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## Effect of Zumba dance on selected physical fitness of school girls

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### Abstract

This study was investigated the impact of Zumba dance on selected physical fitness of school girls. To achieve the purpose of the study 40 school girls were selected from Sri Saratha Vidyalaya higher secondary school Salem. The subjects were randomly assigned to two equal groups (n = 20). Group - I underwent Zumba dance practice (ADWYG) and group - II was acted as control group (CG). The Zumba dance was given to the experimental group for 3 days per week (Monday, Wednesday and Friday) for the period of twelve weeks. The control group was not given any sort of training except their routine work. The physical parameters of flexibility (set and reach test) and muscular strength (modified setups) before and after training period. The data collected from the subjects was statistically analyzed with 't' test to find out significant improvement if any at 0.05 level of confidence. The result of the present study Zumba dance significantly improved selected physical fitness of school girls.

**Keywords:** Zumba dance, body composition and VO<sub>2</sub> max

### Introduction

People are increasingly aware of the benefits of various policies and regular exercise and physical activity programs as a result of actions and campaigns aimed at developing a more active and healthier lifestyle. Physical activity is fundamental to maintaining life functions and is an essential part of having a healthy lifestyle because it has been proven in many studies to have a protective role against cardiovascular disease, metabolic disorders, skeletal disorders and even mental development (Vendramin *et al.*, 2016) <sup>[1]</sup>.

The Zumba fitness is a new kind of dance workout, inspired by Latin American music and Latin American dances. The exercise combines the basic of dance merengue, salsa, samba, cumbia, reggaeton and other Latin American dances, uses basic aerobic steps, but also enriches their composition of the other dance like hip-hop, belly dancing, Indian, African dance, etc. It is fusion of basic principles of aerobic interval training and strengthening exercises which promote consumption of calories, improve cardiovascular system and strength of the whole body (Perez & Greenwood-Robinson, 2009) <sup>[2, 11]</sup>.

This modern approach of fitness exercising satisfies goals such as harmony of the body, improving posture and strengthening bone-joint segments of the locomotor's apparatus (Furjan-Mandić, Kosalec, & Vlašić, 2011). Group fitness exercises represent the form of programmed physical activity to improve health and change body shape. The Zumba fitness is a new kind of dance workout, inspired by Latin American music and Latin American dances. The exercise combines the basic of dance merengue, salsa, samba, cumbia, recreation and other Latin American dances, uses basic aerobic steps, but also enriches their composition of the other dance like hip-hop, belly dancing, Indian, African dance, etc.

It is fusion of basic principles of aerobic interval training and strengthening exercises which promote consumption of calories, improve cardiovascular system and strength of the whole body (Perez & Greenwood-Robinson, 2009) <sup>[2, 11]</sup>. This modern approach of fitness exercising satisfies goals such as harmony of the body, improving posture and strengthening bone-joint segments of the locomotor's apparatus. This is very important from the aspect of maintaining interest for continuous exercise, since the main reason for leaving the group fitness program is monotony of each training session in long term of practicing (Stoiljković *et al.*, 2010) <sup>[12, 13]</sup>.

### Methodology

In this study the selected 40 school girls selected from Sri Saratha Vidhayalaya higher secondary school Salem. The subjects were randomly assigned in to two equal groups namely, Zumba Dance group (ZDWYP) (n = 20) and Control group (CG) (n = 20). The respective training was given to the experimental group the 3 days per weeks (alternate days) for the training period of twelve weeks. The control group was not given any sort of training except their routine. The evaluated physical parameters were flexibility was assessed by sit and reach test and the unit of measurement was in centimetres, muscular strength was assessed by modified sit-ups and the unit of measurement was in counts. The training programme was lasted for 60 minutes for session in a day, 3

days in a week for a period of 12 weeks' duration. These 60 minutes included 10 minutes warm up, Zumba dance for 25 minutes and Yoga practice for 25 minutes and warm down. The equivalent in Zumba dance is the length of the time each action in total 3 days per weeks (Monday, Wednesday and Friday).

### Statistical analysis

The collected data before and after training period of 12 weeks on the above said variables due to the effect of Zumba dance was statistically analyzed with 't' test to find out the significant improvement between pre and posttest. In all cases the criterion for statistical significance was set at 0.05 level of confidence. ( $P < 0.05$ ).

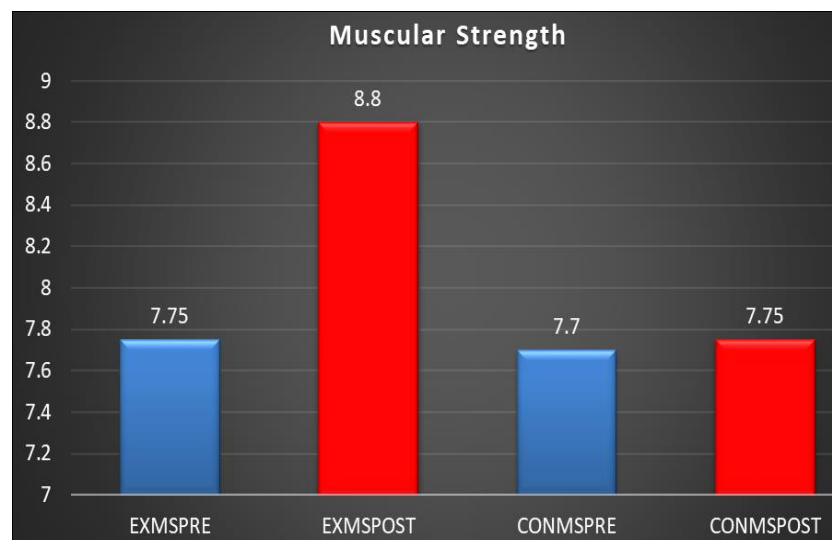
**Table 1:** Computation of 't' ratio on selected parameters on experimental group and control group. (Scores in numbers).

Group	Variables	Mean	N	Std. Deviation Pre	Std. Deviation Post	T ratio	
Experimental group	Flexibility	Pre-test	6.25	20	1.11	1.05	2.63*
		Post-test	6.45	20			
	Muscular strength	Pre-test	7.75	20	0.85	0.89	21.00*
		Post-test	8.80	20			
Control group	Flexibility	Pre-test	5.70	20	1.03	1.05	1.71
		Post-test	5.55	20			
	Muscular strength	Pre-test	7.70	20	16.31	17.34	1.37
		Post-test	7.75	20			

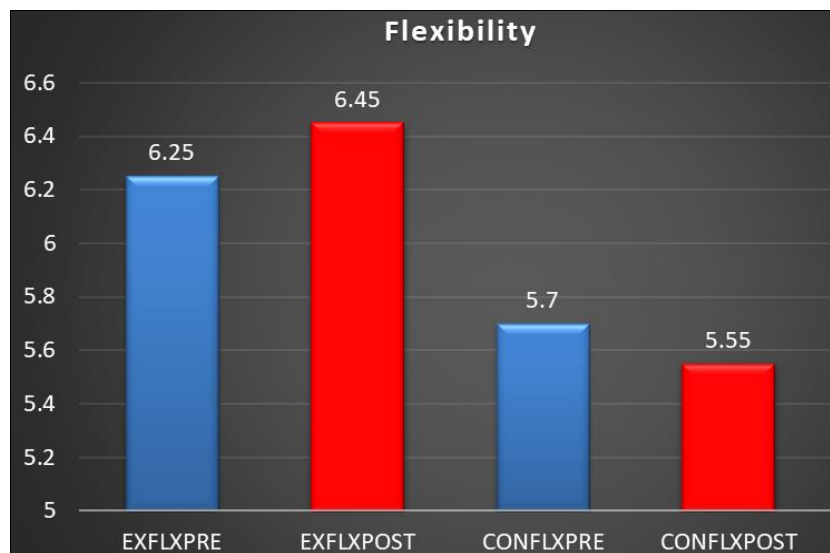
\*Significant level 0.05 level degree of freedom (2.09, 1 and 19).

Table 1 reveals the computation of mean, standard deviation and 't' ratio on selected Flexibility and Muscular strength experimental group. The obtained 't' ratio on Flexibility and Muscular strength were 2.63 and 21 respectively. The required table value was 2.09 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and 't' ratio on Flexibility and Muscular strength control group. The obtained 't' ratio on Flexibility and Muscular strength were 1.71 and 1.37 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were lesser than the table value it was found to be statistically not significant.



**Fig 1:** Bar diagram showing the mean value on Muscular Strength of School Girls on Experimental and Control group (Scores in numbers).



**Fig 2:** Bar diagram showing the mean value on Flexibility of School Girls on Experimental and Control group (Scores in numbers)

### Discussion and Findings

The present study experimented the effect of Zumba dance training with yoga on physical parameters of school girls. The result of the study shows that the Zumba dance training improved the Flexibility and Muscular strength. The findings of the present study had similarity with the findings of the investigations referred in this study. However, there was a significantly changes of subjects in the present study the Flexibility and Muscular strength was significantly improved of subject in the group may be due to the in Zumba dance. Dance development can be multidimensional among individuals and brings about positive improvements when individuals dance as a sportive activity or physical activity. Numerous studies emphasize physiological and psychological benefits of dancing (Hackney and Earhart, 2010; Hanna, 2010; Huddy and Stevens, 2011; Zitomer and Reid, 2011) [20, 21, 24]. It was found that hopelessness levels of the university students who danced decreased (Bastug and Demir, 2010) [27]. Minton (2003) reported that students who received dancing classes had more abstract and creative thinking skills compared to those who did not receive dancing courses. Fonseca *et al.* (2014) observed that ballroom dancing brought perceptual benefits for those who practiced it. Krampe (2013) [7] found that dance-based therapy was mildly or moderately effective in several components of balance and mobility. It was identified that motivation, self-confidence, body language, dancing related self-sufficiency and dance performances improved positively (Tokinan and Bilen, 2011) [5]. In a study on concentration, it was observed that concentration levels and feeling-states improved significantly over sessions of both yoga and aerobic exercise sessions equally. Aerobic exercise and yoga both produce positive changes in concentration, stress, energy, and well-being while only yoga produces improvements in mood and self-satisfaction (Dolde, 2011) [6]. Dancing, playing games, painting, and singing by the children support growth as well as play a key role in brain's learning skills and improve all of the senses.

### Conclusions

It was concluded that 12 weeks twelve weeks Zumba dance practice significantly improved the Flexibility and Muscular strength of school girls.

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