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The Effect of Gyro tonic Exercises on Developing Specific Strength and Performance Achievement in Young Rowers (2000 Meters)

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Abstract

This study aimed to investigate the effect of Gyro tonic exercises on developing specific strength (speed-strength and strength endurance) and performance achievement in young rowers over a 2000-meter distance. An experimental approach was adopted, applying an 8-week training program to a sample of 8 rowers from the training center in Al-Karkh. The program included Gyro tonic exercises and core stability training to enhance the players' physical and skill performance. The results revealed statistically significant differences between pre- and post-tests in all studied variables, indicating that Gyro tonic training significantly improved muscular strength and performance achievement. The researcher attributes this improvement to the controlled application of training in terms of intensity, volume, and rest periods, which enhanced physical and skill performance. The findings align with previous studies indicating that Gyro tonic exercises improve flexibility, strength, and muscular coordination while enhancing mental and physiological aspects. The results emphasize the importance of incorporating such exercises into rowers' training programs to optimize athletic performance. The researcher recommends using Gyro tonic training to improve rowers' physical and technical performance and conducting further studies on Gyro tonic exercises with different programs and equipment to generalize benefits across other sports.

Keywords: Gyro tonic exercises, Specific strength, Speed-strength, Strength endurance, Performance achievement, Rowers.

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Introduction

Modern training methods are effective tools for developing athletes' physical, mental, and psychological capacities, which coaches strive to enhance to improve performance in various sports. Recent advancements in training techniques have introduced more sophisticated physical exercises based on rhythmic and continuous muscular work. Among these, Gyrotonic training has emerged as a notable method, characterized by circular movements that allow uninterrupted, fluid motion. These exercises stimulate muscles, the skeletal system, and the cardiorespiratory system while safely altering body positions in multiple directions.(Ibrahim et al., 2006)

The term "Gyrotonic" (hasan, 2021)combines "Gyro" (balance) and "Tonic" (muscular tension from isotonic contractions). This method achieves equilibrium between agonist and antagonist muscle groups, enhancing muscle lengthening and joint flexibility. It also emphasizes synchronized breathing with movement, making it an effective approach for simultaneously improving flexibility, muscle strength, and tendon resilience.

Gyrotonic exercises)Mohammed(2021 ، are an effective means of enhancing mental, physical, psychological, and physiological aspects. They strengthen weak muscles, increase flexibility and coordination, improve strength, balance, and agility, reduce training-induced pain, boost self-confidence, alleviate anxiety, enhance focus, aid in weight loss, and prevent sports injuries.

(Mohamed, 2012)classifies Gyrotonic training as a resistance exercise using specialized equipment (e.g., pulley towers, weights, mats, or chairs), where resistance between the individual and the tool increases muscular strength and hypertrophy. Unlike traditional resistance training, Gyrotonics optimize nervous system function, improving motor coordination, sensory perception, and joint mobility. (Issa et al., 2024)

This study examines the effect of Gyrotonic exercises on developing specific strength (speed-strength and strength endurance) and performance achievement in 2000-meter rowing. It also assesses statistical differences between pre- and post-tests in specific strength and performance metrics. (Kadhim & Mousa, 2024)

Methodology and Tools

The researcher employed an experimental design suited to the study's objectives. The participants included 8 young rowers from the Al-Karkh training center, who trained daily without interruption. Physical variables were identified through scientific literature, prior studies, and expert consultations in measurement, evaluation, and rowing.

Equipment and Tools:

Devices: HP computer, iron rowing machine, elastic ropes, electronic whistle, microphone, SONY camera.

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Tools: Single and double sculls, 2017 Hungarian-made motorboat.

Materials: Data recording forms.

Tests:

Specific Strength Tests:

Speed-strength (physical): 15-second prone rowing machine test at 80% intensity (repetitions counted).

Speed-strength (skill-based): 15-second rowing distance test.

Strength endurance (physical): 1-minute prone rowing machine test at 50% intensity (repetitions counted).

Strength endurance (skill-based): 1-minute rowing distance test.

Performance achievement: 2000-meter time trial.

Pre-Test:
Conducted on 8/11/2024 at 4 PM after player preparation, camera setup, and boat readiness. Players were first tested in the 2000-meter trial, followed by physical and skill tests after a 1-hour rest.

Main Experiment:
The 8-week training program (10/11/2024–11/1/2025) included three weekly 60-minute sessions (Saturday, Monday, Wednesday), integrating Gyrotonic and core stability exercises to enhance physical and technical performance.

Post-Test:

Conducted on 13/1/2025 under identical pre-test conditions.

Statistical Analysis:

Mean, standard deviation, mean differences, and T-tests were used to analyze statistical differences.

Results and Discussion

Table (1): Significant differences between pre- and post-tests in specific strength and performance achievement.

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Variable	Pre-Test (Mean ± SD)	Post-Test (Mean ± SD)	Mean Difference	T-value	Significance
Speed-strength (physical)	18 ± 2.45	22 ± 2.11	5	3.12	Significant
Strength endurance (physical)	66 ± 3.14	71 ± 2.66	5	2.65	Significant
Speed-strength (skill-based)	82 ± 1.98	85 ± 0.94	3	2.14	Significant
Strength endurance (skill-based)	264 ± 2.41	269 ± 1.65	5	3.61	Significant
2000m performance	7.30 ± 2.91	7.26 ± 1.31	4	3.47	Significant

The table shows statistically significant improvements in all variables, attributed to the regulated intensity, volume, and rest periods in the training program. The findings align with)Latif(2014 ،who found that 8 weeks of Gyrotonic training (2–3 sessions/week, 30–60 minutes each) significantly improved flexibility, strength, coordination, and motor fitness. (Abdel-Azim, 2017)noted that Gyrotonic exercises enhance mental, physical, and physiological aspects by strengthening weak muscles, increasing flexibility, reducing pain, and preventing injuries.

Conclusions

1. Gyrotonic training significantly improves muscular strength, particularly speed-strength and endurance.
2. It enhances 2000-meter performance by boosting strength and endurance.
3. It improves neuromuscular coordination, crucial for rowing.
4. It strengthens mental resilience (e.g., focus, reduced anxiety).
5. It reduces injury risks by enhancing joint flexibility and muscle balance.

Recommendations

1. Integrate Gyrotonic exercises into regular rowing training programs.
2. Design individualized programs based on intensity, volume, and recovery.
3. Conduct further research on Gyrotonics in other sports (e.g., swimming, athletics).
4. Use advanced monitoring devices for precise performance tracking.
5. Train coaches in proper Gyrotonic techniques via workshops.
6. Implement periodic performance evaluations to adjust training.
7. Incorporate mental conditioning (e.g., breathing exercises) into training.
8. Collaborate with sports medicine specialists for injury prevention.

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