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IMPACT OF YOGIC PRACTICES AND AEROBIC DANCE ON SPECIFIC HEALTH-RELATED PARAMETERS IN FEMALE BASKETBALL PLAYERS

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Abstract:

The present study sought to control the effect of aerobic dance programs and meditation on basketball players' oxygen consumption. The education aims to create a program of aerobic yoga and dance practices and evaluate its effectiveness in improving fitness-related health factors. The study included 45 female basketball players from Umayal Ramanathan College for Women in Karaikudi, Tamil Nadu, and Alagappa University's Physical Education College. From these, three groups were created: the aerobic dance group, the yoga classes group, and the control organization. Exercises of increasing complexity were part of the eight-week training program, which was designed to improve cardiorespiratory endurance. As the weeks go by, the program gets increasingly complex. Cardiorespiratory endurance was evaluated using established testing methods both before and after the training session. The experiment group's cardiovascular resistance significantly improved when compared to the baseline group, according to the data. Additionally, the trial group's surge in respiratory endurance was of statistical importance. The "t" test alongside the analysis of covariance (ANCOVA) was used to analyze the data. The Scheffe post-hoc test was utilized to determine the gap between the paired descriptions whenever the "F" ratio of the changed post-test methods was significant. In every instance, the belief level was set at 0.05.

Keywords: Yogic Practices, Aerobic Dance, Cardiorespiratory resistance

INTRODUCTION:

Yoga has a long history. All Indian philosophical traditions have acknowledged the significance of psychic achievement over time. Undoubtedly, yoga's core principles have been taken into account for human spiritual advancement. It is reasonable to wonder how yoga relates to sports instruction and because doing so will not detract from yoga's greatest potential. Therefore, it is essential to first understand the principles of exercising and fitness instruction. These two words give the full meaning of the word “Yoga”. Yoga places great importance on balance, flexibility, and mental discipline, which are all essential elements in a sport. Simple yoga exercises are a great way to warm up before practicing with a ball or to relax after a match. Special exercises include postures such as the front leg rollout bed. In this case, players sit with their legs as wide as possible. Then they rolled over and placed their hands on the ground. They hold this stretch for 15 seconds then return to the top. They do this about 10 to 15 times. In this case, the hamstrings and calf muscles are stretched, making the task easier. This is a great yogic practice that you can start doing (Iyengar, 2001).

A fascinating approach that has emerged in recent years is the use of music to accompany a sequence of rhythmic calisthenic motions known as aerobic dancing. Dancing aerobically is essential for a strong cardiovascular system [1]. To put it briefly, aerobic dancing is a prolonged exercise that doesn't involve the production of oxygen in the muscles. This kind of dancing puts an excessive amount of strain on the heart and lungs, making them work more than they would at rest [2]. "Spirit" signifies "aerobic." One kind of exercise where the quantity of oxygen required and the amount of oxygen consumed is equal is aerobic dancing (Sorensen and Jackie, 1972).

Basketball requires a lot of physical effort from the individual athlete. This requires speed and physical reflexes, strong muscular support of the legs, and a lot of endurance. As the game progresses in its playing techniques, the

physical demands necessary for team success increase proportionately. Good conditioning based on healthy training habits is a primary condition for effectiveness. The body-oriented field of physical education is founded on scientific facts and ideas. Exercise's therapeutic usefulness, the psychological consequences of involvement, the societal ramifications, and the mechanical efficiency of motor skills, the physiological effects of activity, and the aesthetics of movement are all covered. The biological, physiological, psychological, and sociological facets of growth and development are taken into consideration when developing a physical program.

Although wealth can be inherited and passed down, health must be earned through good daily habits. Health is defined as a state of being physically fit, mentally sharp, professionally sound, emotionally balanced, and spiritually enriched, rather than just free from disease. One of the most crucial components of health-related fitness is an individual's aerobic capacity, also known as their cardiovascular endurance. Aerobic capacity is the ability to efficiently take in, transport, and use oxygen. Because aerobic fitness involves so many vital organs and systems, it provides valuable information about the state of these systems and overall health, so when aerobic fitness is high, both physical and mental health is improved. Walking, swimming, running, rowing, stair climbing, bicycling, snowshoeing, step and dance exercises, roller skating, and the more ongoing forms of tennis, racquetball, and squash are common examples of aerobic exercise. Aerobic exercise is any rhythmic activity that is sustained for an extended period of time and uses large muscle groups.

Strengthened bones, ligaments, and tendons; increased circulation and respiration; decreased risk of heart disease; improved fat metabolism and weight loss; improved self-concept, body image, and emotional stability are all advantages of aerobic exercise and fitness. Because aerobic fitness increases capacity and adaptability [3], it can prolong your life, not merely add years to it.

Engaging in regular physical activity enhances about fifty distinct physiological, metabolic, and psychological facets of human existence.

Women and men of all ages benefit from moderate levels of physical exercise, according to the most current surgeon general's report on physical activity and health. Physical activity does not have to be intense to have positive health effects.

LITERATURE REVIEW

To optimize caloric output and enhance cardiovascular endurance, the aerobic and zumba training is a dance fitness regimen that combines some of the fundamental ideas of interval, resistance, and plyometric training. These days, aerobic and zumba are popular forms of exercise, particularly among women, because of their calming dance moves and upbeat music. This study, which was conducted at Step up Fitness Center, aims to demonstrate the effects of twelve weeks of aerobic and zumba training on middle-aged women's cardiovascular endurance. In order to accomplish the study's goals, thirty participants were chosen and split into two equal groups [4]: AT and zumba training (ZT). To determine the groups' significant differences, ANCOVA was employed.

The range of motion that exists in a joint or set of joints, or the capacity to move joints efficiently across their full range of motion, can be characterized as flexibility. Different joints in our body may have varying degrees of flexibility or range of motion. Age and the strength training we do determine the overall health of our muscular system. Naturally, as we age, our muscles lose size and strength and become less flexible and rigid [5]. This may limit our range of motion around our joints, which could cause our muscles and joints to become tight. Any exercising that creates perspiration, makes breathing more difficult, and causes our heart to beat more quickly than it would at rest is considered an aerobic dancing exercise. Our cardiovascular system is trained to handle and distribute oxygen throughout our body more rapidly and effectively by aerobic dance, which also strengthens our heart and lungs. Our vast muscle groups are used in aerobic dance, which is rhythmic and sustained for at least 10 minutes.

In general, women favour physical traits that are more appealing, feminine, and desirable. Therefore, women prefer to prioritize fat or weight loss above lean body mass while following a physical fitness regimen, which may be a result of gender stereotypes. Even though different parts of our bodies contribute to weight gain or loss, a complete reduction in body fat does not necessarily indicate that our body composition is optimal. To create the optimum body physique, our bodies require the proper ratios of body water, muscles, and fat. For women between the ages of 40 and 59 [6], the optimal fat percentage is between 23 and 33 percent. Women are more likely than men to gain weight quickly without exercising because they have 6–11% more body fat than men and because hormonal changes make it difficult for the fat to be burned off. Body fat acts as an insulator to shield organs from heat, absorb vitamins and minerals, store energy, and more.

The organic instrument of yoga, as a psychological body exercise, probably consists of additional parts. A certain amount of the influence is linked to additional forms of physical activity. Yoga is generally regarded as a direct or low-force workout. Exercise has been shown to improve respiratory adaptability, cardiovascular capacity,

muscle strength, metabolism, and immune system function [7]. Yoga's emphasis on relaxation in both static and dynamic actions distinguishes it from ordinary exercise. Yoga aims to coordinate the body and mind through the intentional contraction and relaxation of muscles in supported groupings, the modification of breathing patterns, and the development of mental awareness and mindfulness throughout the training process. Participants in yoga must actively participate. As a result, it is reasonable to assume that variables such subject age, sex, and yoga motivation will affect the outcomes. Research on this topic is appealing since yoga training is increasingly being incorporated into routine projects for a wide range of diagnoses, from "major depression or some other type of diagnosed depression" to "elevated depressive symptoms." Physical fitness is to raise people's knowledge, passion, and interest in physical well-being, all of which will contribute to a healthier lifestyle. A person's speed, strength, endurance, and agility—factors that contribute to physical efficiency—should also be taken into account. t's unclear how different aerobic exercise intensities affect psychological health. However, the vast majority of studies show that aerobic exercise has comparable psychological effects on participants who engage in moderate-, vigorous-, or moderate-and-vigorous levels of exercise [8]. The impact of low-impact aerobic dancing exercise on physiological and psychological well-being variables, including the commonly researched physical and general self-esteem, stress level, heart rate, and blood pressure, was the focus of this study. Running is the subject of a large portion of the exercise literature on psychological stress, but little is known about the potential psychological advantages of other forms of exercise. The question of whether exercise and stress response are causal or associative. They discovered parallels between jogging and swimming, as well as comparable psychological effects from each activity.

The force that circulating blood applies to blood vessel walls is known as blood pressure (BP). Systolic and diastolic pressures, which represent the greatest and minimum pressures, respectively, are the two metrics used to express blood pressure. A systolic blood pressure of less than 120 mmHg and a diastolic blood pressure of less than 80 mmHg are considered normal for people. Blood pressure fluctuations during sleep, activity, excitement, or anxiety are common [9]. It is typical to anticipate an increase in blood pressure during physical activity. As people age and gain weight, their blood pressure often rises. While older teens' blood pressure ranges similarly to that of adults, infants frequently have very low blood pressure, which is regarded as typical for neonates.

METHODS AND MATERIALS:

The cardio benefits, calorie burning, muscular toning, balance enhancement, social connection, and psychological health benefits of the exciting and well-liked Zumba program are underlined. Additionally, an examination of the ancient practice of yoga is provided, emphasizing its advantages for enhanced attention, joint health, strength, mobility, unwinding, anxiety reduction, and spiritual self-awareness [10]. For those seeking overall well-being, knowing the various advantages of these activities offers insightful information [Figure 1].

Weight management

Running, swimming, and other cardiovascular exercises raise heart rates and work big muscle groups, which results in calorie expenditure. Higher duration and intensity of exercise are associated with higher calorie burn. Cardio also encourages the use of fat as fuel for exercise, which helps people lose weight when their caloric expenditure exceeds their intake. The body keeps burning calories during recovery after activity. Regular cardiovascular activity increases metabolism, maintains muscular mass, and improves resting calorie burn. Cardio may affect hunger hormones, but it's important to understand that focused fat loss is not feasible [11]. A complete strategy that incorporates cardio, a balanced diet, a variety of workouts, and individualized fitness plans that take into account individual differences is necessary for effective weight management.

Exercises on lung capacity

Biking and running are cardiovascular exercises that improve breathing patterns, increase oxygen intake, and activate lung air sacs (alveoli), all of which have a good effect on respiratory and general lung health. These exercises improve the efficiency of breathing and exhalation by strengthening the respiratory muscles. Frequent aerobic exercise helps the respiratory system better handle the body's increased oxygen demands by adjusting it to them. Increased peak utilization of oxygen (VO2 max) and better aerobic fitness are two benefits of aerobic exercise's improved oxygen use. One important advantage is the controlled and effective breathing that cardio encourages, particularly during exercises like yoga or pilates [12]. All things considered, cardio greatly increases lung strength and efficiency, guaranteeing a consistent flow of oxygen for all body functions.

Boosting endurance and vitality

Physical endurance is significantly impacted by engaging in aerobic activities like cycling or running. First of all, it makes the heart more efficient, which guarantees that muscles get enough oxygen, greatly increasing general stamina. Second, aerobic exercises increase muscle energy generation by stimulating the mitochondria, which are the cellular powerful sources that prolongs endurance during extended activities. By encouraging the endurance

of particular muscle fibers and aiding in the elimination of waste materials like lactic acid, cardio also delays muscular exhaustion. Muscles with more capillaries have better oxygen and nutrient delivery, which promotes aerobic energy generation and, in turn, increases endurance. In addition to its physical advantages, regular cardio helps people feel less exhausted during daily activities and exercise [13], which give them the strength to tackle physical obstacles. Cardio maximizes muscle function, allowing for extended activity without experiencing undue weariness.

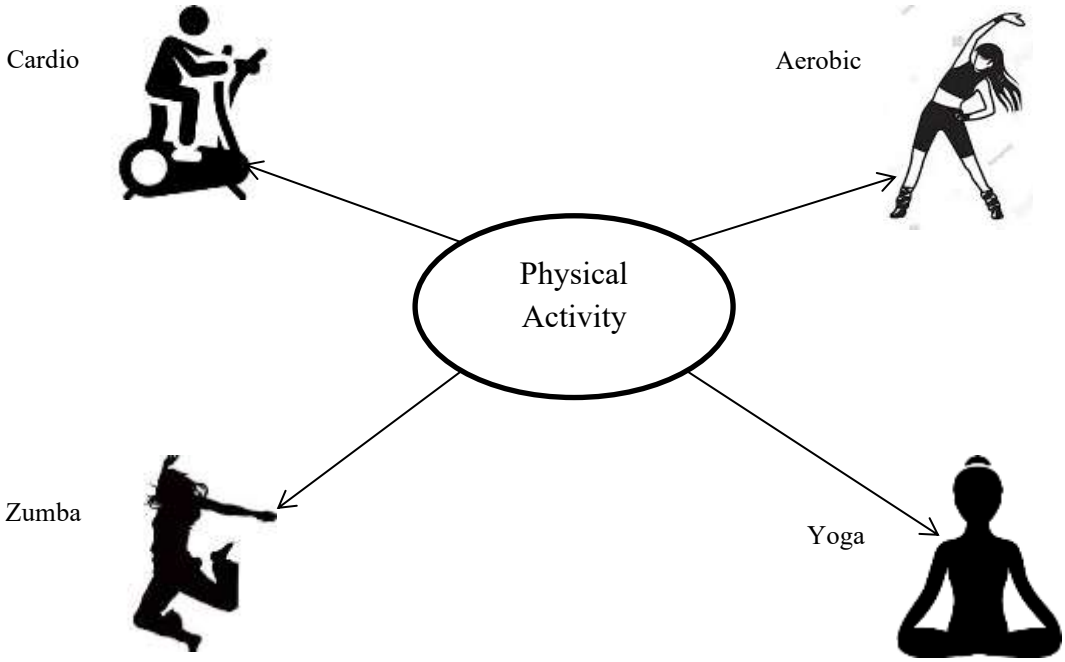


Figure 1. Changed physical activities

Bone health

Cardiovascular exercise indirectly improves general health even though it is not usually directly associated with bone health. Cardio exercises help control weight, which is important for lessening bone stress. Bone development is influenced by hormonal changes brought on by exercise, such as the production of growth hormone and insulin-like growth factor 1. Cardio is typically not weight-bearing, however, some exercises increase bone density and lower the risk of osteoporosis. Sunlight exposure during outdoor activities promotes the synthesis of vitamin D. Certain exercises' regulated impact is good for joint health, and improved blood circulation makes it easier for nutrients to reach the bones. Cardio and strength exercises together offer extensive benefits for bone health that are essential for all stages of life. [Figure 2]

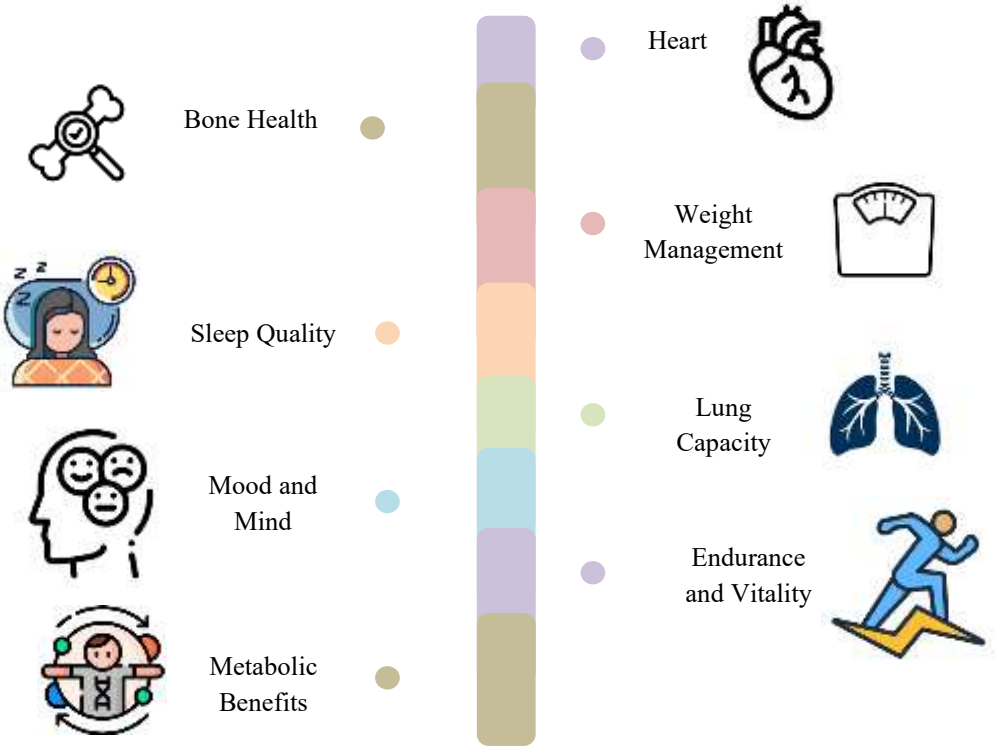


Figure 2. Cardio exercise stages

Topics

To achieve the objective of the research, 65 Basketball stars that are female were selected from Physical Education College, Alagappa University, and UmayalRamanathan College for Women, Karaikudi, and Tamil Nadu. The study's participants ranged in age from 18 to 25. They were split up into four groups of fifteen people each: one for aerobic dancing, one for yoga practice, and one for management. If subjects experienced any problems before or after the experiment, they were able to revoke their permission. However, no one dropped out of the study. Written approval for the studies was also obtained.

Testing Procedure

The eight-week training included exercises of progressive difficulty aimed at increasing health-related fitness variables, e.g.cardiorespiratory endurance [14]. The training gets more challenging and complex after every week. Cardiorespiratory endurance was evaluated using established testing methods both before and after the training session.

S.No	Standard Variables	Examination Substances	Component of Size
1.	Cardiorespiratory Fortitude	Cooper's 12 minutes Track	Metres

Statistical Technique

Data were analyzed using a't'-test and examination of covariance. The Scheffe posthumous testing was employed to identify the paired descriptions whenever the adapted post-test techniques' "F" ratio was shown to be important. In every instance, the belief limit was set at 0.05.

RESULTS

Table 1.1
Calculationof the't' examination depending on Cardio-Respiratory Fortitude
(Notches in meters)

Mean	Yogic Practices Group	Aerobic Dance Group	Control Group
Pre–test	2168.00	2157.33	2163.33
Post–test	2381.33	2364.67	2156.67

't' - test	**11.82***	**10.90***	0.33

According to Table 1.1, the unconditioned category, aerobic dancing category, and yoga training group's pre-test cardiovascular endurance implies are 2168.00, 2157.33, and 2163.33, respectively. The post-test averages are 2381.33, 2364.67 [14], and 2156.67 respectively. The dependent t-ratio values obtained are 11.82, 10.90, and 0.33 respectively. At the 0.05 level, a table value of 2.15 is necessary for significant differences with df 14. The control group's cardiac endurance was shown to have considerably increased.

Table 1.2
Calculationof analysis of Covariance on cardio-respiratory Endurance

Experiment	**Yogic class**	**Aerobics class**	**Control class**	**Birthplace of Alteration**	**Figure of plazas**	**df**	**Malicious Places**	**f relationship**
Pre-test	2168.00	2157.33	2163.33	Between	29991.67	3	9997.22	1.71
				Within	326506.67	56	5830.47	
Post-test	2381.33	2364.67	2156.67	Between	1040178.33	3	346726.10	40.00*
				Within	485440.00	56	8668.57	
Adjusted post-test mean	2366.44	2358.68	2145.67	Between	1209928.09	3	403309.40	86.04*
				Within	257824.34	55	4687.72	

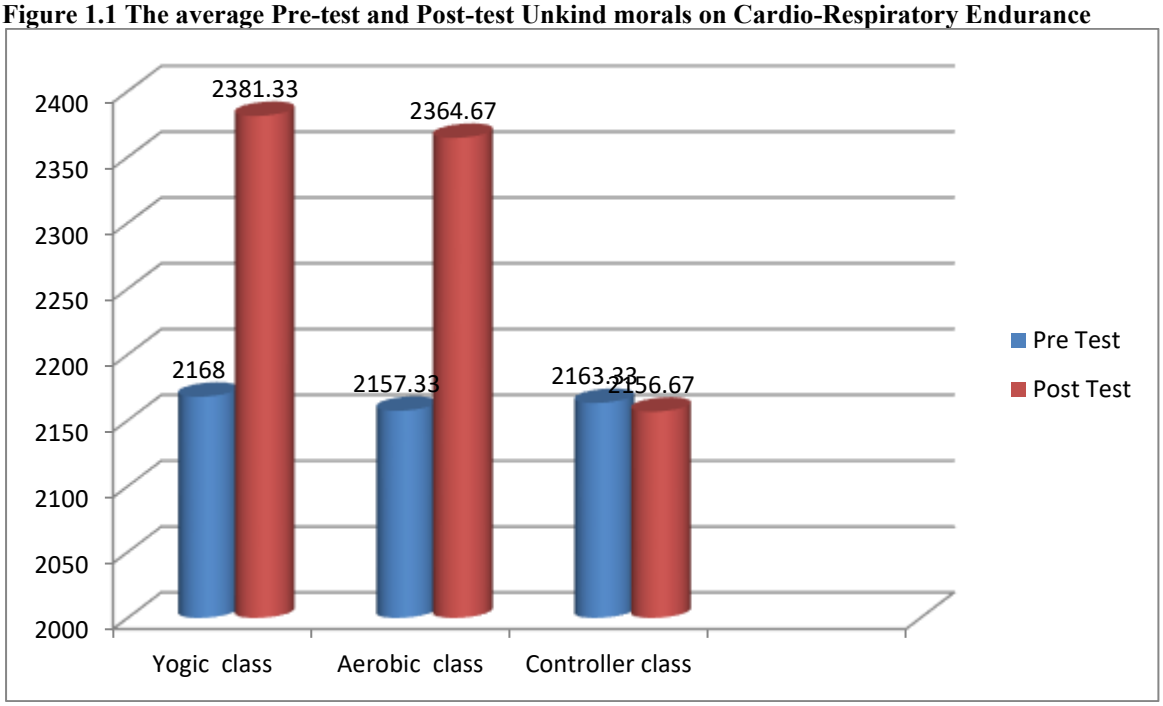
The treatment as well as control groups' average pre-test cardiovascular endurance scores are 2168.00, 2157.33, and 2163.22, accordingly, as indicated in table 1.2 below. The pre-test scores' resulting "F" ratio of 1.71 was less than the 2.76 tables value for levels of autonomy 3 and 56 that was necessary for significant at a 0.05 level of confidence. The testing versus control groups' corresponding post-test mean scores are 2381.33, 2364.67, and 2156.67. For post-test scores, the computed "F" ratio of 40.00 was higher than the reported indicated in 2.
The testing and reference groups' modified post-test averages are 2,366.44, 2,358.68, and 2,145.67, correspondingly. An important level of 0.05, the modified post-test scores' resulting "F" ratio of 86.04 exceeded the reported value of 2.78 for dimensions freedom between 3 and 55. Results from this research indicate that all experimental groups' adjusting post-test means differ significantly from one another Table 1.3 [15].

Table 1.3
Post Hoc Scheffe's Test on Cardio-Respiratory Endurance

Adjusted Post-test Means			**Mean Metamorphoses**	**Buoyancy Interval**
Yogic class	**Aerobics class**	**Control class**		
2366.44	2358.68		7.76	72.07
2366.44		2145.67	220.77*	72.07
	2358.68	2145.67	213.01*	72.07

According to Table 1.3, the adjusted post-mean values from the comparison below are 213.01 and 220.77, accordingly, and they are greater than the 72.07 uncertainty limit; near was a significant difference at the 0.05 self-confidence level. The comparison between the Yoga Practices and Aerobic class is 7.76, this falls outside of the trust range of 72.07: there was no significant difference at a confidence level of 0.05.

Figure 1.1 The average Pre-test and Post-test Unkind morals on Cardio-Respiratory Endurance



Findings

The learning results highlight the importance of yoga and aerobic dance practices in improving the cardiorespiratory endurance of basketball players. There is a return to courage in training for organized matches. There is training, performance, and competition. Sports may require it, but their contents are as delicate as any perfume and can easily fade. Although there are many ways to improve certain coordination skills, aerobic and anaerobic capacity, and flexibility abilities, the role of yoga practices and aerobic dance practices are undeniable.

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