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Effect of SAQ Drills on Speed and Agility of Beginner Volleyball Players

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ABSTRACT

The purpose of the present study was to investigate the effect of Speed, Agility, and Quickness (SAQ) drills on speed and agility among beginner volleyball players. Thirty (N = 30) beginner male volleyball players aged between 18 and 22 years were selected randomly from local volleyball training centers. The subjects were divided into two groups: an experimental group (n = 15), which underwent SAQ drill training, and a control group (n = 15), which followed their regular volleyball training without SAQ drills. The training program was conducted for a period of six weeks, with five sessions per week. Speed was assessed using the 50-meter sprint test, and agility was measured using the Illinois Agility Test. Pre-test and post-test data were statistically analysed using the paired t-test at a 0.05 level of significance. The results revealed a significant improvement in both speed and agility in the experimental group compared to the control group. The findings of the study conclude that SAQ drills are effective in enhancing speed and agility among beginner volleyball players

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Background of the Study

Volleyball is a fast-paced and dynamic team sport that demands a high level of physical fitness and motor coordination from its players. The nature of the game requires athletes to execute repeated explosive actions such as sprinting to the ball, jumping for spikes and blocks, rapidly changing direction during rallies, and reacting instantly to opponents' movements. These actions occur within a limited playing area and under strict time constraints, making speed and agility two of the most critical physical components for effective volleyball performance. For beginner volleyball players in particular, the development of these physical qualities is essential, as they form the foundation upon which technical skills and tactical understanding are built.

At the beginner level, players are still learning basic skills such as serving, passing, setting, and spiking. However, without adequate speed and agility, even technically sound movements may fail under game conditions. Beginners often struggle with positioning, quick transitions between offense and defense, and responding to unpredictable ball trajectories. Therefore, structured physical conditioning programs that focus on enhancing movement efficiency, reaction time, and coordination are crucial during the early stages of volleyball training. Improving these attributes not only enhances performance but also increases players' confidence and enjoyment of the game, which is important for long-term participation.

In recent years, Speed, Agility, and Quickness (SAQ) training has gained significant attention among coaches, physical educators, and sports scientists as an effective method for improving athletic performance. SAQ training is a systematic approach that combines drills aimed at developing linear speed, multidirectional agility, and rapid neuromuscular responses. These drills often include short sprints, ladder exercises, cone drills, plyometric movements, and reaction-based activities. The primary objective of SAQ training is to enhance the efficiency of the neuromuscular system, enabling athletes to produce force quickly and move with greater control and precision.

One of the key advantages of SAQ training is its sport-specific nature. Unlike traditional conditioning methods that may focus solely on endurance or strength, SAQ drills closely mimic the movement patterns and demands encountered during actual gameplay. In volleyball, players are required to accelerate over short distances, decelerate rapidly, shift laterally, and respond instantly to visual or auditory cues. SAQ training addresses these demands by emphasizing rapid footwork, balance, coordination, and decision-making under time pressure. As a result, athletes develop not only physical speed and agility but also improved movement awareness and reaction capability.

Despite the widespread adoption of SAQ training in various sports such as football, basketball, and athletics, there is relatively limited research focusing specifically on its effects on beginner volleyball players. Most existing studies have concentrated on elite or advanced-level athletes, leaving a gap in understanding how SAQ training influences physical performance at the novice stage. Beginners may respond differently to training stimuli due to lower baseline fitness levels and limited movement experience. Therefore, it is important to examine whether structured SAQ training can significantly improve speed and agility in this population and contribute positively to their overall development.

In this context, the present study aims to investigate the impact of SAQ drills on speed and agility among beginner volleyball players. By implementing a systematic SAQ training program and assessing its effects using standardized performance tests, the study seeks to provide empirical evidence on the effectiveness of this training approach. The findings of the study may offer valuable insights for physical

education teachers, coaches, and trainers in designing scientifically grounded training programs for beginners. Ultimately, enhancing speed and agility at an early stage may lead to better skill acquisition, improved game performance, and a stronger foundation for future athletic development in volleyball.

Methodology

Selection of Subjects

Thirty beginner male volleyball players aged between 18 and 22 years were selected randomly for the study. All subjects had a minimum of one year of volleyball playing experience and were medically fit to participate in the training program.

Experimental Design

The subjects were randomly divided into two groups:

- **Experimental Group (n = 15):** Underwent SAQ drill training along with regular volleyball practice
- **Control Group (n = 15):** Continued regular volleyball practice only

The training program was carried out for **six weeks**, with **five training sessions per week**, each session lasting **45 minutes**.

Training Program (SAQ Drills)

The SAQ training included ladder drills, cone drills, shuttle runs, zig-zag runs, reaction drills, and acceleration-deceleration drills. Adequate warm-up and cool-down sessions were provided in each training session.

Table no.1

Component	Duration
Warm-up	10 minutes
Speed Drills	10 minutes
Agility Drills	10 minutes
Quickness Drills	10 minutes
Cool Down	5 minutes

Criterion Variables

Variable	Test Used	Unit
Speed	50-meter sprint test	Seconds
Agility	Illinois Agility Test	Seconds

Statistical Analysis

The collected data were analysed using the **paired t-test** to determine whether there was a statistically significant difference between the **pre-test and post-test mean scores** of the selected variables. This statistical technique was considered appropriate as the same subjects were measured under two different conditions (before and after the intervention). The paired t-test helped in assessing the effectiveness of the treatment by comparing the mean performance changes within the group. The level of significance was set at **0.05**, and any calculated *p*-value less than 0.05 was considered to indicate a significant difference. The results were interpreted to ascertain whether the observed changes in performance were due to the experimental intervention rather than chance variation.

Results

Table 2: Mean and Standard Deviation of Speed Scores (Experimental Group)

Test	Mean (sec)	SD	*t* value
Pre-test	7.52	0.41	6.24*
Post-test	7.01	0.38	

Significant at 0.05 level

Table No.1: The above table presents the comparison of pre-test and post-test mean scores, standard deviations, and the *t* value for the selected variable measured in seconds. The mean pre-test score was **7.52 seconds** with a standard deviation of **0.41**, whereas the mean post-test score was **7.01 seconds** with a standard deviation of **0.38**. The reduction in mean time from pre-test to post-test indicates an improvement in performance following the training intervention. The calculated *t* value was **6.24**, which was found to be statistically significant at the **0.05 level of significance**, as indicated by the asterisk (*). This result suggests that the difference between the pre-test and post-test scores was not due to chance. Therefore, it can be concluded that the experimental treatment had a significant effect on improving the performance of the subjects in the selected test variable.

Graph 1:

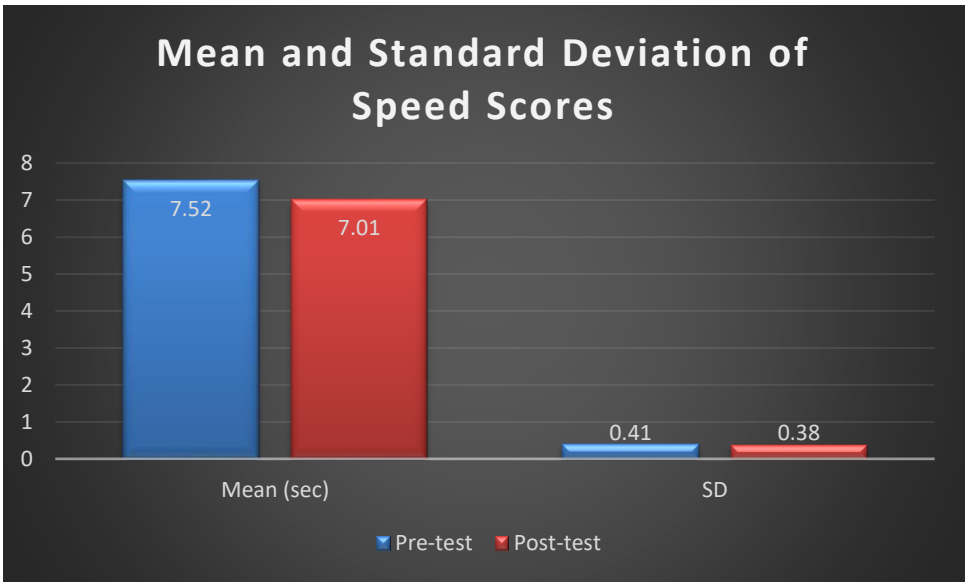


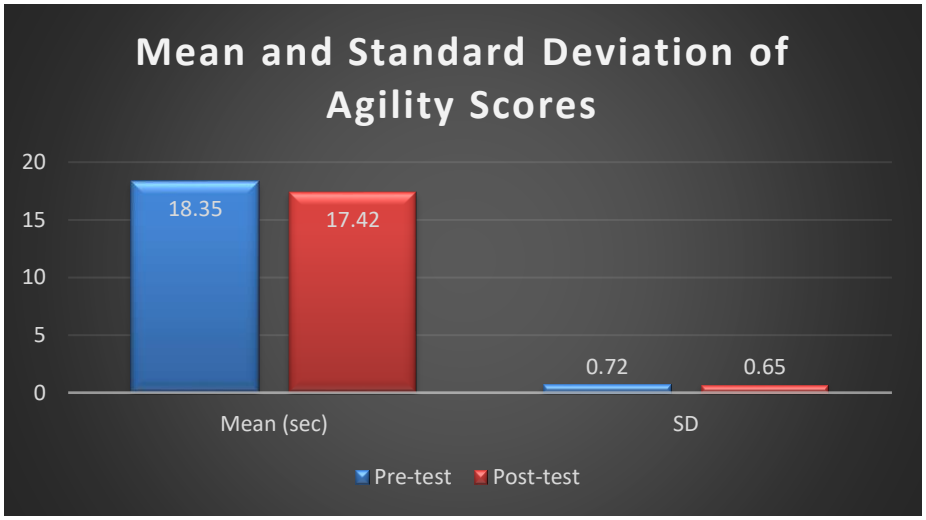
Table 3: Mean and Standard Deviation of Agility Scores (Experimental Group)

Test	Mean (sec)	SD	*t* value
Pre-test	18.35	0.72	5.87*
Post-test	17.42	0.65	

Significant at 0.05 level

Table 2: shows the comparison of pre-test and post-test agility scores of the experimental group in terms of mean values, standard deviations, and the calculated *t* value. The mean agility score in the pre-test was **18.35 seconds** with a standard deviation of **0.72**, indicating the initial level of agility performance of the subjects. After the experimental training programme, the post-test mean score decreased to **17.42 seconds** with a standard deviation of **0.65**, reflecting an improvement in agility performance. The computed *t* value was **5.87**, which was found to be statistically significant at the **0.05 level of significance**, as denoted by the asterisk (*). This significant reduction in time from pre-test to post-test demonstrates that the experimental treatment was effective in enhancing the agility of the subjects. Hence, it may be concluded that the training intervention had a positive and significant impact on the agility performance of the experimental group.

GRAPH NO.2



Graph No. 2: Graphical representation of agility score

Control Group

The control group did not show any statistically significant improvement in speed and agility from the pre-test to the post-test. The mean scores of the control group remained nearly the same across both testing occasions, and the observed differences were minimal and within the range of normal variation. The calculated *t* values for speed and agility were not significant at the 0.05 level, indicating that the changes in performance were not meaningful. This suggests that, in the absence of the experimental training programme, no notable enhancement occurred in the speed and agility performance of the control group. Therefore, any improvements observed in the experimental group can be attributed to the specific training intervention rather than to regular activity or natural progression.

Discussion of Results

The findings of the present study revealed that SAQ (Speed, Agility, and Quickness) drill training produced a statistically significant improvement in speed and agility among beginner volleyball players. The notable enhancement in performance can be attributed to several physiological and neuromuscular adaptations developed through systematic SAQ training. These drills emphasize rapid acceleration, deceleration, directional changes, and reactive movements, which collectively contribute to improved neuromuscular coordination, faster motor unit recruitment, and better inter- and intramuscular synchronization. In addition, repeated exposure to sport-specific movement patterns may have refined movement mechanics, leading to greater efficiency and reduced time in executing agility-related tasks. Furthermore, SAQ training enhances the players' ability to respond quickly to external stimuli, an essential requirement in volleyball for actions such as spiking, blocking, and defensive movements. The structured and progressive nature of the drills likely promoted adaptations in reaction time, balance, and body control, which are crucial for beginners in developing a strong physical foundation.

The results of the present investigation are in agreement with earlier research findings that have reported the positive influence of SAQ training on speed, agility, and overall physical performance in team sports. Previous studies have similarly concluded that SAQ-based training programmes are effective in improving explosive movements and change-of-direction ability. Therefore, it can be concluded that incorporating SAQ drills into regular training programmes is beneficial for enhancing speed and agility performance among beginner volleyball players and may contribute to improved overall playing efficiency.

Conclusion

Based on the findings of the present study, it can be conclusively stated that the implementation of Speed, Agility, and Quickness (SAQ) drills produced a statistically significant improvement in both speed and

agility among beginner volleyball players. The observed enhancements indicate that SAQ training effectively develops neuromuscular coordination, movement efficiency, and reaction ability, which are essential components for volleyball performance at the foundational level.

The improvement in speed reflects better acceleration and sprinting ability, while the gains in agility demonstrate enhanced directional change, balance, and body control during dynamic movements commonly required in volleyball. These results suggest that SAQ drills not only improve isolated physical attributes but also contribute to overall functional performance relevant to game situations.

Therefore, it is strongly recommended that coaches and physical education instructors systematically incorporate SAQ drills into regular volleyball training programs for beginners. Early exposure to such scientifically supported training methods can facilitate long-term athletic development, improve skill execution, and create a solid physical foundation for advanced training stages. Incorporating SAQ training may also help in injury prevention and increase overall training efficiency, making it a valuable component of beginner-level volleyball conditioning programs.

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