



Physical Training Profile and Training Patterns of Paragliding Athletes

Carolyn Purba¹, Aam Ali Rahman*², Ayi Suherman³

^{1,2,3} Physical Education of Elementary Teacher Program, Universitas Pendidikan Indonesia, Bandung, Indonesia

Article Info

Article History :

Received : February 2024

Revised : March 2024

Accepted : March 2024

Keywords:

Paragliding,
Physical training,
Training pattern,

Abstract

This study aims to determine the ideal physical training program and optimal training patterns for paragliding athletes. The research method used is qualitative with a case study approach to describe and analyze the perceptions of athletes and coaches. In this case, the participants in this study were 1 female athlete aged 22 years and 1 male coach aged 61 years in the paragliding sport of DKI Jakarta. Questionnaires, interviews, and documentation were used to collect data. The results of the athlete's questionnaire with the following indicators: 1) talent/seed guidance 83%, 2) coaching 67%, 3) physical, technical, tactical and psychological training program 75%, 4) nutrition intake 100%, 5) training cycle 50%, 6) facilities and infrastructure 100%, 7) Achievement 100%. Likewise, the results of the coach's questionnaire with the following indicators: 1) talent/seed guidance 100%, 2) coaching program 100%, 3) training cycle 75%, 4) management structure 80%, 5) facilities and infrastructure 50%, 6) Achievement 100%. This study shows that the ideal physical training pattern for paragliding athletes is one that is systematic, progressive, and tailored to the needs of the athlete, the optimal training pattern to improve the performance of paragliding athletes is to follow a structured and consistent training pattern.



*Corresponding email : alirahman@upi.edu

ISSN 2685-6514 (Online)
ISSN 2477-331X (Print)

INTRODUCTION

As we know, paragliding, also called paragliding, is a type of extreme aerospace sport. This sport requires someone to use a parachute to glide from a height of hundreds of feet. Paragliders fly because the wind flows above and below the parachute, creating a difference in air pressure between the areas above and below the parachute. This is the reason why paragliders have lift when flying (Lorensia & Sudarti, 2022). The history of paragliding in Indonesia includes official recognition as a sport that is parallel to the Gantole sport and the change of the term from "mountain jumping" to "paragliding". Many people enjoy this sport, especially children. It can burn calories, increase adrenaline, relieve stress, and boost self-confidence. One type of extreme sport is paragliding (Nur Amin et al., 2021).

Paragliding is a type of free flight sport in which the aircraft or parachute, which can be flown and lifted by the pilot's body, takes off and lands using the pilot's feet. The Indonesian Aero Sport Federation (FASI) is an aerospace sports organization established by the Indonesian government on January 17, 1972 with the aim of fostering, developing, coordinating, and carrying out aerospace sports activities for all Indonesian citizens, as well as all aerospace athletes throughout the territory of the Republic of Indonesia, regardless of their nationality. Currently, PB FASI is responsible for seven aerospace sports (Aeromodelling, skydiving, paragliding, hang gliding (gantole), microlight, self-powered aircraft, and motorized skydiving). One type of aerospace sport, paragliding has several flight classes, including standard, achievement, and competition flights (Lukman & Sepdanius, 2020). When planning a training and physical

development program for a paragliding athlete, there are several important things to consider. A study shows that paragliding athletes can complete the match from start to finish and reduce fatigue after flying with a good and proper physical condition training program. In addition, paragliding athletes must be in good physical condition, be able to demonstrate perfect takeoff and landing techniques, and must be mentally prepared. In addition, research has been conducted on paragliding athletes on various physical condition development techniques, including Contrast Training Technique. Adjustment of the training program is also important to maintain athlete performance. Therefore, to achieve optimal results, these elements must be considered during the physical development and training process of paragliding athletes (Rustiawan et al., 2023).

Paragliding is an extreme sport that offers a combination of high adrenaline and extensive challenges in flying through the air using a paraglider. Pilots glide from the top of hills or mountains, exploring altitude at high speed and unhindered freedom. They face changing weather conditions and perform daring maneuvers, including spiraling, wingovers, and acro-maneuvers that require exceptional technical skill and courage. In this sport, each flight is a personal adventure that requires physical endurance, mental acuity, and the courage to explore the limits of human ability amidst challenging natural elements (Zhou et al., 2020). Based on the above explanation, the problem taken in this research is to find out the training patterns and physical condition of paragliding athletes because as explained above, coaching is a very important thing in an association or a sports club, one of which is paragliding (Indarti et al., 2019). This research focuses on the training

patterns and physical condition of paragliding athletes. This discussion is interesting because it discusses what kind of training patterns are used and how to train the physical condition of paragliding athletes because physical condition is very much needed in paragliding (Çalık et al., 2021).

In previous research conducted by Çalık et al (2021), it was found that in terms of psychology, paragliding athletes must be good at controlling tension when at high altitudes so that they can fly the paraglider well. Another study states that the training patterns used must be in accordance with the needs of improving athlete performance and are very diverse, and facilities and infrastructure are very important in the paragliding training process (Lukman & Sepdanius, 2020). Then, the research conducted by Wiranda (2023) based on the results of its accuracy and precision, this electronic pad device is suitable for measuring the accuracy of landing scores and the identity code of paragliding athletes. Based on several previous studies, this research wants to explain more clearly in terms of physical training and training patterns of paragliding athletes, how to design a training program that is tailored to the needs and abilities of individual athletes and structured physical training. Proper and planned physical training is the key to achieving the best performance for paragliding athletes. A varied and progressive training program that focuses on strength, endurance, agility, balance, flexibility, and speed can help athletes achieve their goals. So the research questions are as follows:

1. How is the ideal physical training program for paragliding athletes?
2. What is the optimal training pattern to improve the performance of paragliding athletes?

METHODS

This research uses a qualitative method combined with a case study approach. It aims to describe and analyze the perceptions of athletes and coaches regarding the physical training profile and training patterns of paragliding athletes (Creswell, JW, & Clark, 2017). In addition, a case study is the most appropriate approach to investigate and determine an event or problem that occurs by collecting various kinds of information, which is processed to obtain a solution to complete a period as a result (Thomas, 2021). By understanding the physical training profile and training patterns of athletes, a more effective and efficient training program can be developed to improve the performance of paragliding athletes. Therefore, the researcher aims to describe the physical training profile and training patterns of paragliding athletes.

Participants

The participants in this study were paragliding coaches and athletes from DKI Jakarta. They were strategically selected because athletes and coaches from DKI Jakarta are participants who have characteristics relevant to the researcher's focus. Namely athletes who have experience, knowledge and achievements. In addition, the character of the athletes and also the coach are currently preparing for PON 2024. Therefore, it will be seen how the physical training and training patterns of paragliding athletes. The number of participants was 2 people consisting of 1 female athlete from DKI Jakarta aged 22 years who is: 1st winner of Paragliding trip of Indonesia special event 2018, 2nd winner of Paragliding trip of Indonesia series 2 2018, 3rd winner of Paragliding trip of Indonesia series 3 2018, 1st and 2nd winner of National Championship

Cross Country Trenggalek 2022, 2nd winner of Celebes Friendly Open 2021, 1st and 3rd winner of PON 2021, 2nd winner of Pra PON 2019, 3rd winner of Pra PON 2023, 3rd winner of Indonesia Paragliding Super League 2022, 1st winner of Bupati cup Majalengka 2023 and 1 coach aged 61 who was formerly a paragliding athlete then became a coach and coach of the KONI DKI Jakarta paragliding organization from the 90s to the present and has a paragliding coaching license certificate.

Materials and Apparatus

Data was collected through interviews, questionnaires, and documentation. Interviews were conducted using Zoom meetings. The meetings were recorded, and the audio recordings were transcribed using Google Speech to Text. The transcripts were then analyzed using NVIVO software. Questionnaires were also used to collect data. The questionnaires were administered using Microsoft Excel, and the results were analyzed using the Guttman scale.

Procedures

This study used questionnaires and interviews to collect data. The questionnaires were sent out using Google Forms. A questionnaire is a research instrument that contains a series of written questions that are asked of respondents to obtain information about a particular topic or variable. Questionnaires are used to obtain a concrete picture of the physical training profile and training patterns of paragliding athletes. The format of the questionnaire on the physical training profile and training patterns of athletes based on the Guttman scale was adapted from (Arisman & Okilanda, 2020). The data generated was then collected to determine the physical training and

training patterns of athletes, categorizing it in the form of respondents being asked to choose one of the available answers. The Guttman scale provides two answer choices, "YES" or "NO", for measurement.

Data collection using interviews is a technique for researchers and informants to collect data: a technique that is carried out face-to-face and through direct questions and answers (Bains et al., 2021). Interviews are conducted via Zoom meetings so that recording and transcription will be easier to do. The next consideration depends on individual accessibility, cost, and time available (Creswell, JW, & Clark, 2017).

Design or Data Analysis

The data analysis techniques used in this study are as follows: First, the questionnaire data was analyzed using the Guttman scale, with the highest score being 1 and the lowest being 0 (Mulyana, 2023). Second, the interview data was analyzed by describing the results of the research interview, then coding the data, and then analyzing it using NVIVO by creating codes: training intensity, psychology, training time cycle, money, idols, facilities and infrastructure, achievement, parents, tactics, strength and vitamins, and then obtaining results. The two data above will be synthesized to find conclusions to answer the research questions.

RESULT

The results of the data collected from the questionnaire can be seen in Table 1.

Table 1. Athlete Questionnaire Results

Res po nd en t	Indicator	Questionn aire number	Ye s	No	Resu lt
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	Talent/Seedling Guidance	1,2,3,4,5,6	5	1	83%
	Coaching	7,8,9,10,11,12	4	2	67%
	Training Program				
	-Physical				
Athlet	-Technical	13,14,15,16	3	1	75%
	-Tactical				
	-Psychological				
	Nutritional Intake	17,18	2		100%
	Training Cycle	19,20	1	1	50%
	Facilities and Infrastructure	21,22,23	3	0	100%
	Achievements	24,25	2	0	100%
	Number	25	20	5	
	Talent/Seedling Guidance	1,2,3,4	4	0	100%
	Coaching Program	5,6,7,8	3	1	100%
Coach	Training Cycle	9,10,11,12,13,14,15,16	6	2	75%
	Management Structure	17,18,19,20,21	4	1	80%
	Facilities and Infrastructure	22,23	1	1	50%
	Achievements	24,25	2	0	100%
	Number	25	20	5	

Based on the table of questionnaire results filled out by the athletes, talent/seedling guidance is the main thing for athletes, namely 83%. Athletes have a high interest in paragliding because of the support of their parents. Athletes have also been training since an early age, so athletes make paragliding their main sport with the aim of becoming an athlete. Dividing time well is one way for athletes not to interfere with the learning process at school. Armed with experience and also training, athletes have made KONI DKI Jakarta proud with their extraordinary achievements. On the other hand, the coach also makes this the most important thing, namely 100%. KONI DKI Jakarta carries out selections according to criteria and needs, the coach is also assisted by a team in looking for paragliding athletes

and each team that is formed must have the same talent and expertise because special criteria are needed when searching for talent.

The coaching process carried out by KONI DKI Jakarta and the coaching provided by the coach are in accordance with the procedures for the paragliding sport branch so that athletes can achieve and support the athlete's economy. The coach plays a major role in the process of achieving achievement by arranging planned training times which also has a big influence so that athletes never experience (physical) injuries when training. Likewise, the coaching program provided by the coach is quite good because of the questionnaire questions given to the coach. The coaching program provided by it is 100%. KONI DKI Jakarta has not yet met the goals it wants to achieve, but all athletes are enthusiastic and consistent in following the training program provided by the coach. Special sanctions are also given by the coach for athletes when they are not disciplined during training.

The physical, technical, tactical, and psychological training program received by athletes is very well-planned and structured, as can be seen from the results, namely 75%. Providing tactics that are easy for athletes to understand allows athletes to use these tactics when competing. Athletes experience improvement during the training process and do not feel bored when carrying out the training program provided by the coach. The training cycle provided by the coach is already structured based on the results of the questionnaire, namely 75%. The coach designs different training programs for each athlete, but these training programs are not in sync with the athlete's achievement needs and do not reach the training unit. KONI DKI Jakarta also prepares an annual training program, and the coach also prepares a monthly

program when the athletes want to compete. After completing the training process, an evaluation is always carried out and the training program that has been designed has been implemented.

The nutritional intake consumed is sufficient for the athlete's body needs because the results obtained from the questionnaire are 100%. Athletes have consumed food and vitamins that can increase the body's resistance which has an effect on achievement. Likewise, the management structure is 80% well formed. The paragliding coach is a paragliding athlete and has achieved achievements. The coach is not involved in the election of the general chairman and daily chairman. Monitoring is always carried out by the management during the training process because the management conditions affect the athlete's achievement. In addition, based on the questionnaire data, 50% of the training cycles received by athletes are dynamic. The training program provided by KONI DKI Jakarta is not arranged in an annual cycle, but there is a monthly program that is prepared during the competition preparation.

On the other hand, the facilities and infrastructure received by athletes are quite well met, namely 100%. The facilities and infrastructure provided by KONI DKI Jakarta have been met quite well, but there needs to be additional support for the paragliding sport branch. Athletes also get personal facilities in the coaching process. A different opinion is given by the coach regarding the existing facilities and infrastructure which are not yet sufficient, namely 50%. In the coaching process, facilities and infrastructure at KONI DKI Jakarta are still lacking and there is a need for supporting facilities and infrastructure. It is not surprising that the achievements of the athletes are very good, namely 100%. Participating in competitions or events

outside the training schedule provides learning experiences for athletes, and the central government also provides rewards when athletes win a competition. Likewise, the achievements of the coaches are also good because the results of the questionnaire are 100%. The paragliding coaches of KONI DKI Jakarta often attend paragliding coaching training and have coaching license certificates. In addition, the results of the interviews with both of them are shown in the picture below.

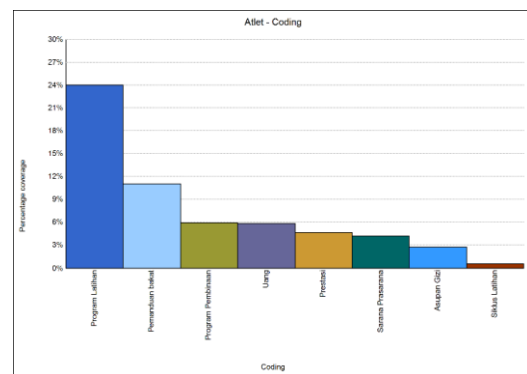


Fig 1. Athlete Interview Results

Based on the results of interviews with athletes, the training program is the most discussed topic by athletes, namely 23.99%, making it the most important thing for athletes. A structured training program can bring athletes to success in the field of sports, but for the training cycle, namely 0.58%, because it is influenced by environmental and weather factors which are often a concern during training. Likewise, with the guidance of athlete talent, namely 11.06%, where the family provides a comprehensive approach that considers each family member, the surrounding environment, and the individual. The development of young female athletes can only be successful and sustainable by understanding the needs and potential of athletes.

The coach has already provided a good training program for athletes, which can be seen from the results of the interview, namely 6.02%. This shows that the coaching procedures received by athletes are in accordance with the coaching standards for paragliding athletes and 5.90% are given financial assistance to meet the needs of athletes with funding received by athletes each month to ensure that they are used wisely and do not give excessive pressure so that from the answers of athletes there are 2.82% which discuss nutritional intake. It is not surprising that the achievements of athletes are very high with the results of the interview 4.67%. Enthusiastic, consistent and serious attitudes in training can forge athletes who are ready to compete and make them proud. KONI DKI Jakarta has also paid full attention to fulfilling the facilities and infrastructure of the paragliding sport branch with quite expensive equipment. KONI DKI Jakarta and the coach always try to provide facilities continuously to meet the needs of athletes.

the training cycle, namely 4.67, the coach designs the cycle according to the athlete's participation in competitions. On the other hand, the coach's coaching program is 8.90%, where the coaching provided by KONI has a sustainable impact in creating and fulfilling all the needs of the paragliding sport branch. Talent guidance is 8.02%, which is the beginning of the formation of coaches to become paragliding sport coaches. Likewise, the achievements achieved by the coach are 7.50%, even until now the coach is always active and wants to learn and get new knowledge so that he continues to follow license training to achieve the desired achievements. Given that the facilities and infrastructure for paragliding sports are very expensive, so 5.59% of coaches strive together with KONI DKI Jakarta to fulfill all the needs of athletes, therefore 5.90% of coaches discuss funding that supports all the needs of paragliding sports.

DISCUSSION

The following is an image of the results of NVIVO from interviews with athletes and coaches.

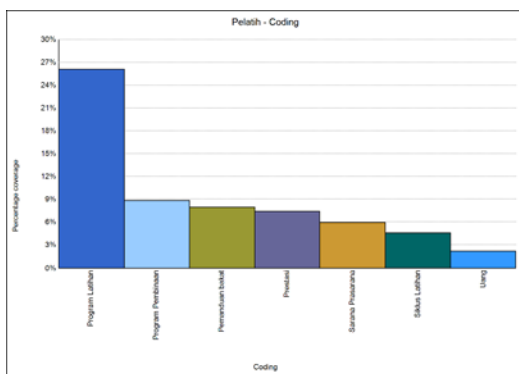


Fig 2. Coach Interview Results

Based on the table image above, the training program is the most important thing, namely 26.11%, because the coach designs a training program that is tailored to the needs of each individual athlete and considers all aspects that affect the training process. However, in

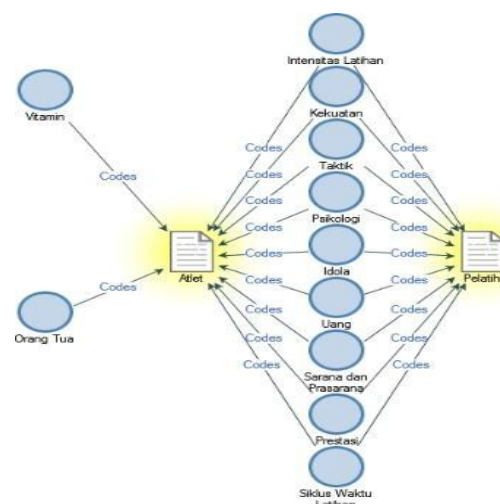


Fig 3. Analysis of Interview Data by NVIVO

Paragliding athletes require a specially designed physical training program to improve their physical abilities. The program's goals should be clear and measurable to help determine the appropriate type of exercise and monitor the athlete's progress (Bird et al., 2023). Using contrast training techniques to improve various aspects of a paragliding athlete's physical condition is a good choice. Team coaches, especially physical conditioning coaches, should be able to use contrast training methods while prioritizing program innovation to improve the athlete's physical condition, especially those needed during competition (Rustiawan et al., 2023). Based on the NVIVO image data results, the training intensity given by the coach to the athlete is 23.99%, which consists of structured physical training that still considers the athlete's needs. The most important thing for coaches and athletes is a well-designed training program that can achieve the team and athlete's goals to perform at their best (Gibson., 2024). The coach is also able to design techniques that improve the athlete's body strength, so that the athlete can train properly and correctly (Luczak et al., 2020). It is important to remember that the right tactics vary depending on the situation and conditions. Athletes and coaches must work together to create an effective strategy, as well as be able to balance training and recovery, and regularly check the athlete's physical and mental condition (Scantlebury et al., 2020). It is very important for an athlete to maximize recovery time because recovery is part of the training program (Ardiyanto & Sumartiningsih, 2023). Thus, a coach who can provide motivation and the right strategy will more easily achieve achievements (Gould et al., 2020). The training time cycle is well regulated so that athletes do not experience fatigue and injury, supported by supportive idols and parents and providing a conducive

environment for athletes to train and achieve the desired achievements according to the questionnaire data, which is 83%. Parents and closest people are the benchmark for a child's success, so the role of parents is very important to help achieve success in sports (Dessy & Soenyoto, 2021). Even an idol can be a trigger for enthusiasm in practicing, in addition to a good environment for athletes (Meng-Lewis et al., 2021).

Based on the results of the athlete interviews, the athlete talent identification indicator is 11.06%. This is in line with the above results, which show that talent identification in athletes is important to determine what talents they have (Lath et al., 2020). The results of the athlete questionnaire also show that the athlete talent identification indicator is 83%, which means that athlete talent identification is already in good condition. Good athlete talent identification can provide positive things for the club (Bergkamp et al., 2022). Hidden talents of athletes can be brought out and developed so that they can achieve maximum achievement when athlete talent identification is carried out properly (Larkin et al., 2022). Meanwhile, when viewed from the results of interviews with DKI Jakarta paragliding athlete coaches, the athlete talent identification indicator is 8.02%, which is in line with the results of the questionnaire on the athlete talent identification indicator of 100%. Based on the results above, DKI Jakarta paragliding athlete coaches have a clever way of guiding athlete talent. According to (Roberts et al., 2021), coaches are the ones who understand the most about guiding athlete talent. Athlete talent identification should not be done carelessly in order to produce quality athletes who can achieve good achievements (Al Ahmed & Hassan, 2023). Thus, the optimal training pattern to improve the performance of paragliding athletes is to follow a structured and

consistent training pattern. Paragliding athletes can improve their performance and achieve maximum achievement. A good training pattern can make athletes more serious and have targets for the future (Raya-González et al., 2020). An athlete must have the ability to focus on the game or competition they are facing (Nodira & Kizi, 2022). High focus is essential during training, competition preparation, and competition (Bonk & Tamminen, 2021). Concentration is the key to success in sports (Komaini & Elvian, 2020). Thus, the ideal training pattern for each athlete is unique and must be tailored to their needs, conditions, and goals. The cooperation between KONI DKI Jakarta and coaches in forming training patterns for athletes when they want to face a match is adjusted to the goals that want to be achieved, according to the results of the questionnaire given to the coach, which is 100%. With the enthusiasm of the athletes and consistency in following the structured training pattern, it can be ensured that the athletes do not feel burdened by the training pattern that has been designed. In fact, sometimes athletes give sanctions to athletes who are not consistent in following training.

CONCLUSION

Research on the profile of physical development and training patterns of paragliding athletes is important research to be conducted. This research is expected to provide benefits for various parties and ultimately, improve the performance of paragliding athletes in Indonesia. The ideal physical training pattern for paragliding athletes is one that is systematic, progressive, and tailored to the individual athlete's needs. Following a structured and consistent training pattern is the optimal way to improve the performance of paragliding athletes. This allows athletes to improve

their performance and achieve maximum results.

ACKNOWLEDGEMENT

The researcher would like to express his gratitude to the supervising lecturer of PGSD Physical Education at Universitas Pendidikan Indonesia who has guided him until this research is completed, as well as to the participants who were willing to take the time to provide information.

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