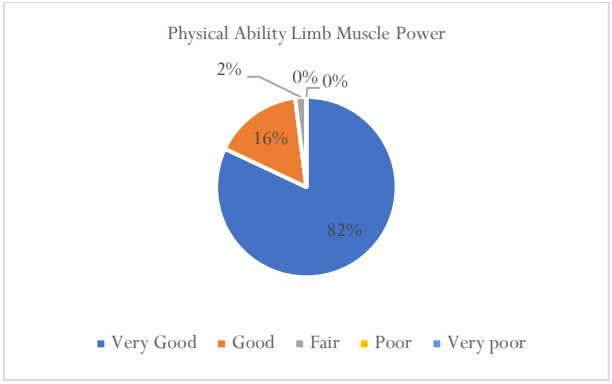


Figure 9. Physical Ability of Limb Muscle Power of Athletic Sports Athletes of the provincial sports week in 2022

Based on the measurement results, it shows that the level of physical ability of leg muscle power of athletic athletes at the 2022 provincial sports week is in the very good category = 40 people (82%), good = 8 people (16%), sufficient = 1 person (2%), less = 0 people (0%), and very less = 0 people (0%). Results can be seen in table 11 and figure 9.

## Physical Fitness of Athletics Athletes of the Provincial Sports Week 2022

Table 12.
Physical fitness of athletes in athletics for the 2022 provincial sports week

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Excellent | 10 | 0.20 |
| 2 | Good | 11 | 0.22 |
| 3 | Fair | 12 | 0.24 |
| 4 | Poor | 10 | 0.20 |
| 5 | Very Poor | 6 | 0.12 |
| | Number (N) | 49 | 100 |

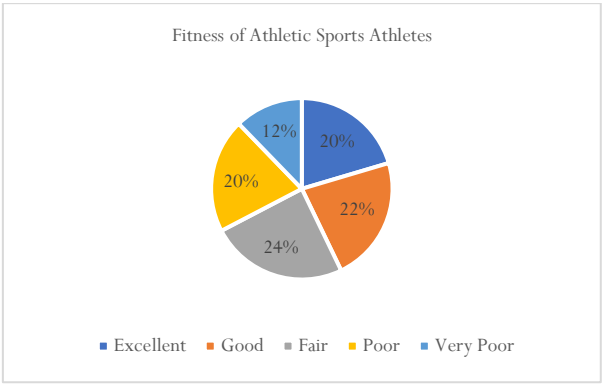


Figure 10. Fitness of Athletic Sports Athletes at the provincial sports week in 2022

Based on the measurement results, it shows that the fitness level of athletic athletes in the 2022 provincial sports week, namely the excellent category = 21 people (20%), good = 11 people (20%), sufficient = 12 people (24%), less = 10 people (20%), and very less = 6 people (12%), then can be seen in table 12 and figure 10.

## Discussion

Provincial sports week Bali in 2022 followed by 9 (nine) districts or cities namely; Buleleng, Jembrana, Tabanan, Badung, Gianyar, Bangli, Karangasem, Klungkung and Denpasar. The provincial sports week organized includes: management and organization management, coaching and training programs, recruitment systems, coaching programs, training strategies and methods, and so on. The coaching system is very important in the hope that athletes are able to obtain optimal achievements. The highest sports achievement is a direct result of the organism's adaptation to the type and method of training (Tanri et al., 2023). Athletic sports are sports with several combined types of sports, such as running, throwing, jumping, and walking (Aziz, Okilanda, Permadi, et al., 2023). Athletic sports are an amalgamation of various sports, athletics is also called the mother of other sports (mother of sport) (Suratmin, 2019). Furthermore, athletics is one of the sports that requires biomotor skills and good movement skills between other limbs. Biomotor ability is very important in the process of improving achievement in sports. Given the importance of sustainable coaching patterns through the organization of the 2022 provincial sports week in building sports achievements, it is necessary to support the community and sports stakeholders in a sustainable, measurable and comprehensive manner. In organizing the provincial sports week, there is always a record breaking in athletics. As a state asset in improving sports performance, it is necessary to take a scientific approach through the study and application of sports science in a comprehensive manner. Athletic sports coaching patterns; (1) athletic sports coaching patterns, (2) athletic sports training organization, and (3) athletic sports training methods, will have an impact on comprehensive athletic coaching.

An athletic sport is a sport that requires power, strength, speed, flexibility, endurance, reaction, agility, balance, accuracy, coordination, and high stamina. Athletic sports are systematic to encourage, foster and develop physical, spiritual, and social potential through competitions that aim to achieve and improve achievements to be able to raise the dignity and honor of the nation in inter-national relations. The national sports system has outlined that the coaching and development of athletic sports to achieve the expected achievements must be carried out starting from an early age by utilizing and based on sports science and technology. Sports science and technology must be the basis for achievement, therefore the training program and the quality of trainers in an effort to carry out their functions to improve athlete performance need to understand deeply sports science and technology (Aziz, Okilanda, Rozi, et al., 2023).

The coach has many roles and responsibilities that directly or indirectly affect the performance and development of the athletes being coached (Pelamonia & Puriana, 2023; Suryadi et al., 2022). In addition to preparing athletes to compete, the coach must also be able to evaluate the athletes and himself. Referring to the development of the world of sports now, only trainers who master sports science and technology can bring athletes to the expected achievements. Sports science and technology do not stand alone, they are related to other disciplines (Suratmin et al., 2022). Undeniably, basic coaching knowledge supported by sports technology will greatly strengthen the role and responsibilities of the coach. The direct relationship between coaches and athletes in shaping and achieving achievement is very strong (Rozi et al., 2023), so it can be said that the high and low threshold value of athlete achievement will depend a lot on the high and low threshold value of the knowledge and skills possessed by the coach. According to (Harse, 2008) there are three things that can support the success of the coach 1) educational background, 2) experience in sports and 3) motivation.

Obviously, the position of the coach cannot be ruled out in fostering sports achievements, so there is a need for professional coaches with supporting scientific capacity and experience in the field of sports and motivation as coaches. Through the improvement of athletic sports achievements, it will then accumulate towards the achievement of national sports achievements. Athletic sports coaching needs to be improved through various continuous training programs, regular competitions, and regular try-out and championship programs as a form of evaluation of athletic sports coaching. Various efforts need to be made to optimize athletic sports clubs at various levels of coaching, ranging from students to those in the community. Athletic sports club coaching needs to maintain its existence so that the potential of athletes can develop optimally. A serious commitment to improve the quality of long-term athletic sports coaching certainly requires good management. Good sports coaching will be very necessary to support achievements in athletes so that all the components needed in the race can be fulfilled (Mashud et al., 2023). One of those that must exist is the physical condition of the athlete.

The athlete's physical condition is required to be excellent. Athletic sports also require the stabilization of locomotor conditions to gain muscle endurance. It is even necessary to stabilize the heart, breathing, dynamic flexibility, and relaxation. Physical training that is carried out regularly can increase physical fitness and optimal physical condition (Miloski, De Freitas, Nakamura, De A Nogueira, & Bara-Filho, 2016; Suryadi, Suganda, et al., 2023). Basically, each sport has different characteristics and energy demands, so different training models or methods, training programs, and management in training are needed (T.O. Bompa & Buzzichelli, 2019). Maximum athletic athlete achievement can be achieved by requiring a more organized, directed,

and sustainable coaching process, accompanied by very adequate supporting facilities. In an effort to improve athletic sporting achievement, a good and structured coaching pattern is needed, which includes several factors, including coaching factors, talent, management, organization, and infrastructure.

Training is a work process that is carried out systematically and continuously, where the load and intensity of training increase day by day. So that it provides a comprehensive stimulus to the body and aims to improve physical and mental abilities together. Physical training in principle is to provide physical pressure (stress) on the body regularly, systematically, and continuously so that there is an increase in the ability to do work (T.O. Bompa & Buzzichelli, 2019). Activities carried out over a long period of time and systematically and progressively according to the level of individual ability aim to form physiological and psychological functions that are eligible for sports activity tasks. Athletic sports competition numbers require diverse physical abilities and different physical elements, both track numbers and field numbers. The level of physical ability of athletic sports athletes varies according to race numbers; fast walking numbers, running numbers, jumping numbers, and throwing numbers differ in physical needs and abilities. The training given by the coach in the periodization and training program is adjusted to the analysis of the needs of the race number.

The performance of endurance training increases as a result of changes in growth and development. Increased muscle mass and increased size of the cardiovascular and respiratory organs will increase the athlete's capacity to use oxygen (Hardinata et al., 2023). An increase in blood hemoglobin (Hb) concentration also leads to an increase in aerobic maximal (Younesi et al., 2021). In most sports, early specialization and strenuous training do not provide tangible benefits. Doing physical activities that individuals do greatly impacts their physical health (Wati et al., 2023). In the training process, efficiency and effectiveness play a very important role that is influenced by elements, namely: 1) training volume, 2) training intensity, 3) training density, and 4) complexity (Tudor O. Bompa & Buzzichelli, 2021). The level of physical fitness of athletic sports number athletes is in accordance with the character of the race number; each race number requires different physical fitness. This study aims to examine the comparison of sports coaching patterns, physical abilities, and physical fitness of PASI athletics athletes at the provincial sports week in Bali in 2022. The results provide information on the patterns and strategies of athletic sports coaching through the management of district or city PASI administrators in Bali province to achieve coaching goals. The results also show that physical abilities and physical fitness in athletics according to race numbers are different from what each number requires. Previous research proves that physical fitness, player ability, and coaching feedback have a significant and positive relationship with athlete satisfaction and performance. The findings also show that athlete satisfaction significantly mediates the relationship between physical fitness, player ability, coaching feedback, and athlete performance in Chinese sports centers (Sun et al., 2021).

## Conclusions

The results of the research obtained can be summarized as follows, (1) the creation of athletic sports coaching patterns and strategies through the management of district or city PASI administrators in Bali province to achieve achievement coaching goals. (2) setting targets and targets for developing and improving athletic sports achievements. (2) The level of physical ability of athletic sports athletes varies according to the race number; fast walking numbers, running numbers, lom-pat numbers, and throwing numbers have different needs and physical abilities. (3) The level of physical fitness of athletic sports athletes varies according to the character of the race number; each race number requires different physical fitness. The results of this study have provided additional information related to achievement coaching, physical abilities, and physical fitness in athletics. So that these results are expected to overcome the obstacles, gaps, and obstacles faced by PASI districts or cities in Bali province. Further research recommendations can look at coaching patterns associated with nutrition and athlete endurance.

## Acknowledgments

The researcher would like to thank the INSC Bali Province, all athletes, coaches, and PASI administrators who participated in the contingent of the Bali provincial sports week in 2022, as well as officials and coaches of district administrators, city administrators, and provincial administrators of PASI Bali province.

## Conflict of interests

There is no conflict of interest.

## References

Aziz, I., Okilanda, A., Permadi, A. A., Tjahyanto, T., Prabowo, T. A., Rozi, M. F., … Suryadi, D. (2023). Correlational study: Sports Students' special test results and basic athletic training learning outcomes. *Retos*, *49*, 519–524. https://doi.org/10.47197/retos.v49.98820

Aziz, I., Okilanda, A., Rozi, M. F., Suganda, M. A., & Suryadi, D. (2023). Results of Special Tests on Sports Students: Does It Have a Relationship with Learning Outcomes of Basic Athletic Practice? *International Journal of Human Movement and Sports Sciences*, *11*(3), 676–682. https://doi.org/0.13189/saj.2023.110322

Bompa, T., & Buzzichelli, C. (2015). *Periodization Training for Sports-3rd Edition* (Third Edit). United States of

America: Human Kinetics.

Bompa, T.O., & Buzzichelli, C. A. (2019). Peridization: Theory and Methodology of Training Sixth edition. In *Champaign, IL : Human Kinetics*. Champaign, IL : Human Kinetics.

Bompa, Tudor O., & Buzzichelli, C. A. (2021). *Periodization of Strength Training for Sports-Fourth Edition*. Champaign : Human Kinetics.

Comfort, P., Haff, G. G., Suchomel, T. J., Soriano, M. A., Pierce, K. C., Hornsby, W. G., … Stone, M. H. (2023). National Strength and Conditioning Association Position Statement on Weightlifting for Sports Performance. *Journal of Strength and Conditioning Research*. https://doi.org/10.1519/JSC.0000000000004476

Dahlan, F., Mahyuddin, R., & Muslim, M. (2022). The Role of Schools and Physical Education in Supporting Sports Achievement: Literature Review. *Jp.Jok (Jurnal Pendidikan Jasmani, Olahraga Dan Kesehatan)*. https://doi.org/10.33503/jp.jok.v6i1.2058

Fella Suffa, Y., Hartono, M., & Soenyoto, T. (2019). Study of Development Philosophy of Indonesian Archery Sports (Study at the National Sports Museum) Article Info. *Journal of Physical Education and Sports*.

Hardinata, R., B, P. S., Okilanda, A., Tjahyanto, T., Prabowo, T. A., Rozi, M. F., … Suryadi, D. (2023). Analysis of the physical condition of soccer athletes through the yo-yo test: a survey study on preparation for the provincial sports week. *Retos*, *50*, 1091–1097. https://doi.org/10.47197/retos.v50.100300

Harse, H. (2008). Coaching dan aspek-aspek psikologis dalam coaching. In *Educacion*.

Hayase, S. (2020). Sports and Nationalism in Southeast Asia: SEAP Games/SEA Games, 1959–2019. *Journal of Asia-Pacific Studies*, *49*, 1–25.

Ilham, A., Amri, M. F. L., Isnanto, J., & Kadir, S. S. (2023). Evaluation of Physical Exercise Program of Table Tennis Club in Bengkulu City. *Journal Of Economics, Technology and Business*, *2*(7), 500–510. https://doi.org/10.57185/jetbis.v2i7.66

Karalejić, S., Stojiljković, D., Stojanović, J., Andjelković, I., & Nikolić, D. (2014). Methodics of developing speed in young athletes. *Activities in Physical Education & Sport*, *4*(2), 158–161.

Kariyawasam, A., Ariyasinghe, A., Rajaratnam, A., & Subasinghe, P. (2019). Comparative study on skill and health related physical fitness characteristics between national basketball and football players in Sri Lanka. *BMC Research Notes*. https://doi.org/10.1186/s13104-019-4434-6

Leppänen, M. H., Nyström, C. D., Henriksson, P., Pomeroy, J., Ruiz, J. R., Ortega, F. B., … Löf, M. (2016). Physical activity intensity, sedentary behavior, body composition and physical fitness in 4-year-old children: Results from the ministop trial. *International Journal of Obesity*, *40*(7), 1126–1133. https://doi.org/10.1038/ijo.2016.54

Lumintuarso, R., Suharjana, Widiyanto, & Ndayisenga, J. (2021). Sports management of indonesian sports athletics preparations in Asian games 2018. *International Journal of Human Movement and Sports Sciences*, *9*(1), :56-61. https://doi.org/10.13189/saj.2021.090108

Ma'mun, A. (2019). Governmental Roles in Indonesian Sport Policy: From Past to Present. *International Journal of the History of Sport*, *36*(4–5), 388–406. https://doi.org/10.1080/09523367.2019.1618837

Mashud, Warni, H., Putra, M. F. P., Haris, M. Al, Samodra, Y. T. J., Tantri, A., … Suryadi, D. (2023). Integrating the Project-Based Learning and the Inclusive Teaching Style: An Innovation to Improve Freestyle Swimming Skills. *International Journal of Human Movement and Sports Sciences*, *11*(5), 956–964. https://doi.org/10.13189/saj.2023.110503

Miloski, B., De Freitas, V. H., Nakamura, F. Y., De A Nogueira, F. C., & Bara-Filho, M. G. (2016). Seasonal Training Load Distribution of Professional Futsal Players: Effects on Physical Fitness, Muscle Damage and Hormonal Status. *Journal of Strength and Conditioning Research*. https://doi.org/10.1519/JSC.0000000000001270

Pelamonia, S. P., & Puriana, R. H. (2023). Retreat dribble and tight zig-zag combo training: does it affect the improvement of basketball athletes' dribble skills? *Tanjungpura Journal of Coaching Research*, *1*(2), 48–55. https://doi.org/10.26418/tajor.v1i2.66778

Rozi, M. F., Resmana, R., Selviani, I., Okilanda, A., Sumantri, R. J., Suganda, M. A., & Suryadi, D. (2023). Imagery and Agility Training: How do They Affect the Reaction Ability of Futsal Goalkeepers? *Physical Education Theory and Methodology*, *23*(3), 325–332. https://doi.org/10.17309/tmfv.2023.3.02

Rubiyatno, Perdana, R. P., Fallo, I. S., Arifin, Z., Nusri, A., Suryadi, D., … Fauziah, E. (2023). Analysis of differences in physical fitness levels of extracurricular futsal students: Survey studies on urban and rural environments. *Pedagogy of Physical Culture and Sports*, *27*(3), 208–214. https://doi.org/10.15561/26649837.2023.0304

Samodra, Y. T. J., Gustian, U., Seli, S., Riyanti, D., Suryadi, D., Fauziah, E., & Mashud. (2023). Somatotype of the Tarung Derajat martial arts athletes in the fighter category. *Journal Sport Area*, *8*(1), 14–23. https://doi.org/10.25299/sportarea.2023.vol8(1).11015

Sugiyono. (2015). Metode Penelitian Kuantitatif, Kualitatif, dan R&D. In *Bandung: Alfabeta*.

Sumarto, S. S. (2000). *Klub Sebagai Ujung Tombak Pembinaan Olahraga di Indonesia*. Malang: Seminar Ilmiah Keolahragaan PON XV.

Sun, L., Jiang, Z., & Zou, B. (2021). Effects of Physical Fitness, Player Ability and Coaching Feedback on the Athletes' Satisfaction and Athletic Performance in China: Moderating Role of Teamwork Competencies. *Revista de Psicologia Del Deporte*.

Supriatna, E., Suryadi, D., Haetam, M., & Yosika, G. F. (2023). Analysis of the Endurance Profile (Vo2max) of Women's Volleyball Athletes: Yo-yo intermittent test level 1. *Indonesian Journal of Physical Education and Sport Science (IJPESS)*, *3*(1), 12–19. https://doi.org/10.52188/ijpess.v3i1.369

Suratmin. (2019). *Profesi Pelatih Olahraga*. Jakarta: PT Rajagrafindo Press.

Suratmin, S., I Putu Panca Adi, I Putu Darmayasa, Wasti Danardani, Ratna Kumala, Hanik Liskustyowati, & Muhammad Fakhrur Rozi. (2022). Evaluation of Multilateral Based Elementary School Students' Athletic Sports Development Program. *Kinestetik : Jurnal Ilmiah Pendidikan Jasmani*, *6*(4), 647–659. https://doi.org/10.33369/jk.v6i4.24560

Suryadi, D., Gustian, U., & Fauziah, E. (2022). The Somatotype of Martial Athletes in the Fighter Category Against Achievement. *JUARA: Jurnal Olahraga*, *7*(1), 116–125. https://doi.org/10.33222/juara.v7i1.1484

Suryadi, D., Okilanda, A., Yanti, N., Suganda, M. A., Mashud, Santika, I. G. P. N. A., … Hardinata, R. (2023). Combination of varied agility training with small sided games: How it influences football dribbling skills? *Pedagogy of Physical Culture and Sports*, *27*(3), 190–197. https://doi.org/10.15561/26649837.2023.0302

Suryadi, D., Suganda, M. A., Sacko, M., Samodra, Y. T. J., Rubiyatno, R., Supriatna, E., … Okilanda, A. (2023). Comparative Analysis of Soccer and Futsal Extracurriculars: A Survey Study of Physical Fitness Profiles. *Physical Education and Sports: Studies and Research*, *2*(1), 59–71. https://doi.org/10.56003/pessr.v2i1.182

Suryadi, D., Yanti, N., Ramli, Tjahyanto, T., & Rianto, L. (2023). Yo-Yo Intermitten Recovery Test: A study of football players' VO2max physical condition. *Journal Sport Area*, *8*(2), 141–150. https://doi.org/10.25299/sportarea.2023.vol8(2).12392

Tanri, A., Aprial, B., Mashud, M., Kristyandaru, A., Basuki, S., Samodra, Y. T. J., … Suryadi, D. (2023). Modification of interactive multimedia with the ARA MODEL: study of development of football learning models in pandemic times. *Retos*, *50*, 1289–1298. https://doi.org/10.47197/retos.v50.100587

Wahjoedi, Adi, I. P. P., & Danardani, W. (2009). *Pembinaan Cabang Olahraga Unggulan Bali di Kota Denpasar Menghadapi Porprov IX Tahun 2009*. Jakarta: Asisten Deputi IPTEK Olahraga, Deputi Peningkatan Prestasi dan IPTEK Olahraga, Kemenpora R.I.

Wati, I. D. P., Kusnanik, N. W., Wahjuni, E. S., Samodra, Y. T. J., Mardiyyaningsih, A. N., Suryadi, D., … Siringo-ringo, T. G. (2023). The BMI, fat percentage and total cholesterol of athletes: what is their status? *Retos*, *51*, 712–718. https://doi.org/10.47197/retos.v51.100275

Wirawan. (2012). *Evaluasi Teori, Model, Standar, Aplikasi, Dan Profesi*. Jakarta: PT. Rajawali Grafindo Persada.

Younesi, S., Rabbani, A., Clemente, F. M., Silva, R., Sarmento, H., & Figueiredo, A. J. (2021). Relationships Between Aerobic Performance, Hemoglobin Levels, and Training Load During Small-Sided Games: A Study in Professional Soccer Players. *Frontiers in Physiology*, *12*, 649870. https://doi.org/10.3389/fphys.2021.649870