

A Comparative Study of Body Composition of Chhau Dancers, Santhali Dancers and Manipuri Dancers

Biplab Mondal,

Assistant Professor, W.B., India

Abstract

Anecdotally it is known that dance has the potential to motivate and excite young people. There are various type and forms of dances prevailing in India. The purpose of this study was to compare the body composition of Chhau dancers, Manipuri dancers and Santhali dancers so as to find practicing which dance among these escort optimal maintenance of percentage body fat. For this 100 subjects of each dance group from target population of West Bengal were randomly selected. Four site Skinfolds measurements from abdomen, Ilium, triceps, and thigh were collected and converted into percentage body fat. ANOVA and LSD post hoc test were employed to find significance of difference between the three groups at 0.05 level. Findings revealed that the Santhali and Chhau dancers were possessed less percentage of body fat than that of Manipuri dancers thus performing these dances led to better maintenance of optimal fat percentage than the performing Manipuri dance.

KEYWORDS: Percentage Body Fat, YMCA Skin Fold Test, Dancers

Introduction

As a physical activity and a creative art form, it is believed that dance can make a significant contribution to the healthy-living agenda. Anecdotally it is known that dance has the potential to motivate and excite young people. It provides an active, non-competitive form of exercise that has potential positive effects for physical health as well as mental and emotional wellbeing. Dance can be a way of engaging young people, especially girls, in physical activity. In India, many Indian style or traditional Indian dances have the significance contribution to many Indians health to maintain their physical fitness. The Chhau Dance, Manipuri Dance and Santhali Dance are worth mentioning Indian traditional dances. The Chhau Dance follows the basic principle of Hindu dance. Chhau dance is prevalent not only in Seraikela but also in the same form or the other in many parts of Orissa and West Bengal. Manipuri one of six dance styles, it is indigenous to Manipuri, the north eastern state of India and the aboriginal people of this valley were said to be the dance expert Gandharva's, mentioned in the epic Ramayana, Mahabharata and other religious scriptures(Sinha, 1919). The Santhal are largest group of Munda people, who live in Bihar, Orissa, West Bengal, and Jharkhand. An important part of their social life is music, dance and singing in turn. Santhali dance is performed separately by men and woman with various body movements before and after the early season, and between showing and harvesting. Fitness is that state which characterizes the degree to which the person is able to function. Fitness is an individual matter; it implies the ability of each person to live most effectively with his potential.

Adiputra (1994) conducted a study on sixty healthy males, adult Balinese, aged from 18 to 22 years old, were studied to estimate the effect of Modern Balinese Baris Dancing Exercise (MBBDE) on body composition, heart rate, and blood pressure at rest. On the basis of physical fitness the subjects were divided into two groups' i.e experimental group and control group. The experimental group had 8 weeks of practicing the MBBDE which consisted of 73-87% of estimated maximum heart rate level, 3 x 50 minutes per week. Significant reductions in fat tissue weight, and percent body fat were found after 8 weeks of exercise. This exercise also significantly reduced systolic blood pressure, diastolic blood pressure, and mean blood pressure at rest. There was also a significant reduction in resting heart rate. So, the researcher concluded that 8 weeks of practicing the MBBDE improved body composition and cardiovascular function as well.

To evaluate the effect of low impact dance training on aerobic capacity, sub maximal heart rates and body composition of college-aged females McCord et.al (1993) selected sixteen women who participated in dance training for 45 minutes at 75-85% of their maximum heart rate, three times per week and for 12 week. They concluded that low impact aerobic dance is as effective as other endurance training regimens in improving cardiovascular fitness and decreasing body fat.

Objective of the study: To compare the Body Composition of Chhau dancers, Manipuri dancers and Santhali dancers.

Methods and Materials

Subjects: Three dances group were purposively selected (Chhau dancers i.e Group-1, Manipuri dancers i.e Group-2 and Santhali dancers i.e Group-3) and only 300 male dancers (100 from each group) out of those were selected randomly as the subjects of this study from the particular population.

Procedure Followed in Measuring Body Composition (% of Body Fat Test by YMCA Skin Fold Test): Purpose: to estimate a person's percent body fat. Objective: to provide a field method of accurately estimating body composition characteristics. Equipment: Skinfolts Calipers. Sites: Skinfolts measurements at the abdomen, Ilium, triceps, and thigh sites with the appropriate procedure were collected. Scoring: convert the skinfold measured to percent body fat by using the requisition $\{\%fat = .29288 * (\text{sum of 4}) - .0005 * (\text{sum of 4})^2 + .15845 * (\text{age}) - 5.76377\}$.

Statistical Techniques: ANOVA was employed to know the significance of difference between the three groups. Later LSD post hoc test to know where exactly the difference lies was employed. Level of significance considered was 0.05.

Results

Table 1: Mean and Standard Deviation of the Body Composition of Three Different Dance Groups

Group	N	Mean	SD
Chhau Dancers	100	10.52	2.83
Santhali Dancers	100	9.77	2.73
Manipuri Dancers	100	12.93	3.58

Table 1 indicate that mean % of body fat of the Santhali dancers is lesser among the three types of dancers; therefore Santali dancers are lean than another two dancers group.

Table 2: Results of the Analysis of Variance between Three Different Dance Groups

	Sum of Squares	df	Mean Square	F	P-Value
Between Groups	544.84	2	272.42	28.89*	0.01
Within Groups	2800.67	297	9.43		
Total	3345.51	299			

*Significant at 0.05 level

Table 2 indicates that 'F' is significant at .05 level between groups. In this study, three separate dance groups were selected to compare the body composition (% of body fat) of the groups. The result of 'F' test indicates that there was significant impact of dance on the body composition (% of body fat) of the groups. Now to know where exactly the difference was present LSD post hoc analysis was done.

Table 3: Pairwise Comparison of Means

Group	Group	Mean Difference	Std. Error	Level of Significance
Chhau	Manipuri	-2.407*	.434	.000
Chhau	Santhali	.753	.434	.084
Manipuri	Santhali	3.160*	.434	.000

*Significant at 0.05 level

To estimate the gain in favor of the groups LSD post hoc test has been made. Table 3 indicates that the effect of dance on the groups of Chhau dancers and Manipuri

dancer's differ significantly at 0.05 level and the difference is in favor of Chhau dancers. In case of comparison between Manipuri and Santhali dancers, the difference between mean is significant at 0.05 level and the difference is in favor of Santhali dancers. The comparison has also been made between Chhau and Santhali dancers but the difference is not significant at .05 level. It was revealed from the result that the difference is in favor of Santhali and Chhau dancers. The result leads to conclude that the Chhau and Santhali dancers are establishing superiority over the Manipuri dancers in case of their average % of body fat.

Recommendations

The National Institute of Health recommends that a healthy adult male's body should have between 8 and 17 percent fat and a female should have 10-21%. Levels significantly above these amounts may indicate excess body fat. Athletes, leaner individuals, and more muscular individuals will have a body fat percentage lower than these levels. In general, most athletes experience greater performance benefits at body fat percentages between 7 and 19 percent for men, and 10 and 25 percent for women, depending on the sport.

Conclusion

By regular dance practice, dancers can maintain their body fat to an optimal level, this three type of dancers have proved it particularly. Santhali and Chhau dancers were possessed less % of body fat than that of Manipuri dancers thus these dances were step ahead in maintenance of optimal fat percentage than the Manipuri dance.

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