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Impact of Dhands And Baithaks on Total Body Fat Percentage and Arm Strength of School Boys

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ABSTRACT

The present study aimed to examine the impact of a 6-weeks Dhands and Baithaks training programme on body fat percentage and arm strength among school boys. Thirty (N=30) male students aged from 14 to 16 years from Sri Ramakrishna Mission Vidyalaya Swami Shivananda Higher Secondary School, Coimbatore, Tamil Nadu, participated in the study. The experimental group underwent Dhands and Baithaks training three times per week for a period of six weeks, while the control group received no specific intervention. Arm strength was assessed through handgrip dynamometer, and total body fat percentage was measured via body fat scale. Pre and post-tests data were analyzed by using the dependent 't' test at 0.05 significance level. The results revealed that significant improvement in arm strength and significant reduction in total body fat percentage in the experimental group, while the control group showed no significant changes. These findings suggest that regular participation in Dhands and Baithaks can effectively reduce body fat percentage and enhance arm strength among adolescent boys.

Keywords: Dhands, Baithaks training, Body Fat Percentage, Arm Strength.

Introduction

Physical fitness and body composition are critical indicators of health and performance, especially during the developmental years of school-going boys. With the increasing trend of sedentary lifestyles, traditional forms of physical activity offer a promising alternative to improve fitness and overall health in children and adolescents.

Among these traditional practices, Dhands and Baithaks are time-tested calisthenic exercises rooted in Indian wrestling (kushti) and martial arts training. These exercises are known for enhancing muscular strength, endurance, flexibility, and cardiovascular fitness without the need for modern gym equipment (Ghosh, 2004). They involve rhythmic and repetitive movements that engage large muscle groups, contributing to improved body composition and functional fitness (Singh, 2012).

Regular practice of Dhands and Baithaks can lead to significant adaptations in the musculoskeletal and cardiorespiratory systems. These exercises have been shown to improve parameters such as muscular endurance, agility, coordination, and aerobic capacity (Khan & Joshi, 2015). Additionally, they can influence body composition by increasing lean muscle mass and reducing body fat percentage, thereby promoting a healthier physique in growing children.

Introducing such indigenous physical training methods in school settings may prove effective, economical, and culturally relevant. Understanding their impact on the physical fitness and body composition of school-level boys could provide valuable insights for physical education programming and youth development.

Therefore, the present study aims to investigate the effect of Dhands and Baithaks on body fat percentage and arm strength in school-level boys, with the objective of integrating effective traditional training methods into modern fitness routines.

Methodology

To conduct this study, thirty (control group =15 and experimental group =15) male students from Sri Ramakrishna Mission Vidyalaya Swami Shivananda Higher Secondary School, Coimbatore, Tamil Nadu, were chosen. Their ages ranged from 14 to 16 years. The participants underwent 6 weeks of dhands and baithaks training, with sessions held Three days per week from 4:30 pm to 5: 30 pm. The physical fitness variable namely arm strength was assessed with handgrip dynamometer and body composition variable total body fat percentage was assessed by body fat scale. Pre and post – tests data were analyzed using the dependent 't' - test, with significance at 0.05 level.

RESULTS OF THE STUDY

TABLE-I

COMPUTATION OF 't' RATIO OF PRE AND POST-TESTS SCORES ON TOTAL BODY FAT PERCENTAGE OF EXPERIMENTAL AND CONTROL GROUPS

Group	Test	Mean	SD	DM	σ DM	't'	'P' value
Experimental	**Pre**	24.34	6.75	2.19	0.22	9.92*	0.01
	Post	22.15	6.50				
Control	**Pre**	24.67	9.70	0.38	0.25	1.51	0.15
	Post	25.05	9.93				

*Significant at 0.05 level

The results of the 't'-test for total body fat percentage among school boys revealed significant changes between pre-test and post-test scores in the experimental group. In the experimental group, the mean of body fat percentage decreased from 24.34 (pre-test) to 22.15 (post-test), with a mean difference of 2.19, and standard error of difference between mean of 0.22, and a t-ratio of 9.92, indicating a statistically significant reduction in total body fat percentage. In contrast, with the control group showed an increase in total body fat percentage from pre-test mean of 24.67 to post-test mean of 25.05 with mean difference of 0.38, and standard error of difference between means of 0.25, and 't'-ratio of 1.51. These findings suggest that the dhands and baithaks training had a significant effect in reducing total body fat percentage among school boys in the experimental group.

FIGURE- 1

MEAN DIFFERENCE OF PRE AND POST-TESTS SCORES ON TOTAL BODY FAT PERCENTAGE OF EXPERIMENTAL AND CONTROL GROUPS

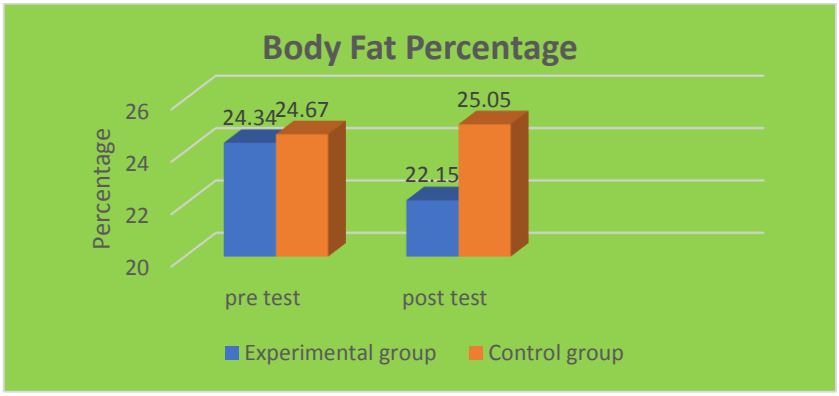


TABLE II

COMPUTATION OF 't' RATIO OF PRE AND POST-TESTS SCORES ON ARM STRENGTH OF EXPERIMENTAL AND CONTROL GROUPS

Group	Test	Mean	SD	DM	σ DM	't'	'P' value
Experimental	**Pre**	13.00	8.51	4.07	0.33	12.31*	0.01
	Post	17.06	8.25				
Control	**Pre**	9.93	4.85	0.07	0.23	0.29	0.77
	Post	9.87	4.64				

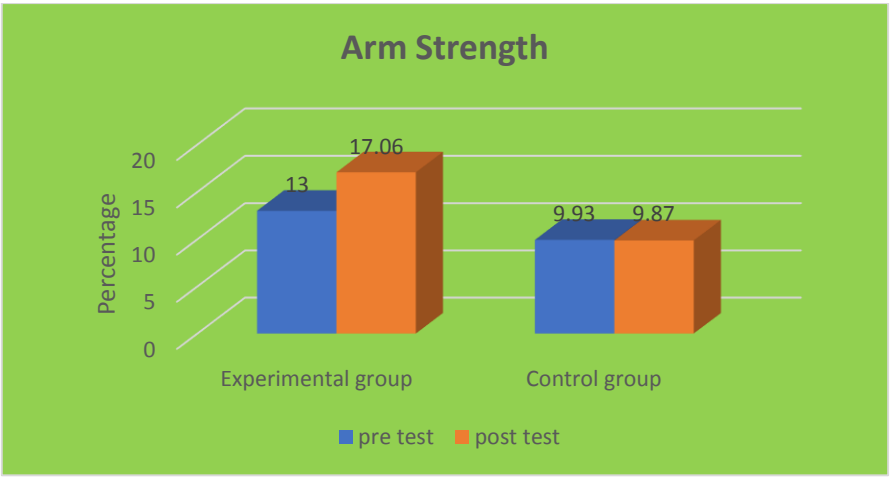
*Significant at 0.05 level

The results of the t-test for arm strength among school boys revealed significant changes between the pre-test and post-test scores in both the experimental and control groups. In the experimental group, the mean of arm strength increased from 13.00 (pre-test) to 17.06 (post-test), with a mean difference of 4.07, and standard error of difference between mean of 0.33, and 't'-value of 12.31, indicating a statistically significant improvement in arm strength. In contrast, the control group showed no improvement in arm strength from pre-test mean of 9.93 to post-test mean of 9.87 with mean difference of 0.07,

and standard error of difference between means of 0.23, and 't'-value of 0.29. These findings suggest that the dhands and baithaks training programme had a significant effect in increasing arm strength among school boys in the experimental group.

FIGURE- 2

MEAN DIFFERENCE OF PRE AND POST-TESTS SCORES ON ARM STRENGTH OF EXPERIMENTAL AND CONTROL GROUPS



Discussion on Findings

The findings of the present study clearly demonstrate the positive impact of a structured Dhands and Baithaks training programme on physical fitness and body composition among school boys. Specifically, the study revealed significant gains in arm strength and a reduction in total body fat percentage following six weeks of consistent practice. These improvements can be attributed to the nature of the exercises themselves—Dhands and Baithaks are dynamic, full-body movements that engage multiple muscle groups simultaneously. Their repetitive execution enhances muscular endurance and strength while stimulating metabolic activity, which may contribute to reduced fat levels.

The increase in upper and lower body muscular strength observed in this study supports the functional benefits of traditional training methods. This aligns with previous research, such as that of Ghosh (2004), who noted the effectiveness of these compound movements in building strength and coordination among athletes.

Overall, the results suggest that integrating Dhands and Baithaks into school fitness routines can be a valuable and culturally rooted approach to improving the physical health of students. These traditional exercises, when performed regularly and with proper technique, offer a practical, equipment-free method for enhancing physical performance and managing body composition.

Conclusions

1. Participation in the six-week Dhands and Baithaks training programme led to enhanced muscular strength in the arms of school boys.
2. The programme also proved effective in decreasing the overall body fat percentage among the participants.

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