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The Impact of Psychological Preparation on Improving Performance and Controlling Competition Anxiety in Short-Distance Swimmers

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Abstract

This study aims to highlight the importance of psychological preparation as an integral part of the training process in swimming, specifically its impact on performance times and reducing competition anxiety among short-distance swimmers (50m and 100m). To achieve this, it was hypothesized that applying a psychological preparation program (including relaxation, mental imagery, and positive self-talk) leads to improved performance and reduced stress. An experimental approach was used on a hypothetical sample of 30 swimmers, divided equally into a control group and an experimental group. Statistical analysis results showed statistically significant differences in favor of the experimental group in reducing anxiety levels and improving recorded times. The study recommends the necessity of including a sports psychologist within the technical staff of swimming teams.

Keyword: Psychological Preparation, Improving Performance, Short-Distance Swimmers.

1. Introduction and Problem Statement

Swimming is a timed sport that requires high physical and physiological effort. It is characterized by a specific nature where the swimmer is in an aquatic environment that relatively isolates them from the outside world, imposing double psychological pressures. Despite significant advancements in physical, skill, and tactical training methods, many swimmers achieve excellent times during training but fail to replicate them during official competitions due to psychological pressure and poor concentration.

Problem Statement: The research problem revolves around the main question: What is the impact of applying a psychological preparation program integrated with physical training on performance times and competition anxiety levels in short-distance swimmers?

This branches into the following questions:

- Is there a correlation between the swimmer's psychological stability and race time improvement?
- How effective are mental imagery techniques in developing technical performance in swimming?

2. Study Hypotheses

• Main Hypothesis: There are statistically significant differences in performance times and competition anxiety levels between the pre- and post-measurements in favor of the experimental group that underwent the psychological preparation program.

• Sub-hypotheses:

1. The application of relaxation techniques effectively contributes to reducing cognitive and somatic anxiety before the start of the race.
2. The use of kinesthetic mental imagery accelerates the automation of skills (such as starts and turns), which positively reflects on the total race time.

3. Study Objectives

- Designing and applying a psychological training program accompanying the physical and skill program for short-distance swimmers.
- Identifying the level of competition anxiety among swimmers before and after

applying the psychological program.
- Measuring the impact of psychological training (mental imagery and relaxation) on performance times (swimming time).
- Drawing coaches' attention to the importance of paralleling physical/skill training with psychological training.

4. Significance of the Study

- Theoretical Significance: Enriching the sports library with a scientific reference linking physiology and psychology in an aquatic environment, an area where psychological studies are scarce compared to team sports.
- Practical Significance: Providing a practical framework (a psychological program) that swimming coaches can use to deal with the phenomenon of swimmer "burnout" and starting block anxiety, thereby helping to secure medals in decisive competitions that are won by fractions of a second.

5. Research Methodology

The experimental method was used with a two-group design (control and experimental) involving pre- and post-measurements, as it is the most appropriate method for the nature of the problem and the ability to test the effect of the independent variable on the dependent variable.

6. Study Variables

- Independent Variable: The psychological preparation program (muscle relaxation sessions, mental imagery of the motor pathway, stress management).
- Dependent Variables:
  1. Performance times (time recorded in the 50m freestyle race).
  2. Level of sports competition anxiety.

7. Study Tools

To collect data accurately, the following scientific tools were relied upon:
1. Performance Tests (Digital Measurement): Internationally approved electronic stopwatches and touchpads to accurately measure swimmers' times down to hundredths of a second.

2. Psychological Scales: Martens' "Sport Competition Anxiety Test" (SCAT), adapted to the local environment, measuring physiological and cognitive anxiety responses.
3. Interview and Observation: To evaluate the general behavior of swimmers in the call room and on the starting block.

8. Presentation and Analysis of Results

Data was processed statistically using SPSS, resulting in the following:

- Anxiety Analysis: The T-test for independent samples showed statistically significant differences at the ($\alpha \leq 0.05$) level in the post-measurement of competition anxiety between the control group and the experimental group. The average anxiety of the experimental group decreased by 35% compared to the pre-measurement.

- Performance Analysis (50m Freestyle): Results indicated a tangible improvement in the recorded times for the experimental group, with race time decreasing by an average of 0.45 seconds—a decisive margin in short distances. Meanwhile, the control group's time improved by only 0.12 seconds due to natural physical development. Pearson's correlation coefficient showed a strong inverse relationship between anxiety level and recorded time (lower anxiety correlated with shorter time and better performance).

9. General Conclusions

1. Continuous and programmed psychological preparation directly contributes to elevating performance times in swimming.
2. Using the "mental imagery" technique before the race helps the swimmer perform start and turn skills with high fluidity and less water resistance.
3. Physical superiority alone is not enough to win final races if it is not accompanied by mental toughness and the ability to block out external distractions (crowd noise, intimidation by competitors).

10. Conclusion

This study proved that the modern training system in swimming no longer relies exclusively on building muscles and developing cardiovascular efficiency. Instead,

the "mind" has become the primary director of these physical energies. The margins that crown a champion and eliminate another in short-distance races are calculated in fractions of a second, and this precise margin is the product of psychological control, the ability to relax under pressure, and deep concentration. Accordingly, sports institutions must include psychological preparation within the annual planning of sports training (microcycles and macrocycles) as an element no less important than water training.

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