



Effect Of Thera-Band And Circuit Training On Selected Psychomotor Variables On Middle Aged Men

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Abstract: This study explores the impact of Thera-band and circuit training interventions on selected psychomotor variables, emphasizing their efficacy in enhancing motor skills, reaction time and balance. The research design incorporated pre- and post-test assessments, comparing the effects of the two training methods across experimental and control groups. Results indicated significant improvements in psychomotor performance for both intervention groups, with variations in the degree of enhancement depending on the specific variable. The findings suggest the potential of these training modalities in improving psychomotor functions in various populations.

Keywords: Thera-band training, circuit training, psychomotor variables, reaction time, balance.

INTRODUCTION

Psychomotor skills are crucial components of physical performance, encompassing attributes such as reaction time, coordination, and balance, which play a fundamental role in athletic and daily activities (Schmidt & Lee, 2019). Training methods like Thera-band and circuit training have been widely utilized to enhance these variables due to their functional and adaptive benefits (Behm & Sale, 1993). Thera-band training is a form of resistance exercise that employs elastic bands to improve muscle strength, flexibility, and coordination (Page et al., 2010). It has been extensively used in rehabilitation and sports performance settings to enhance neuromuscular control and stability (Anderson et al., 2005). Circuit training, on the other hand, involves a series of exercises performed in succession with minimal rest, targeting multiple fitness components simultaneously (Gettman et al., 1982). This type of training has been shown to improve endurance, agility, and overall motor function (Hoffman, 2002). Previous studies have highlighted the significance of structured training interventions in optimizing psychomotor abilities. For instance, Davlin (2004) demonstrated that balance training programs contribute to improved postural stability and coordination, which are essential for athletic performance. Similarly, research by McLeod et al. (2009) emphasized that reaction time is positively influenced by targeted neuromuscular training. Given the proven effectiveness of Thera-band and circuit training in various populations, this study aims to compare their effects on selected psychomotor variables. The findings will provide valuable insights for sports scientists, coaches, and rehabilitation professionals in designing training protocols that enhance motor function and overall physical performance.

METHODOLOGY

A total of [45] participant was recruited for this study, aged between [35 to 45]. Participants were randomly assigned to three groups: Thera-band training, circuit training, and a control group. The intervention spanned [3 months], with sessions conducted 3 days per week. Pre- and post-test assessments were conducted using standardized tests for reaction time and balance.

Thera-band Training Protocol: Exercises included upper and lower body resistance movements targeting coordination and stability.

Circuit Training Protocol: Each circuit comprised exercises focusing on agility, strength, and balance, performed in sequence with minimal rest.

Control Group: Participants followed their regular activities without additional interventions.

RESULTS

The impact of Thera-band and circuit training on psychomotor variables was analysed through pre- and post-test comparisons. The results are summarized in Table 1.

Table 1: Pre- and Post-Test Mean Scores of Psychomotor Variables

Variable	Group	Pre-Test Mean ($\pm$ SD)	Post-Test Mean ($\pm$ SD)	% Improvement	p-Value
Reaction Time (s)	Thera-band Training	0.65 ($\pm$ 0.05)	0.55 ($\pm$ 0.04)	15.4%	< 0.01
	Circuit Training	0.63 ($\pm$ 0.06)	0.50 ($\pm$ 0.03)	20.6%	< 0.01
	Control Group	0.64 ($\pm$ 0.04)	0.63 ($\pm$ 0.03)	1.6%	0.25
Balance (s)	Thera-band Training	8.00 ($\pm$ 0.50)	10.00 ($\pm$ 0.45)	25.0%	< 0.01
	Circuit Training	7.90 ($\pm$ 0.60)	11.50 ($\pm$ 0.50)	45.6%	< 0.01
	Control Group	8.10 ($\pm$ 0.40)	8.20 ($\pm$ 0.42)	1.2%	0.34

Key Findings:

- Reaction time improved significantly in both the Thera-band (15.4%) and circuit training (20.6%) groups, with circuit training showing slightly higher effectiveness.
- Balance improvements were greater in the circuit training group (45.6%) compared to the Thera-band group (25.0%).
- The control group showed negligible changes in all variables.

DISCUSSION

The results of this study demonstrate that both Thera-band and circuit training interventions significantly improved psychomotor variables, particularly reaction time and balance. Circuit training proved to be more effective than Thera-band training in enhancing both reaction time and balance, as evidenced by the greater percentage improvements observed in the circuit training group. The significant reduction in reaction time in both intervention groups aligns with previous studies suggesting that structured training enhances neuromuscular responsiveness (McLeod et al., 2009). Circuit training led to a higher reduction (20.6%) in reaction time compared to Thera-band training (15.4%), which can be attributed to its dynamic and varied nature, requiring rapid responses and adjustments to different exercises (Hoffman, 2002). In contrast, the control group exhibited negligible changes, reinforcing the effectiveness of structured training programs. Balance improvements followed a similar trend, with circuit training demonstrating a more substantial enhancement (45.6%) compared to Thera-band training (25.0%). This aligns with research indicating that circuit training, through its incorporation of multi-joint and compound movements, significantly improves postural control and stability (Davlin, 2004). The minimal improvement observed in the control group suggests that balance does not improve without targeted intervention. Overall, the findings indicate that while both training modalities are beneficial, circuit training appears to be the more effective method for improving psychomotor variables. The results suggest that

integrating circuit training into athletic training and rehabilitation programs could yield superior outcomes in terms of reaction time and balance enhancement.

CONCLUSION

This study highlights the effectiveness of Thera-band and circuit training in improving psychomotor performance, specifically reaction time and balance. Circuit training demonstrated greater efficacy in enhancing these variables, likely due to its dynamic and integrative nature. The control group's negligible improvements reinforce the necessity of structured training interventions. These findings have practical implications for sports scientists, coaches, and rehabilitation professionals, as they provide evidence supporting the implementation of circuit training for optimizing psychomotor functions. Future research should explore long-term effects, different age groups, and other psychomotor attributes to expand on these findings.

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