



Comparison of fitness variables between sedentary girls and female kathak dancers

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Abstract

Dance is expression of feelings through body movements. Dance is a part of culture of human society. Dance may be of various types like military, religious, festive and so on. Dance may also be classified as folk, classical etc. In India dance is a cultural heritage continuing through ages. Dance is a wonderful fitness work out rejuvenating and refurbishing human body with vigor, fitness and endurance. Dance not only promote physical fitness it has a wide range of positive impact on behavioral setup too. The author being a physical educationist by profession and passionate for dance made up her mind to conduct a research on dance and fitness and very specifically premeditated to compare the health related fitness of sedentary girls and girls involved in regular Kathak dance practice. Kathak is a classical dance form of India involving numerous body movements. It involves turns, twists, rotations and several other body movements converging to sound fitness. As a part of her Ph.D. research in this area the scholar ascertained that the Kathak females are better in fitness variable Cardio respiratory endurance, muscular endurance and body composition than the sedentary girls.

Keywords: fitness, sedentary, kathak

Introduction

Dance is expression of feelings through body movements. Dance is a part of culture of human society. Dance may be of various types like military, religious, festive and so on. Dance may also be classified as folk, classical etc. In India dance is a cultural heritage continuing through ages. Dance is a wonderful fitness work out rejuvenating and refurbishing human body with vigor, fitness and good health. Dance not only promote physical fitness it has a wide range of positive impact on behavioral setup too. Keeping in view the concept of dance as a platform for development of fitness and considering Indian dance as a cultural heritage the scholar premeditated to conduct a research to explore the difference between fitness of sedentary girls and girls regularly involved in Indian classical dance Kathak.

Purpose: The scholar planned to compare the health related fitness of sedentary girls with those of kathak dancers to establish the fact that Indian classical dance has a positive impact on fitness of the dancers.

Significance: The author feels that the findings of her study will benefit the women folk with respect to development of sustainable health related physical fitness.

Methodology: The study is a status study. For accomplishment of the research the scholar randomly collected 30 girls regularly involved in Kathak dance practice from renowned dance academy of Kalyani, and also involved 30 sedentary girls from the lady's hostels of University of Kalyani as volunteers of the study. The scholar initially

collected personal data like age height and weight of the subjects thereafter collected data on health related fitness variables and analyzed the data for drawing inferences.

Table 1

Fitness variables	Name of tests
Cardio respiratory endurance	Step test
Muscular endurance	Ab curl
Muscular Strength	Gripe dynamometer test
Flexibility	Sit and reach test

Apart from the fitness tests mentioned the scholar assessed body fat percent fat mass and lean mass as measures of body composition. Four sites of skin folds were estimated and the variables were calculated with the help of software.

Result and Discussion: Descriptive Statistics of fitness variables of sedentary girls are presented in the table given below.

Table 2: Descriptive Statistics of fitness variables of sedentary girls

Fitness variables	N	Minimum	Maximum	Mean	Std. Deviation
Step test beats/min	30	116	172	148.40	±13.548
Ab curl nos.	30	3	30	23.80	±5.261
Sit and reach cms.	30	7	35	22.47	±6.469
Dynamometer test cms.	30	2	54	32.53	±10.415
Valid N (listwise)	30				

From table 6 it is clear that the mean of fitness tests step test, Ab Curl, Sit and reach test, and Dynamometer test for sedentary girls are 148.40, 23.80, 22.47 and 32.53 and their Sd

are ± 13.54 , ± 5.26 , ± 6.46 and ± 10.41 respectively. In the table 2 the descriptive Statistics of fitness variables of kathak girls are given.

Table 3: Descriptive Statistics fitness variables of kathak girls

Fitness variables	N	Minimum	Maximum	Mean	Std. Deviation
Step test beats/min	30	92	168	126.13	± 23.276
Ab curl nos.	30	30	42	33.13	± 2.862
Sit and reach cms.		12	36	23.63	± 5.696
Dynamometer test cms.	30	20	51	31.03	± 5.762
Valid N (listwise)	30				

From table 2 it is clear that the mean of fitness tests step test, Ab Curl, Sit and reach test, and Dynamometer test for Kathak girls are 126.13, 33.13, 23.63 and 31.03 and their Sd are ± 23.27 , ± 2.86 , ± 5.69 and ± 5.76 respectively. From the data

presented in tables 1 and 2 it is clear that there are differences with respect to means of the scores. To establish the degree of difference between the means inferential statistics were computed with the help of SPSS 16.0 software.

Table 4: Independent samples statistics on fitness between sedentary and Kathak girls

Fitness test		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	Df	Sig. (2-tailed)
Step test	Equal variances assumed	17.862	.000	4.528	58	.000
	Equal variances not assumed			4.528	46.627	.000
Ab curl	Equal variances assumed	2.330	.132	-8.535	58	.000
	Equal variances not assumed			-8.535	44.776	.000
Sit and reach	Equal variances assumed	.012	.913	-.741	58	.461
	Equal variances not assumed			-.741	57.087	.462
Dyanamo metre test	Equal variances assumed	6.499	.013	.690	58	.493
	Equal variances not assumed			.690	45.235	.494

From T test result presented in table 4 it is revealed that there exist significant difference on fitness variables cardio respiratory endurance and muscular endurance. More clearly

speaking the kathak girls are significantly better that the sedentary girls with respect to the fitness variables cardio respiratory endurance and muscular endurance.

Table 5: Descriptive statistics on body composition of sedentary and Kathak girls.

Body composition variables in mm.		Sedentary	Kathak
BF %	Mean	27.70	19.27
	S.D.	4.669	5.132
Fat Mass in kg	Mean	16.70	11.23
	S.D.	5.700	4.651
Lean Mass in kg	Mean	40.90	39.10
	S.D.	6.718	8.531

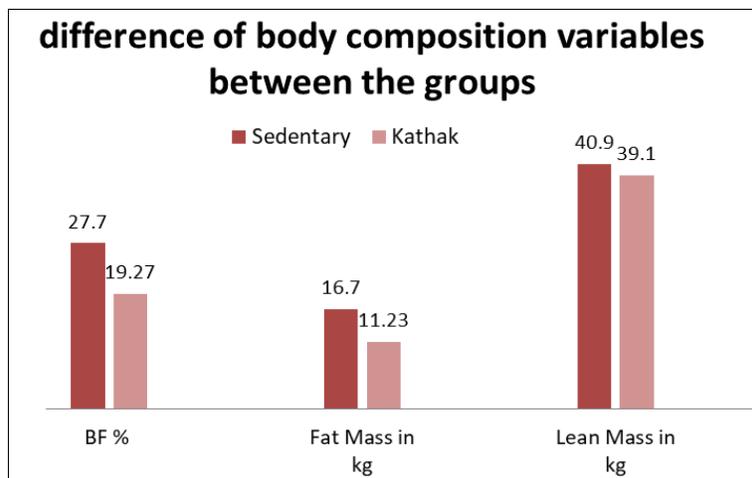


Fig 1: Difference of lean mass fat mass and BF %between Sedentary and Kathak girls

According to descriptive statistics data on body composition presented in table 5 and column chart presented in fig. 1 it is clear that mean for BF % and fat mass of dancer girls are

lower in comparison to those of sedentary. In order to establish the degree of difference between the means independent samples t test was computed.

Table 6: Independent samples statistics on body composition between sedentary and Kathak girls

Body composition variables in mm		Levene' s Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	Df	Sig. (2-tailed)
BF %	Equal variances assumed	.477	.493	6.657	58	.000
	Equal variances not assumed			6.657	57.489	.000
Fat Mass in kg	Equal variances assumed	.632	.430	4.070	58	.000
	Equal variances not assumed			4.070	55.756	.000
Lean Mass in kg	Equal variances assumed	.013	.908	.908	58	.368
	Equal variances not assumed			.908	54.976	.368

From T test result presented in table 6 it is revealed that there exist significant difference on body fat % and fat mass. More clearly speaking the kathak girls are significantly better than the sedentary girls with respect to the body composition variables Body fat % and fat mass.

Conclusion: From the data analysis presented in the write up it is evident that the Kathak dancers are have better Cardio respiratory endurance, Muscular endurance and body composition variables Body fat % and fat mass. Thus it can be concluded that the dancer females are better than the sedentary girls with respect to most of the crucial fitness parameters. As a take home message the author wish to proclaim that Indian classical dance Kathak is a wonderful means of fitness workout which can play a determining role in maintenance and promotion sustainable good health of people.

References

1. Astrand PO, Rodal K. Textbook of Work Physiology Physiological Bases of Exercise. New York: McGraw-Hill Book Company, 1986.
2. Beryger Richard A. Applied Exercise Physiology, (Philadelphia: Lea and Febiger), 1982, 174-175.
3. Chatterjee Arpita. "An analytical discussion on the folk and tribal dance forms of Bengal in relation to their effect on health." Indian Journal of Arts. 2013a; 1(3):29-32.
4. Chatterjee Arpita. "Improved health status through prolonged practice of dance as a therapy – a case study." International Journal of Basic and Applied Medical Sciences. 2013b; 3:1180-183.
5. Choudhary S, Narwal RK. Effect of aerobic exercise on the blood lipid profile in young adults. Indian Journal of Physiotherapy and Occupational Therapy-An International Journal. 2014; 8(2):212-217.
6. Clark David H. Exercise Physiology (Englewood Cliffs, Prentice Hall, Inc.), 1989, 45.
7. Davis JF, Vidyasagar S, Maiya GA. Effect of eight weeks of walking on high density lipoprotein cholesterol. Indian Journal of Physiotherapy and Occupational Therapy-An International Journal. 2014; 8(3):176-181.
8. Fox LE. Edward Sports Physiology (Winston: CBS College Publishing Company), 1986, 261.
9. Ghosh M. The Natyasastra (A Treatise on Ancient Indian Dramaturgy and Histrionics) ascribed to Bharata-Muni (2nd ed.). Granthalaya Private Limited, Calcutta, 1967, 1.
10. Karakoc Y, Duzova H, Polat A, Emre MH, Arabaci I. Effect of training period on haemorheological variables in regularly trained footballers. Br J Sports Med. 2005; 39(2):1-4.