International Journal of Physical Education and Sports
Peer Reviewed and Referred Journal www.phyedusports.in
Volume: 9, Issue: 12, Pages: 01-05, Year: 2024
Impact Factor: 3.125 (RIF)3.61 (IJI)
ISSN- 2456-2963

Effectiveness of SAQ Training in Enhancing Motor Fitness Variables of Handball Players

Dr .S.Sujanesh.k Das[1]

[1]Associate professor and Head of the Department, Department of physical Education, Government Medical College, Calicut, Kerala. India.

Received Nov 08, 2024; Accepted Nov 17, 2024; Published Dec 01, 2024

Abstract

The purpose of the present study was to investigate the effectiveness of Speed, Agility and Quickness (SAQ) training in enhancing selected motor fitness variables among handball players. Thirty (N=30) male handball players aged between 18 and 24 years were selected as subjects for the study. The selected motor fitness variables were speed, explosive leg power, and agility. Speed was measured by the 30-meter dash test, explosive leg power by the standing broad jump test, and agility by the 10-meter shuttle run test. A pre-test was administered before the commencement of the eight-weeks SAQ training programme and a post-test was conducted after completion of the training. The collected data were analyzed using mean, standard deviation, and paired sample t-test. The results revealed significant improvement in speed and agility among handball players, whereas improvement in explosive leg power was not statistically significant. It was concluded that SAQ training is an effective training method for enhancing selected motor fitness variables of handball players

Key Words: SAQ Training, Motor Fitness, Speed, Agility, Explosive Leg Power, Handball Players.

1. Introduction:

Motor fitness is one of the most important determinants of athletic performance. It comprises various physical capacities such as speed, strength, agility, balance, coordination, flexibility, and endurance that enable athletes to perform sports-specific skills effectively. In competitive sports, especially team games, a high level of motor fitness is essential for achieving optimal performance.

Handball is a fast, dynamic, and physically demanding sport that requires players to perform repeated sprints, rapid changes of direction, jumps, throws, and defensive movements throughout the game. To execute these actions successfully, players must possess excellent speed, agility, and explosive power. Therefore, improving motor fitness components is a primary objective of handball training programmes.

Modern sports conditioning programmes have increasingly adopted Speed, Agility, and Quickness (SAQ) training as a scientific method for improving athletic performance. SAQ training consists of structured exercises designed to enhance movement efficiency, acceleration, deceleration, reaction time, and neuromuscular coordination. Common SAQ exercises include ladder drills, cone drills, shuttle runs, sprint training, and plyometric activities.

The effectiveness of SAQ training has been supported by numerous studies that reported significant improvements in speed, agility, coordination, and reaction ability among athletes. Since handball requires rapid movements and quick responses to changing game situations, SAQ training may provide substantial benefits to handball players. However, limited research has specifically investigated its effectiveness among handball players. Therefore, the present study was undertaken to evaluate the effectiveness of SAQ training in enhancing selected motor fitness variables of handball players.

1.1 Objectives of the Study:

- To determine the effectiveness of SAQ training in improving speed among handball players.
- To determine the effectiveness of SAQ training in improving explosive leg power among handball players.
- To determine the effectiveness of SAQ training in improving agility among handball players.

1.2 Hypothesis:

It was hypothesized that SAQ training would significantly improve selected motor fitness variables among handball players.

2. Materials and Method:

2.1 Selection of Subjects:

For the purpose of the present study, thirty (N=30) male handball players were selected from inter university players, India. The age of the subjects ranged from 18 to 24 years. The subjects were selected through random sampling technique.

2.2 Selection of Variables:

For the present study, selected the following motor fitness variables:

- Speed
- Explosive Leg Power
- Agility.

2.3 Criterion Measures:

The following standardized tests were used to measure the selected variables:

VARIABLE	TEST
Speed	30 Meter Dash
Explosive Power	Standing Broad Jump
Agility	10 Meter Shuttle Run

2.4 Training Program:

The selected subjects participated in an eight-week SAQ (Speed, Agility, and Quickness) training programme designed to improve selected motor fitness variables. The training was conducted five days per week for a duration of eight weeks. Each training session lasted approximately 45 minutes and was carried out under the supervision of the researcher.

The training programme consisted of various SAQ drills, including ladder drills, cone drills, sprint drills, shuttle runs, and plyometric exercises. These exercises were progressively increased in intensity and complexity throughout the training period to ensure continuous adaptation and improvement.

Each training session was divided into three phases. The first phase included a 10-minute warm-up consisting of light jogging, dynamic stretching, and mobility exercises. The second phase involved 30 minutes of SAQ-specific drills aimed at improving speed, agility, quickness, coordination, and movement efficiency. The final phase included a 5-minute cool-down session consisting of light stretching and relaxation exercises to facilitate recovery and reduce the risk of injury.

2.5 Statistical Procedure:

The collected data were analyzed using Mean, Standard Deviation, and Paired Sample t-test. The level of significance was set at 0.05. All the statistical procedure was performed with the help of SPSS (V.20).

3. Data analysis and Interpretation:

Table: 1

EFFECT OF SAQ TRAINING ON SELECTED MOTOR FITNESS VARIABLES AMONG HANDBALL PLAYERS

Variables	Test	Mean	Std. Deviation	t-value	Sig.
30m Dash	Pre-test	5.91	0.68	4.126	0.002*
	Post-test	5.62	0.65		
Standing Broad Jump	Pre-test	1.71	0.34	1.854	0.916
	Post-test	1.76	0.36		
30m Shuttle Run	Pre-test	11.67	1.12	4.012	0.003*
	Post-test	11.21	1.01		

*** Significant at 0.05 level of significance**

Table 1 presents the mean, standard deviation, and paired sample t-test values of selected motor fitness variables among handball players before and after the SAQ training programme.

The mean score of the 30m Dash decreased from 5.91 ± 0.68 seconds in the pre-test to 5.62 ± 0.65 seconds in the post-test. The obtained t-value was 4.126 with a significance value of 0.002, which was less than the 0.05 level of significance. This indicates that the SAQ training programme resulted in a statistically significant improvement in speed among the handball players.

In the Standing Broad Jump, the mean score increased from 1.71 ± 0.34 meters in the pre-test to 1.76 ± 0.36 meters in the post-test. Although there was a slight improvement in explosive leg power, the obtained t-value (1.854) and significance value (0.916) indicated that the improvement was not statistically significant.

Similarly, the mean score of the 30m Shuttle Run decreased from 11.67 ± 1.12 seconds in the pre-test to 11.21 ± 1.01 seconds in the post-test. The calculated t-value was 4.012 with a significance value of 0.003, which was less than the 0.05 level of significance. This finding demonstrates a statistically significant improvement in agility following the SAQ training programme.

Overall, the findings of Table 1 reveal that the SAQ training programme was effective in significantly improving speed and agility, whereas explosive leg power showed improvement but failed to reach a statistically significant level among the handball players.

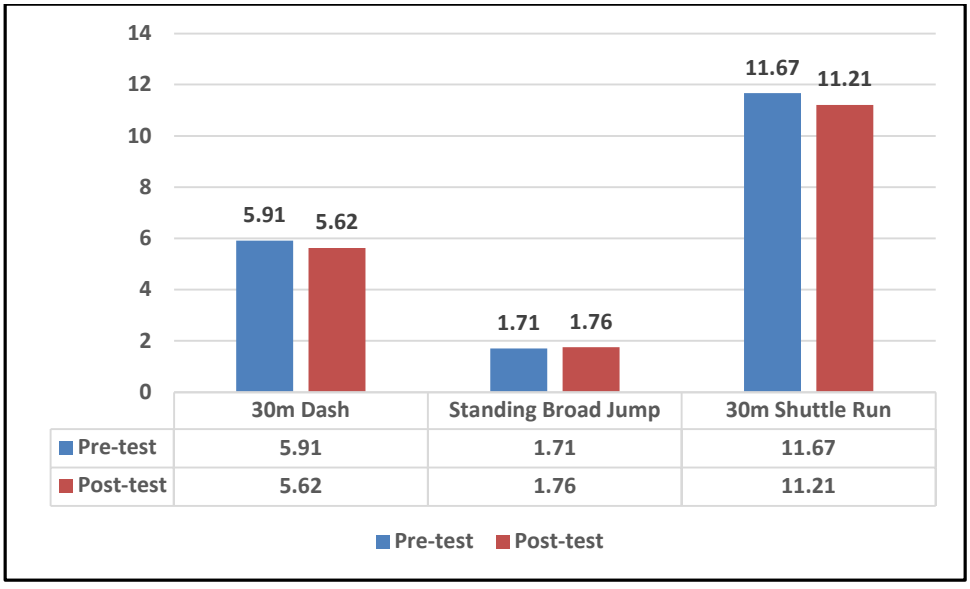

Figure:1: Graphical Representation of Selected Motor Fitness Variables among Handball Players Before and After SAQ Training Programme

4. Discussion of the Findings:

Table 1 presents the mean, standard deviation, and paired sample t-test values of selected motor fitness variables among handball players before and after the eight-week SAQ training programme.

The mean score of the 30 Meter Dash decreased from 5.91 seconds in the pre-test to 5.62 seconds in the post-test, indicating an improvement in speed. The obtained t-value was 4.126 with a significance value of 0.002, which was less than the prescribed level of significance (0.05). Therefore, the improvement in speed was found to be statistically significant.

The mean score of the Standing Broad Jump increased from 1.71 meters in the pre-test to 1.76 meters in the post-test, indicating a slight improvement in explosive leg power. However, the obtained t-value was 1.854 with a significance value of 0.916, which was greater than 0.05. Therefore, the improvement in explosive leg power was not statistically significant.

Similarly, the mean score of the 30 Meter Shuttle Run decreased from 11.67 seconds in the pre-test to 11.21 seconds in the post-test, indicating an improvement in agility. The obtained t-value was 4.012 with a significance value of 0.003, which was less than 0.05. Therefore, the improvement in agility was found to be statistically significant.

The results indicate that the SAQ training programme was effective in improving speed and agility among handball players, whereas no significant improvement was observed in explosive leg power.

5. Conclusions:

Based on the findings of the study, the following conclusions were drawn:

- ✓ SAQ training significantly improved speed among handball players.
- ✓ SAQ training significantly improved agility among handball players.
- ✓ Explosive leg power showed improvement but was not statistically significant.
- ✓ SAQ training is an effective method for enhancing selected motor fitness variables of handball players.

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Dr.S.Sujanesh.k Das,
Associate professor and Head of the Department,
Department of physical Education,
Government Medical College, Calicut, Kerala.