

**A Study on the Effects of SAQ Training on Selected Psychomotor Variables of Basketball Players**

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**Abstract**

The purpose of the present study was to examine the effect of Speed, Agility, and Quickness training on selected psychomotor variables among basketball players. To achieve this objective, thirty basketball players from Vinayaka Mission University, Salem, Tamil Nadu, India, aged between 18 and 25 years, were selected as subjects. The participants were randomly divided into two groups, namely an experimental group (n = 15) and a control group (n = 15). The experimental group underwent SAQ training for a period of twelve weeks, with training sessions conducted three times per week, while the control group did not receive any specific training intervention. The selected psychomotor variables included hand-eye coordination, reaction time, and balance. Hand-eye coordination was assessed using the alternate hand wall toss test, reaction time was measured using a reaction timer, and balance was evaluated through the stork stand test. The collected data were analyzed using the dependent 't' test to determine the significance of differences between pre-test and post-test scores. The results of the study revealed significant improvements in hand-eye coordination, reaction time, and balance among the experimental group, whereas no significant changes were observed in the control group. The findings indicate that SAQ training has a positive and significant impact on psychomotor variables of basketball players. It is concluded that SAQ training is an effective method for enhancing psychomotor abilities and can be incorporated into regular training programs to improve performance in basketball.

**Keywords:** SAQ training, Hand eye co-ordination, Balance, Basketball.

**1. Introduction**

Basketball is a high-intensity, intermittent sport that requires a combination of physical, physiological, and psychomotor abilities for optimal performance. Players must demonstrate rapid acceleration, quick directional changes, coordination, reaction time, balance, and agility during both offensive and defensive play. These demands highlight the importance of structured training programs aimed at enhancing psychomotor variables, which play a crucial role in skill execution and overall performance in basketball. Speed, Agility, and Quickness (SAQ) training has gained considerable attention in recent years as an effective method for improving athletic performance. SAQ training focuses on enhancing neuromuscular coordination, movement efficiency, and reaction ability through sport-specific drills. It has been reported that SAQ training improves acceleration, agility, and reaction time by stimulating the central nervous system and improving motor unit recruitment (Sheppard & Young, 2006). Additionally, SAQ drills are designed to replicate game-like situations, thereby improving the transfer of training effects to actual performance (Jovanovic et al., 2011).

Psychomotor variables such as reaction time, coordination, balance, and agility are critical determinants of success in basketball. These variables reflect the integration of cognitive processes with physical movement, enabling athletes to respond quickly and effectively to game situations. Training interventions that target both neuromuscular and motor control aspects are therefore essential for improving these variables (Akuthota & Nadler, 2004).

**2. Methodology**

To achieve the purpose of this study the investigators selected thirty basketball players from Vinayaka Mission University, Salem, Tamilnadu, India and their age ranged from 18 to 25 years. Training occurred three times per week with at least one day of rest between sessions for twelve weeks. A total of 30 basketball players were enlisted and divided into two groups: experiment (15) and control (15). The players in the experiment group participated in 12-week training sessions, while the players in the control group did not get any treatment. Hand eye co-ordination was assessed by alternate hand wall toss test, reaction time was assessed by reaction timer and balance was assessed by stork stand. The test items were carefully administered with skillfull hands and proper precautions were given. Single group design was used in this study. Dependent 't' test was computed to find out the difference between initial and final means.

**3. Results**

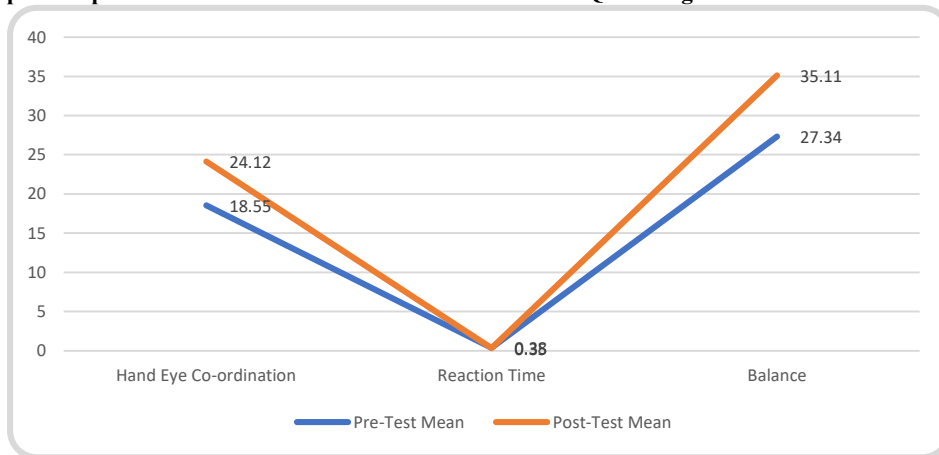
The results were presented in the following tables,

**Table 1. Significance of mean gains & losses between pre and post test scores on selected variables of SAQ training group**

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Hand Eye Co-ordination	18.55	24.12	5.57	0.44	0.58	9.23*
2	Reaction Time	0.38	0.35	0.03	0.61	0.01	7.56*
3	Balance	27.34	35.11	7.77	1.12	0.92	6.26*

An examination of table-1 indicates that the obtained 't' ratios were 9.23, 7.56 and 6.26 forhand eye co-ordination, reaction time and balance respectively. The obtained 't' ratios on selected variables were found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The results of this study showed that statistically significant and explained its effects positively.

**Figure 1. Shows the pre and post test mean scores on selected variables of SAQ training**

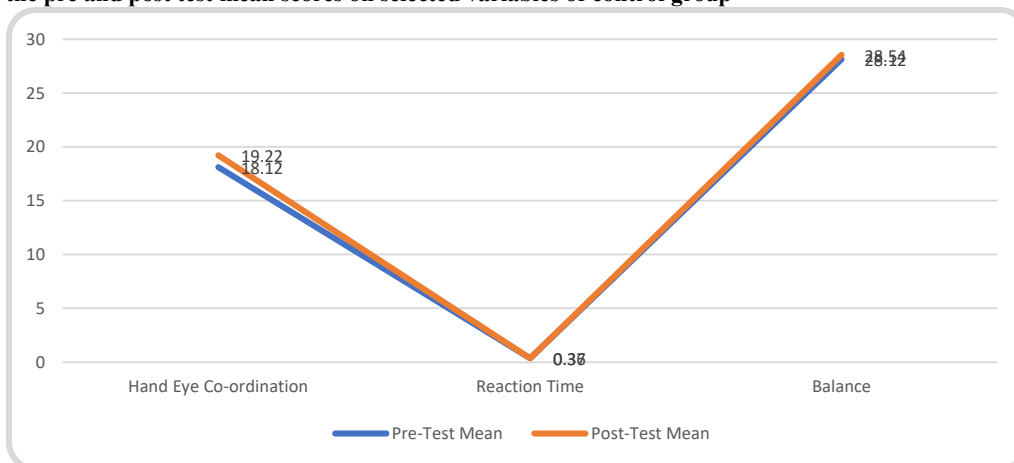


**Table 2. Significance of mean gains & losses between pre and post test scores on selected variables of control group**

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Hand Eye Co-ordination	18.12	19.22	1.10	0.42	0.55	1.28
2	Reaction Time	0.37	0.36	0.01	0.60	0.01	0.88
3	Balance	28.12	28.54	0.42	1.11	0.95	1.02

An examination of table-1 indicates that the obtained 't' ratios were 1.28, 0.88 and 1.02 for speed, agility and balance respectively. The obtained 't' ratios on selected variables were found to be lesser than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be insignificant.

**Figure 2. Shows the pre and post test mean scores on selected variables of control group**



#### 4. Discussion on Findings

The results of the present study clearly indicate that SAQ training had a significant effect on selected psychomotor variables among basketball players. The significant improvement observed in hand-eye coordination, reaction time, and balance in the experimental group may be attributed to the neuromuscular adaptations induced by SAQ training. These findings are consistent with earlier studies which reported that SAQ drills enhance motor coordination, reaction ability, and movement efficiency by improving the functioning of the central nervous system (Sheppard & Young, 2006; Jovanovic et al., 2011). The reduction in reaction time indicates improved sensory-motor integration and faster decision-making ability, which are essential in basketball performance. Similarly, the increase in balance suggests improved postural control and core stability, enabling better control during dynamic movements. In contrast, the control group did not show significant improvements, indicating that regular activity without structured SAQ training is insufficient to produce notable changes in psychomotor abilities. Thus, the findings confirm that SAQ training is an effective training method for enhancing psychomotor performance in basketball players.

#### 5. Conclusion and Future Scope

Based on the results of the study, it is concluded that SAQ training significantly improves hand-eye coordination, reaction time, and balance among basketball players. The experimental group showed statistically significant improvements, whereas the control group did not exhibit any meaningful changes. Therefore, SAQ training can be considered an effective training intervention for improving psychomotor variables and overall performance in basketball.

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