
Psychological Training Programs in Training Periodization: An Effective Strategy to Improve Athlete Performance

Komarudin Komarudin^{1*}, Gerald Novian², Alen Rismayadi³, Mochamad Yamin Saputra⁴,
Mona Fiametta Febrianty⁵, Hafizha Alifa Refitri⁶

^{1*,4} Study Program of Sport Coaching Education, Faculty of Sport and Health Education, Universitas Pendidikan Indonesia, Bandung, West Java, Indonesia

^{2,3,5,6} Study Study Program of Sport Physical Coaching, Faculty of Sport and Health Education, Universitas Pendidikan Indonesia, Bandung, West Java, Indonesia

*Corresponding Author. E-mail: komarudin_pko@upi.edu

Abstract: The limited application of psychological aspects in sports training programs is one of the factors that causes athlete performance to be less than optimal, because training has so far focused more on physical, technical, and tactical aspects. This condition indicates a gap between the importance of psychological aspects and its application in the training process, particularly in periodization. This study aims to effect of a psychological training program integrated into training periodization on improving athlete performance. This study used an experimental method with a one-group pretest-posttest design involving 30 athletes and coaches from 10 sports branches using a purposive sampling technique. The research instrument was a closed questionnaire with 20 items administered before and after the treatment. The results showed an increase in the average score from 11.47 to 18.60 and an increase in the percentage of participants from 57% to 93%. The paired sample t-test showed a significance value of .001 ($p < .05$), indicating a significant effect of the treatment. Thus, a psychological training program in the periodization of training can improve the knowledge and abilities of athletes and coaches, thus becoming an alternative to support improved athlete performance.

Keywords: Athlete Performance, Psychological Training Program, Training Periodization

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INTRODUCTION

The Universitas Pendidikan Indonesia (UPI) has a platform for developing student potential through Student Activity Units, including in the field of competitive sports. UPI is supported by many student athletes who actively participate in competitions at regional and international levels. However, observations indicate that athlete performance is still suboptimal, especially in achieving success at higher levels of competition (Barth & Güllich, 2021; Fronso et al., 2017). This is due to the training process not being in accordance with established training principles. The training principles applied are still limited to physiological and pedagogical principles, neglecting the application of psychological principles, which should receive equal attention (Bompa & Buzzichelli,

2019; Harsono, 2017; Sidik, 2019). This situation indicates problems with the training process, which is not yet running optimally. Therefore, an evaluation of the training system is necessary to ensure it supports optimal athlete performance.

However, many SMEs still haven't implemented training principles comprehensively, especially during the training process. Often, the training process focuses more on physical, technical, and tactical aspects, while psychological aspects receive less attention. However, psychological aspects are crucial, as they are one of the factors that contribute to improving athlete performance (Chang et al., 2020; R. S. Weinberg & Gould, 2023). Psychological aspects also play a crucial role, especially in competitive situations that demand optimal mental readiness. Therefore, psychological training should be an integral part of an athlete's training program.

Based on the study conducted Vysochina & Vorobiova, (2019) revealed that the contribution of psychological aspects increases significantly during competition compared to training. This also aligns with previous studies that revealed that mental readiness is a determining factor in athletes' success in achieving peak performance (Bahauddin et al., 2026; Pramesti et al., 2022). In addition, periodization of training as a basic principle in sports coaching allows for the management of training programs in a systematic and structured manner (Bompa & Buzzichelli, 2019; Otte et al., 2019). Thus, the application of psychological training in periodization becomes a logical approach to increasing the effectiveness of training.

However, the application of psychological training in training periodization is still suboptimal, particularly in Indonesia. Previous studies have focused more on partial psychological interventions, such as imagery, self-talk, and mental skills training, without integrating them into training periodization (Blumenstein & Orbach, 2020; Ely et al., 2023; Hagan Jnr. et al., 2017). Furthermore, limited trainer knowledge and the lack of a systematic program model hinder its implementation. This situation indicates a gap between theory and practice in the application of psychological training. Therefore, the development of a program capable of bridging this gap is necessary.

Based on the existing problems and gaps, this research offers a novelty in the form of developing a psychological training program integrated into training periodization. This program is systematically designed according to training stages so that it can be practically applied by coaches. Unlike previous research, this study does not focus solely on a single psychological technique but rather integrates various psychological components within a single periodization framework. Thus, the developed program is expected to improve athlete performance more comprehensively. This research is also expected to provide theoretical and practical contributions to the development of psychology-based sports coaching science.

METHODS

This study used an experimental method with a one-group pretest-posttest design to determine the effect of a psychological training program integrated into training periodization on improving athlete performance. The subjects in this study were 50 athletes and coaches from various sports selected using purposive sampling techniques. The criteria for this study were intensive training and experience of achievement at least at the district/city level. The research instrument was a closed questionnaire consisting of 20 items that measured mastery of material related to psychological training periodization, which was administered before (pretest) and after (posttest) the treatment. The research procedure included a preparation stage, a three-day intensive training

implementation that included the delivery of theoretical material and a workshop on developing a psychological training program, and a follow-up stage in the form of program implementation and monitoring for two weeks. Data analysis was performed using SPSS version 29 software through paired sample t-tests to identify significant differences between the pretest and posttest, as well as descriptive percentage analysis to describe the level of improvement in subject understanding.

RESULT

In this section, the author presents the results in the form of tables and figures based on the instruments given to the subjects. Table 1 presents a statistical description

Table 1. Statistical Description

Test	Average	Std. Dev	Min.	Max.	Sum
Pre-	11,47	4,058	5	18	344
Post-	18,6	1,404	15	20	558

*n = 50 (25 athletes, 25 coaches)

Based on Table 1, it can be seen that before being given treatment, the subject obtained an average score of 11.47 with a standard deviation of 4,058, the lowest score of 5, the highest score of 18, and a total score of 344. Meanwhile, after being given treatment, the subject obtained an average score of 18.6 with a standard deviation of 1,404, the lowest score of 15, the highest score of 20, and a total score of 558. Furthermore, the author presents error bars, which can be seen in Figure 1.

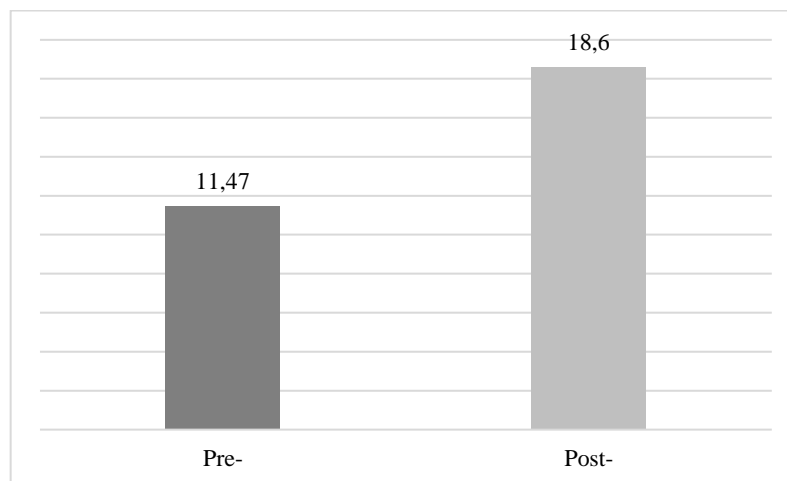


Figure 1. Error Limits of Pre- and Post-Test Results

Figure 1 displays the error bars for the pretest and posttest results, showing the mean and standard deviation. Figure 1 shows that the posttest had a higher mean than the pretest. Furthermore, the error bars for the pretest were longer than those for the posttest, indicating that the scores obtained in the pretest varied widely and had significant gaps. This indicates that the subjects' knowledge levels were still very diverse before the treatment. Furthermore, the authors present the results of the hypothesis test, which can be seen in Table 2.

Table 2. Hypothesis Testing

Pair	Sig.	Hypothesis	Information
Pre and Post-Test	.001	H ₀ rejected	Significant

Previously, the author conducted assumption tests in the form of normality and homogeneity tests, both of which had values $> .05$. Therefore, the research data can be declared normally distributed and homogeneous, so that the t-test using a paired sample t-test can be performed. Based on Table 2, the obtained Sig. value is $.001 < .05$, so H₀ is rejected. Therefore, it can be stated that the given treatment has a significant effect. Next, the author presents the percentage of results, which can be seen in Figure 2.

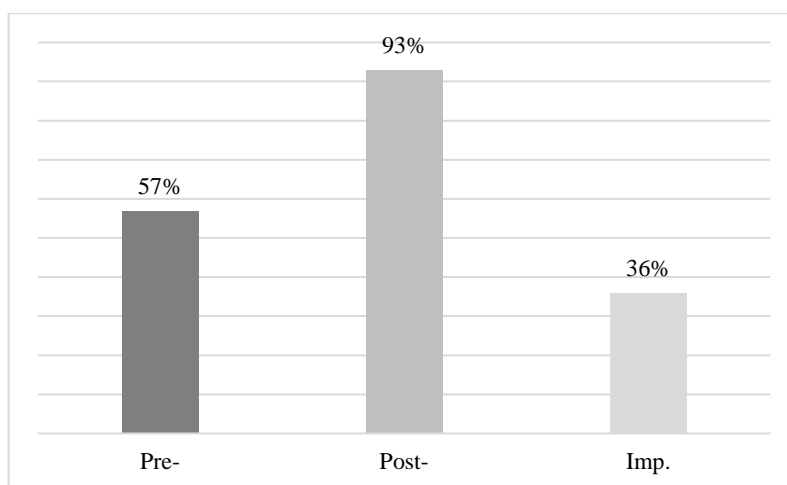


Figure 2. Percentage of Pre-, Post-, and Improvement Results of Pre- and Post-Test Results

Based on Figure 2, it can be seen that the subjects' level of knowledge regarding the periodization of psychological training programs before treatment (initial test) was 57%, while after treatment, the subjects' level of knowledge increased by 36% to 93%. This is clear evidence that the treatment provided had a positive effect on the subjects' level of knowledge regarding the periodization of psychological training programs.

DISCUSSION

The results of the study showed a significant increase between pretest and posttest scores after the psychological training program integrated into the training periodization. This indicated that in addition to increased understanding, there was also an even distribution of knowledge among the subjects. This indicates that the intervention was not only generally effective but also able to reduce the gap in understanding levels between individuals. This finding concluding that the treatment had a significant effect. Thus, the developed program proved effective in improving athletes' and coaches' knowledge regarding psychological training periodization.

Based on this, it is important to plan a systematic and structured training program, especially in terms of periodization. This can have a positive impact on athletes, especially in achieving optimal peak performance (Hanafi & Prastyana, 2020; Lumba, 2026; Mappanyukki & Aksir, 2025). However, in practice, periodization has so far focused more on physical, technical and tactical aspects, while psychological aspects often receive less attention (Wiguna, 2023; Zubaida et al., 2024). In fact, the

psychological aspect has a very important role, especially in competitive situations that require optimal mental readiness (Komarudin et al., 2024). Therefore, the application of psychological training in periodization is a necessity that cannot be ignored. The results of this study indicate that when psychological aspects are systematically integrated, the subject's understanding and readiness can be significantly improved.

The improvement also indicates that previously, the subjects had limited knowledge and skills in understanding and developing psychological training programs. This aligns with empirical evidence showing that coaches and athletes tend to lack practical guidance on integrating psychological aspects into training programs (Nicholls, 2021; Purcell et al., 2022). After receiving intensive training and workshops, the subjects were able to grasp the concepts and begin to develop skills in developing psychological training programs (Bell et al., 2017). The decrease in posttest score variation also indicates that the learning process was effective and equitable. Therefore, the program was able to bridge the gap between theory and practice.

The results show that the treatment given had a strong impact in increasing the subject's knowledge. This confirms that a training approach that combines theoretical material delivery and hands-on practice (workshops) is an effective strategy for increasing understanding. Furthermore, the subjects' active involvement in the process of developing psychological training programs also contributed to improved learning outcomes. These findings support the concept of experiential learning, which emphasizes the importance of direct experience in the learning process (Pole & McGee, 2025). Therefore, the training method used in this study can be used as an alternative in developing the competencies of coaches and athletes.

Overall, the results of this study reinforce the importance of implementing integrated psychological skills training (PST) into each phase of training periodization (Lange-Smith et al., 2024). Various PST techniques, such as goal setting, imagery, relaxation, and concentration, have been shown to support improved athlete performance when applied systematically (Blumenstein & Orbach, 2012; R. Weinberg & Gould, 2019). This research also provides a new contribution by developing a psychological training program that is not partial, but rather integrated within the framework of training periodization (Blumenstein & Lidor, 2007; Blumenstein & Orbach, 2012; Mujika, Halson, Burke, & Balague, 2018). Thus, this approach can be a practical solution for coaches in comprehensively optimizing athlete performance. Therefore, integrating psychological aspects into training periodization needs to be a primary focus in modern sports coaching practice.

CONCLUSION

Based on the research results, it can be concluded that the developed program has been proven to improve understanding more evenly and systematically regarding psychological training planning. This finding confirms that integrating psychological aspects into training periodization is a crucial component in supporting optimal athlete performance. Therefore, a structured and integrated psychological training program is recommended for implementation in sports coaching practice to comprehensively improve the quality of athlete performance, starting from the athlete and coach's understanding of the importance of psychological training in training periodization to improve athlete performance.

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