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# Effects of SAQ Training on Agility, Explosive Strength, and Speed Endurance among All India Inter-University Men Football Players

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***Abstract***

*The study aimed to determine the effects of four weeks of SAQ Training on Agility, Explosive Strength, and Speed Endurance among All India Inter-University Men's Football Players. For the study, 20 male football players who were going to participate in* the *South Zone of AIU were selected. The subjects were divided into the Control Group (CG) and SAQ Group (PG).*

*All subjects were tested on criterion variables, i.e., Agility, Explosive strength, and speed endurance. The data of the respective performance variable were collected at the pre-stage and post-stage. The descriptive analysis and independent t-test were applied to determine the difference in each criterion variable. It was found and concluded that four weeks of SAQ training could improve the performance of football players.*

***Keywords: SAQ, Explosive Strength, Speed Endurance, Football.***

## Introduction

Football requires players to perform numerous skills requiring strength, power, speed, agility, balance, stability, flexibility, and endurance (Bloomfield et al., 2007; Gorostiaga et al., 2004; Helgerud et al., 2001) state that the physical conditioning of players is a complex process. During a football match, players cover almost 10 km in total, which includes an average sprint every 90 seconds (11% of overall activity), with each action lasting an average of 2 to 4 seconds and covering a distance of up to 15 meters (Stolen et al., 2005). Although speed signifies an essential fitness component for a football player, quickness (acceleration speed during the first steps) is additionally crucial. This is because sprints in football are mainly performed over short distances at maximal intensity, although the most extended distances tend to be about 40 m and usually involve several direction changes (Jovanovic et al., 2011; Rienzi et al., 2000).

High-speed actions in football have been categorized as requiring agility skills, acceleration, and maximal speed (Gambetta, 1996). Chapman et al., 2008 described speed in football as consisting of running speed, reaction speed, and acceleration speed during the first steps (referred to as quickness). These categorizations imply that the SAQ (speed, agility, and quickness) training method should be a valuable component of fitness training in football (Pearson, 2001). A typical SAQ session involves explosive movements with the aim of progression from fundamental movement patterns too precise movements (positional) (Yap and Brown, 2000). Hence this form of training is supposed to encourage the adaptation of movement mechanics, length and frequency of steps, and increased hip height in the pursuit of increased speed, agility, and quickness (Pearson, 2001).

Little and Williams, 2006 observed a significant correlation between acceleration, maximal speed, and agility. Still, it concluded that each component had enough unique characteristics to consider unrelated. This is an essential distinction for coaches who work on improving speed and agility, as the research suggests that

different activities are needed for each. Indeed, SAQ training seeks to improve speed, agility, and quickness through various football-specific exercises designed to address each component's common and unique characteristics.

Agility and explosive strength are also essential for footballers (Jovanovic et al., 2011). Jullien et al., 2008 demonstrated that a short-term agility training program (3 weeks duration) improved agility test results among young professional football players. However, Jovanovic et al., 2011 did not find that an SAQ training program improved the agility performance of young football players during the in-season period when training with and without a ball, although this was found to be an effective way of improving some aspects of power performance. While these results were somewhat surprising, they do not invalidate the link between SAQ training and improvements in agility, both for players with and without the ball, since the training program may have been insufficient, in terms of duration or volume of training, to promote significant improvements. Logically, given the nature of SAQ training, this training should improve football players' agility with and without the ball. However, this would depend on the specific nature of the movement and its duration. In one such study, Rösch et al., 2000 concluded that elite players, but not amateurs, could adapt their body positions due to SAQ training to perform football movements with better balance, strength, balance, and control without any loss of speed.

Despite the research above, at this point, there is scientific evidence to support the effectiveness of SAQ training for conditioning football players such that football-specific improvements are produced (Jovanovic et al., 2011; Sporis et al., 2010b;2011). Therefore, this study aimed to determine the effects of an SAQ training method on Explosive Strength and Speed Endurance among All India Inter-university Men Football Players.

**Method and Procedure**

Twenty male soccer players from the South Zone of All India Inter University were selected as subjects for the present study. The investigator met the football players during camps for during all-India Inter-university football camp. All the male soccer players were aged between 18 and 26. The selected football players were divided into two groups. Ten players were grouped as the SAQ training (n=10) group and ten as the control group (n=10). All the selected subjects underwent medical checkups before the training. It was ensured that no subjects had any ailments. The dates for Agility, Explosive Strength, and Speed were collected pre- and post-phase. The SAQ group underwent four weeks of intense SAQ training for speed, agility, and quickness, and the control group practiced their routine training session.

**Discussion and Findings**

For the analysis, the Independent 't-test will be implemented to calculate the significant difference, if any, with the significance criteria of $\alpha =$ or $p < 0.05$.

**Table 1 Mean Scores, Standard Deviation, Std. Error Mean and Resultant 't' Values for Agility Test at Post Control and Post SAQ.**

| Groups | N | Mean | Std. Deviation | Std. Error Mean | df | t |
|---|---|---|---|---|---|---|
| **Post Control Group** | 10 | 14.79 | .597 | .189 | 18 | **2.967*** |
| **Post SAQ Group** | 10 | 14.22 | .139 | .044 | | |

***Significant at p>=0.05 level***

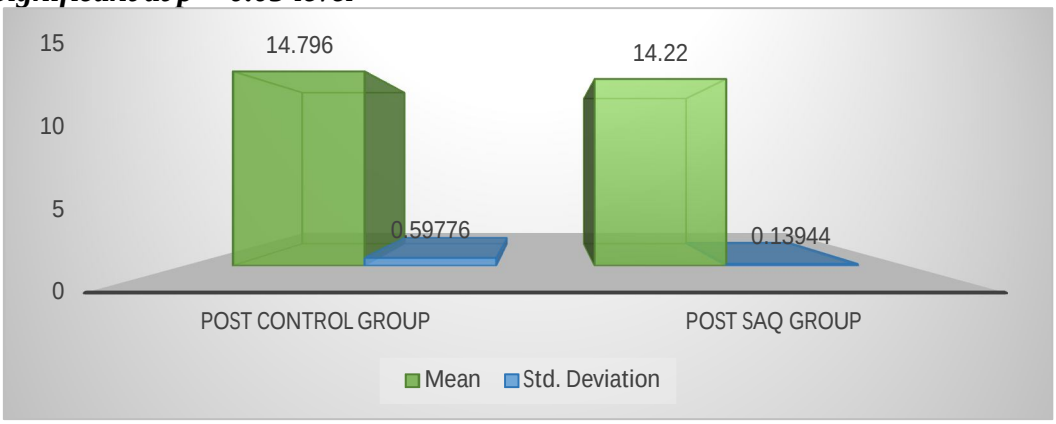


**Figure 1.1: Present the Mean and the Std. Deviation in Agility at Post-control and Post SAQ**

Table 1.1 reveals that there was a significant difference exists between the mean scores of post control to post SAQ group as the obtained 't' value 2.101 for the agility test, which was found to higher than the required table value of 2.552 for significance at 0.05 level of confidence with df 18. The mean and the standard deviation of the post-control to the post-SAQ group were 14.796 ± 0.597 and 14.22 ± 0.139, respectively.

**Table 2 Mean Scores, Standard Deviation, Std. Error Mean and Resultant 't' Values for 1 Explosive Strength Test at Post Control and Post SAQ**

| Groups | N | Mean | Std. Deviation | Std. Error Mean | df | t |
|---|---|---|---|---|---|---|
| **Post Control Group** | 10 | 56.80 | 1.619 | .51208 | 18 | **2.260*** |
| **Post SAQ Group** | 10 | 54.70 | 2.451 | .77531 | | |

***Significant at p>=0.05 level***

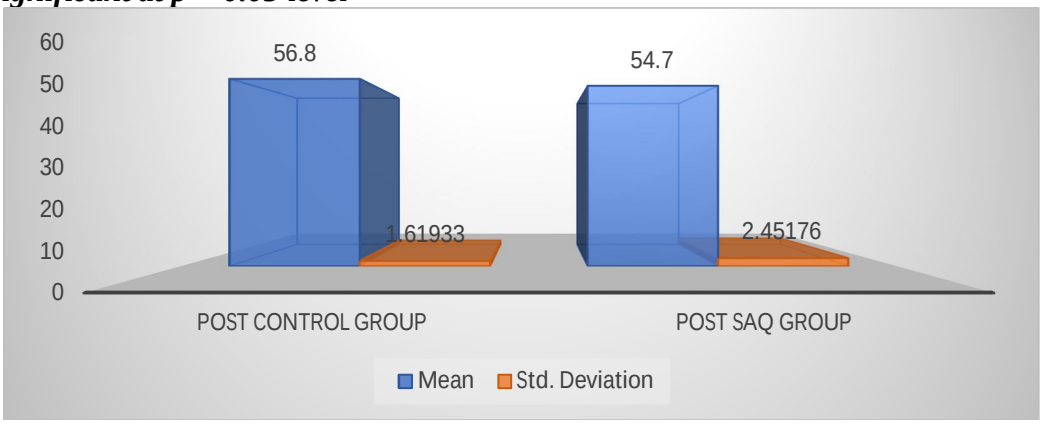


**Figure 1.2: Present the Mean and the Std. Deviation in Explosive Strength at Post-Control and Post SAQ**

Table 1.2 reveals that there was a significant difference exists between the mean scores of post control to post SAQ group as the obtained 't' value 2.260 for the Explosive Strength test, which was found to higher than the required table value of 2.101 for significance at 0.05 level of confidence with df 18. The mean and the standard deviation of the post-control to the post-SAQ group were 56.8 ± 1.619 and 54.7 ± 2.451, respectively.

**Table 3**
**Mean Scores, Standard Deviation, Std. Error Mean and Resultant 't' Values for 1 Speed Endurance Test at Post Control and Post SAQ.**

| Groups | N | Mean | Std. Deviation | Std. Error Mean | df | t |
|---|---|---|---|---|---|---|
| **Post Control Group** | 10 | 56.86 | 1.475 | .466 | 18 | **2.193*** |
| **Post SAQ Group** | 10 | 55.70 | .766 | .242 | | |

***Significant at p>=0.05 level***

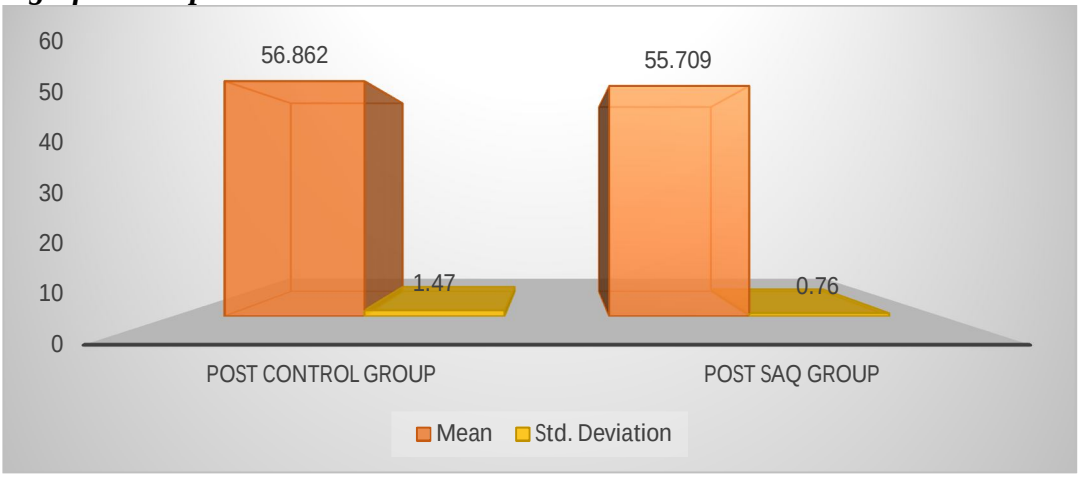


**Figure 1.3: Present the Mean and the Std. Deviation in Speed Endurance at Post-Control and Post SAQ**

Table 1.3 reveals that there was no significant difference exists between the mean scores of post control to post SAQ group as the obtained 't' value 2.193 for the Speed Endurance test, which was found to lower than the required table value of 2.101 for significance at 0.05 level of confidence with df 18. The mean and the standard deviation of the post-control to the post-SAQ group were 56.862 $\pm$ 1.475 and 55.709 $\pm$ 0.766, respectively.

Based on the finding, it was analyzed that the SAQ training group had the upper hand in terms of performance capacity when compared to the Control group. SAQ groups underwent the training schedule designed by experts from the same field. Comparing the performance of both groups in the pre-stage, as presented in the tables above, we can see that the SAQ training group improved physical performance.

This difference is a clear indicator that SAQ training had a positive effect on performance capacity. Based on the result, it can be stated that SAQ training contributes to performance enhancement in Agility, Explosive Strength, and Speed Endurance.

**Conclusion**

Due to the complex physical requirements in soccer, including Agility, Explosive Strength, and Speed Endurance, soccer training must fulfill the improvement needs. The data demonstrated a strong ability of SAQ training to transfer and improve specific performance analysis among footballers. The seven phases of a particular speed and agility (SAQ) training program (Pearson, 2001) contributed to a statistically significant improvement in performance in different agility tests with and without the ball in soccer players. While it is impossible to

determine which individual components had significant or non-significant contributions, the overall effect led to improved agility. These findings support the contention that the SAQ program should be a part of routine soccer training. The extent to which SAQ training features in both pre-season and in-season training needs to be further investigated as it appears anecdotally that agility training, for many teams, is not undertaken to the extent it should be. Research suggests that appropriate SAQ training will improve soccer players' agility, explosive strength, and speed endurance to cope with the actual demands of the game.

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