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Impact Of Turbulence Training On Physical Fitness Variables Among College Women Hockey Players

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Abstract:

This research aimed to investigate the effects of turbulence training on the physical fitness attributes of college women hockey players. The study involved 30 female hockey players aged between 17 and 23 from the Sivagangai region of Tamil Nadu, India. The participants were divided into two groups: group H1 underwent turbulence training while group H2 served as the control group, with each group comprising 15 players. The training program spanned over 8 weeks, during which the participants were evaluated before and after the training period to assess their physical performance using statistical analysis techniques. The study measured agility using the T-test and muscular endurance using the push-up test. Statistical analysis using the IBM SPSS 26 software indicated a significant improvement in these selected variables post-turbulence training. The results demonstrated a notable enhancement in the physical fitness attributes of college women hockey players following the turbulence training program.

Keywords: Turbulence Training, Agility, Muscular Endurance, ANOVA

Introduction

In today's modern civilization, the popularity and organization of sports activities and competitions have thrived due to the recognition of the importance of physical fitness. From basic motor movements like running, jumping, and throwing to more specialized athletic movements required in sports like hockey, physical activities are crucial in promoting muscular strength, agility, speed, and coordination **Astorino, 2004**.

Hockey, a sport that demands peak physical performance, requires specialized training to meet its rigorous demands. With similarities to soccer in terms of physiological aspects, hockey players need power for acceleration, speed, and quick changes in direction **Morland, 2013**. Strength training is essential for players to shoot powerfully with precision and pass over varying distances **King, 2001**.

Enter turbulence training, a revolutionary workout program developed by fitness expert Craig Ballantyne. This program has gained popularity for its effectiveness in achieving significant fat loss and muscle growth in a time-efficient manner **Laforgia, 2007**. By combining high-intensity interval training with resistance exercises, turbulence training offers a comprehensive and dynamic workout regimen that produces noticeable results in a short period **Yadav, 2016**.

High-intensity interval training (HIIT) is known for its ability to burn calories and fat more effectively than traditional cardio exercises, making it a perfect fit for women hockey players looking to enhance their performance **Antara, 2023**. Turbulence training focuses on activating and engaging various muscle groups through compound exercises that target multiple joints and muscle groups, ensuring comprehensive muscle activation.

By utilizing different forms of muscle contraction during resistance exercises, turbulence training promotes muscle growth, strength development, and overall fitness improvements **Brezze, 2023**. The emphasis on progressive overload ensures continuous improvements in strength, endurance, and body composition over time. Whether aiming for fat loss, muscle gain, or overall physical conditioning, turbulence training provides women hockey players with the tools they need to achieve their goals **Manoranjith, 2021**.

Methodology

The study conducted a randomized selection of 30 college women hockey players, aged between 17 and 23 years, from the Sivagangai region of Tamil Nadu, India. These players were divided into two groups, with Group A undergoing turbulence training and Group B serving as the control group, with each group consisting of 15 subjects. The selection criteria were based on a review of existing scientific literature, consultations with experts, equipment availability, and the relevance of variables to the study. The participants were instructed to maintain their regular training routines throughout the study. The turbulence training group followed an 8-week training protocol, with agility measured by the T-test and muscle endurance measured by the push-up test. Performance data was collected from the subjects before and after the 8-week training program.

Table 1 Training Protocol

1ST WEEK TO 4TH-WEEK TURBULENCE TRAINING REGIMES				
Exercises	Reputations	Set	Rest Between Reputations	Rest Between Set
Jump rope	20 sec	2	45 sec	5mts
Jump and jack	20 sec	2	45 sec	
kettlebell swing	20 sec	2	45 sec	
Spiderman push-ups	20 sec	2	45 sec	
Side lunges	20 sec	2	45 sec	
Prisoner squad	20 sec	2	45 sec	
Mountain climber	20 sec	2	45 sec	
Abdominal crunches	20 sec	2	45 sec	
5ST WEEK TO 8TH-WEEK TURBULENCE TRAINING REGIMES				
Exercises	Reputations	Set	Rest Between Reputations	Rest Between Set
Military press	30 sec	3	1 mts	5mts
Jump and Jack	30 sec	3	1 mts	
Kettlebell Swing	30 sec	3	1 mts	
Spiderman Push-Ups	30 sec	3	1 mts	
Burpees	30 sec	3	1 mts	
Prisoner Squad	30 sec	3	1 mts	
Depth Jump	30 sec	3	1 mts	
Abdominal Crunches	30 sec	3	1 mts	

The difference between the initial and final means of the reference variables was considered the effect of treatment on subjects. After the collection of the data was analyzed by IBM (SPSS Version 26.0) and the 2 groups were analyzed by the statistical technique of ANOVA the confidence level was maintained at 0.05 level.

Result and Conclusion

Table 2 ANOVA OF AGILITY AND MUSCULAR ENDURANCE OF WOMEN HOCKEY PLAYERS

FACILITATION OF AGILITY AND MUSCULAR ENDURANCE OF WOMEN HOCKEY PLAYERS						
Agility						
Test	H1	H2	SOS	DF	MEAN	F RATIO
Pre-test	14.06	14.01	0.021	1	0.021	0.015
			39.53	28	1.37	
Post-test	12.98	14.05	8.52	2	8.52	8.16*
			29.21	28	1.04	
Muscular Endurance						
Test	H1	H2	SOS	DF	MEAN	F RATIO
Pre-test	13.66	13.40	0.53	1	0.53	0.29
			50.93	28	1.81	
Post-test	16.05	13.66	43.20	1	43.20	33.48*
			36.26	28	1.29	

***Significant at 0.05 level df 1, 28 table value 3.23**

In a recent study analyzing the effects of Turbulence Training on women hockey players, pre-test F-ratio values for agility (0.015) and muscle endurance (0.29) were examined using ANOVA. The comparison, as shown in Table 2, revealed that the F-ratio values were lower than the table value of 3.23. This suggests that there is no significant difference between the experimental and control groups in terms of agility and muscle endurance.

After undergoing Turbulence Training, the F-ratio for agility increased to 8.16* and for muscle endurance to 33.48*. These values were significantly higher than the table value of 3.32, indicating a notable improvement in both agility and muscle endurance amongst women hockey players who participated in the training program.

This study highlights the effectiveness of Turbulence Training in enhancing the performance of women hockey players, particularly in terms of agility and muscle endurance. By incorporating this innovative training method into their routine, female athletes can experience significant improvements in key areas essential for success on the hockey field.

Conclusion

In the realm of women's hockey, Turbulence Training emerges as a promising fitness solution for players looking to elevate their performance on the ice. This innovative regimen combines high-intensity interval training and tailored strength exercises to address the specific demands of hockey, offering a targeted approach to enhancing speed, agility, endurance, and overall athleticism.

Tailored to the unique demands of hockey, which involve rapid bursts of activity interspersed with brief periods of rest, Turbulence Training aligns closely with the principles of the sport. By focusing on short, intense workouts, this training method allows players to optimize their

conditioning while minimizing time commitments – a key consideration for athletes managing rigorous training schedules and competitive demands.

For women hockey players looking to sharpen their explosiveness and scoring ability, tailored HIIT routines can help improve acceleration and power. On the other hand, defensemen may benefit from strength-focused workouts aimed at enhancing stability, agility, and resilience in physical battles along the boards and in front of the net.

In essence, Turbulence Training represents a dynamic and efficient tool for women hockey players striving for excellence in their sport. Through its targeted approach to conditioning and performance enhancement, this regimen has the potential to elevate the game of female athletes, driving progress and innovation within the world of women's hockey. As the sport continues to evolve, Turbulence Training stands ready to play a pivotal role in shaping the next generation of elite female hockey players.

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