

A Comparative Study on Balance and Flexibility between Dancer and Non-Dancer Girls

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Abstract: Dance is a form of art that normally involves rhythmic movement of the body and accompanied with music. Movement of human body while performing dance can become a significant medium for communication, feelings and emotions. It embraces movement, creation and performance. Dance helps to extend the limits of human physical ability, expressiveness and spirit. When it comes to health dance can be a very effective way of establishing a lasting healthy living. Anecdotally it can be said that dance potentially motivate and excite young people. Dance is a non-competitive form of exercise which has positive effects on physical and mental health. Young girls can be engaged in physical activity through dance. The author being a dancer in fervor and passion as well as an aspirant of the profession Physical Education strived to conduct the study bearing the title “**A Comparative Study on Balance and Flexibility between Dancer and Non-Dancer Girls**”. The researcher selected 30 girls who are regularly involved in Dance and 30 girls who are non-dancer or rather sedentary on the basis of purposive stratified random sampling from Bidhan Govt. Girl’s School, Dist. Nadia West Bengal as the subjects of her study. She incorporated Sit and Reach test and Stork Stand Balance tests for assessment of Flexibility and Balance respectively. With respect to data analysis initially descriptive statics like mean SD and range and further paired sample T test was conducted to ascertain the degree of difference between the means with the help of SPSS soft ware. Data analysis proved significant difference between the Dancer and Non-Dancer girls both with respect to flexibility and Balance. In both the cases the Dancer girls proved to be better though the differences were not statistically significant. Thus the author arrived at the conclusion that dance involving passion, strength, stamina, enthusiasm, rhythm, amusement and many more could be a wonderful fitness activity similar to other fitness activities like jogging, running, cycling, swimming etc.

Key words: Dance, Flexibility, Balance, Dancer, Non-Dancer.

I. Introduction

General Introduction: Dance is a form of art that normally involves rhythmic movement of the body and normally accompanied with music. When it comes to health dance can be a very effective way of establishing a lasting healthy living. Young girls can be engaged in physical activity through dance. Vigorous dance which does not associate any particular form or rhythmic movements can attribute to better health and well being.

Effects of Dance: Effects of dancing on physical fitness are normally positive. Recent research shows that females benefit more psychologically and physically from dance considering it as a physical exercise. Positive effects have been observed in various areas like flexibility, strength and endurance. Recent studies have shown that dance fitness workout can increase the heart rate up to 65-85 percent. Dancing not only beneficial for cardiovascular health it also helps shape the body and weight loss.

Flexibility

Dancing requires a great amount of flexibility. Dancers must strive to achieve full range of motion for all the major muscle groups. Most forms of dance require dancers to perform moves that require bending and stretching, so dancers naturally become more flexible by simply dancing.

Strength

Strength is defined as the ability of a muscle to exert a force against resistance. Dancing builds strength by forcing the muscles to resist against a dancer's own body weight.

Endurance

Endurance is the ability of muscles to work hard for increasingly longer periods of time without fatigue. Regular dancing is great for improving endurance, especially vigorous dancing such as line and ballroom dancing.

Sense of Well-Being

Dancing is a social activity. Dancing provides many opportunities to meet other people. Joining a dance class can increase self-confidence and build social skills. As physical activity reduces stress and tension, regular dancing gives an overall sense of well-being.

Dance Education

As quality educational dance is a forum for collaboration between teachers and students through all learning domains, it is a site for deep learning for everyone. Teaching dance can be potentially rewarding yet challenging. When students fill space with movement creations that they have developed, their sweat, smiles, and pride convey a job well done! A good physical education program cannot be well balanced if it does not include essential elements of dance as part of its integral curriculum.

Purpose of Study:

1. The main purpose of my study is to find out the differences on flexibility and Balance between Dancer and Non-Dancer girls.
2. To find out the contribution of Dance with respect to the fitness components like balance and flexibility.

Statement of problem:

The author being a dancer in fervor and passion as well as an aspirant of the profession Physical Education strived to conduct the study bearing the title “**A Comparative Study on Balance and Flexibility between Dancer and Non-Dancer Girls**”.

II. Methods and Materials:

Selection of Subjects: The researcher selected 30 girls who are regularly involved in Dance and 30 girls who are non-dancer or rather sedentary on the basis of purposive stratified random sampling from Bidhan Govt. Girl's School, Dist. Nadia West Bengal as the subjects of her study.

Instruments used:

- Stop watch
- Sit and Reach table
- Measuring tape
- Clapper

Design of study: The total was conducted in 4 days. 2 days were required for conducting the tests for a single group. The procedures for conducting the tests are as follows:

The scholar incorporated Sit and Reach test and Stork Stand Balance tests for assessment of Flexibility and Balance respectively.

Procedure for Stork Stand Test:

- The subject warms up for 10 minutes
- The subject stands comfortably on both feet with their hands on their hips
- The subject lifts the right leg and places the sole of the right foot against the side of the left kneecap. The assistant gives the command “GO”, starts the stopwatch and the athlete raises the heel of the left foot to stand on their toes
- The subject is to hold this position for as long as possible. The assistant stops the stopwatch when the athlete's left heel touches the ground or the right foot moves away from the left knee. The assistance records the time
- The subject rests for 3 minutes. The athlete stands comfortably on both feet with their hands on their hips. The athlete lifts the left leg and places the sole of the left foot against the side of the right kneecap. The assistant gives the command “GO”, starts the stopwatch and the athlete raises the heel of the right foot to stand on their toes. The athlete is to hold this position for as long as possible. The assistant stops the stopwatch when the athlete's right heel touches the ground or the left foot moves away from the right kneecap.
- The assistance records the time

The Sit and Reach Test is conducted as follows:

- The subject warms up for 10 minutes and then removes their shoes.
- The assistant secures the ruler to the box top with the tape so that the front edge of the box lines up with the 15cm (6 inches) mark on the ruler and the zero end of the ruler points towards the athlete.
- The athlete sits on the floor with their legs fully extended with the bottom of their bare feet against the box.
- The athlete places one hand on top of the other, slowly bends forward and reaches along the top of the ruler as far as possible holding the stretch for two seconds.
- The assistant records the distance reached by the athlete's finger tips (cm).
- The athlete performs the test three times.
- The assistant calculates and records the average of the three distances and uses this value to assess the athlete's performance

III. Result and Discussion:

In this phase of the project report the tables of statistical calculations and related discussion have been presented:

Initially descriptive statistics was computed to calculate the Mean and S.D. of the different variables, and further paired sample T test was conducted to ascertain the degree of difference between the means with the help of SPSS soft ware. Data analysis proved significant difference between the Dancer and Non-Dancer girls both with respect to flexibility and Balance.

Table no. 1 shows the Mean and S.D. of the fitness variables Balance and Flexibility for both the Dancer and Non-Dancer groups.

		N	Mean	Std. Dev.
Balance	Non Dancer	30	10.74	15.329
	Dancer	30	18.14	18.065
	Total	60	14.44	17.025
Flexibility	Non Dancer	30	3.83	4.221
	Dancer	30	5.25	4.162
	Total	60	4.54	4.216

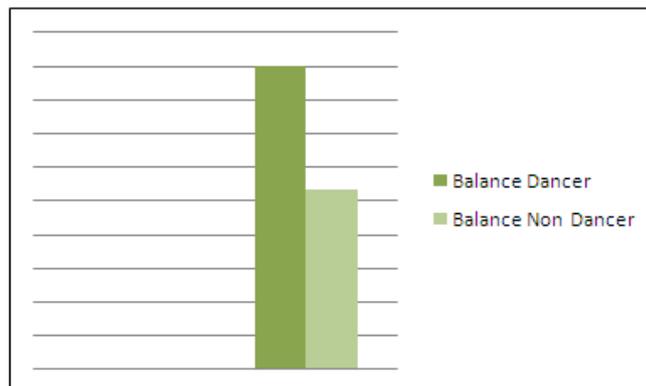


Fig. 1 shows the difference on balance between Dancer and Non-dancer girls

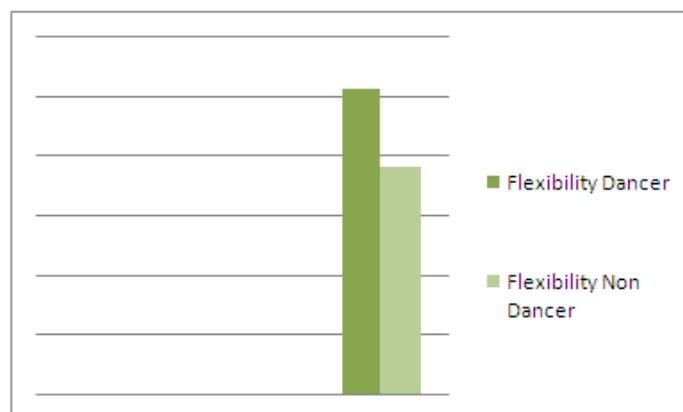


Fig. 2 shows the difference on flexibility between Dancer and Non-dancer girls

It is clear from figure 1 and 2 that there is reasonable difference between Dancer and Non-Dancer girls with respect to both the fitness variables balance and flexibility, though the difference was statistically not significant. Anova was computed to locate the degree of difference between the means.

Table 2 shows the Analysis of variance between the Dancer and Non-Dancer girls.

		Sum of Squares	Df	Mean Square	F	Sig.
Balance	Between Groups	822.436	1	822.436	2.930	0.092
	Within Groups	16278.181	58	280.658		
	Total	17100.617	59			
Flexibility	Between Groups	29.963	1	29.963	1.706	0.197
	Within Groups	1018.921	58	17.568		
	Total	1048.884	59			

The table shows no significant difference on the variables between the Dancer and Non-dancer girls. According to descriptive statics the variables show difference which is clear from mean values presented in table no.1 and also the bar diagram presented in fig.1 and 2. According to the analysis of variance presented in table no. 2 it is somehow clear that the difference are not statistically significant but in case of dance the F value is 0.092 which is quite closer to 0.05 level. Thus it is somehow clear from the above discussion that dance obviously have some positive impact on the fitness variables balance and flexibility. Jumping is an integral part of most dance performances and involves the use of both muscular strength and elasticity. Studies report that plyometric (jump) training has been shown to have a positive effect in dancers. However, there are warnings that plyometric training must be approached gradually and systematically to avoid injury. A good starting point is to design exercises in which dancers are encouraged to jump in a neutral position without emphasizing artistic skill, but instead simply focusing on jumping higher. Once the dancers have gained greater understanding of how to elevate themselves, they can bring correct dance technique back into the movements while trying to maintain as much height as possible”. An Italian study in 2006 has shown that dance is a very good exercise for heart patients compared to other aerobic exercises like cycling. This may be partly because the patients enjoyed it much more

IV. Summary, conclusion recommendations.

Thus the author being a dancer in fervor and passion as well as an aspirant of the profession Physical Education, under the supervision of Dr. Saikot Chatterjee (the first author) strived to conduct the study bearing the title “**A Comparative Study on Balance and Flexibility between Dancer and Non-Dancer Girls**”. The findings of the study throw light on the fact that though there is no significant difference between Dancer and Non-Dancer girls with regard to the fitness components Balance and Flexibility the F value for balance was nearer to the significant value.

Conclusion: Dance obviously has some positive impact on health fitness and well being of an individual.

Recommendations: Based on the research findings the scholar proposed the following recommendations:

1. Dance is a good fitness activity for house wives or working women not only for women but for men too.
2. Dance should be included as a compulsory physical activity in the school physical Education curriculum.
3. Enlarged research studies may be conducted to assess the impact of dance practice on the various physical and physiological system of the body.

References:

- [1]. Angioi M, Metsios GS, Twitchett E, Koutedakis Y, Wyon M. Association between selected physical fitness parameters and esthetic competence in contemporary dancers. *J Dance Med Sci.* 2009;13(4):115-23.
- [2]. Brown, William M., Lee Cronk, Amy Jacobson, Keith Grochow, C. Karen Liu, Zoran Popovic, and Robert Trivers. 2005. *Nature* 438: 1148-1150.
- [3]. Berardi GM. *Finding balance: Fitness, Training and Health for a Lifetime in Dance* (2nd ed). New York: Routledge, 2005.
- [4]. Cohen A. Dance – aerobic and anaerobic. *JOPERD.* 1984 Mar;55:51-3.
- [5]. Dahlstrom M, Inasio J, Jansson E, Kaijser L. Physical fitness and physical effort in dancers: a comparison of four major dance styles. *Impulse.* 1996;4:193-209.
- [6]. Fredrik Ullén, Lea Forsman, Örjan Blom, Anke Karabanov och Guy Madison. Intelligence and variability in a simple timing task share neural substrates in the prefrontal white matter. *The Journal of Neuroscience,* 16 April 2008.
- [7]. 15. Grossman G, Wilmerding MV. The effect of conditioning on the height of dancer’s extension in à la seconde. *J Dance Med Sci.* 2000;4(4):117-21.
- [8]. Koutedakis Y, Sharp NCC. *The Fit and Healthy Dancer.* Chichester: Wiley, 1999.
- [9]. Koutedakis Y. Fitness for dance. *J Dance Med Sci.* 2005;9(1):5-6.
- [10]. 6. Rafferty S, Redding E, Irvine S, Quin E. The effects of a one-year dance-specific fitness training program on undergraduate modern dance students: an experimental study. Abstract. *J Dance Med Sci.* 2007;11(1):16.
- [11]. Redding E, Wyon M. Strengths and weaknesses of current methods for evaluating the aerobic power of dancers. *J Dance Med Sci.* 2003;7(1):10-6.

- [12]. Rimmer JH, Jay D, Plowman SA. Physiological characteristics of trained
- [13]. Shell CG (ed). *The Dancer as Athlete: the 1984 Olympic Scientific Congress Proceedings*, vol. 8. Champaign, IL: Human Kinetics, 1984.
- [14]. Wyon M, Redding E. Physiological monitoring of cardiorespiratory adaptations during rehearsal and performance of contemporary dance. *J Strength Condit Res.* 2005;19(3):611-14.
- [15]. 10. Wyon M. Cardiorespiratory training for dancers. *J Dance Med Sci.* 2005;9(1):7-12. dancers and intensity level of ballet class and rehearsal. *Impulse.* 1994;2:97-105.