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EFFECT OF SELECTED PILATES EXERCISES ON PHYSIOLOGICAL CHARACTERISTICS OF OBESEPEOPLE

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Abstract:

The purpose of the present study was to find out the effect of selected Pilates exercises on physiological Characteristics of obese people. The total sample of 60 males between the age group of 20-45 years was selected and divided into two groups i.e. 30 in the experimental group and 30 in the control group from the general population of Muzaffarnagar Uttar Pradesh. In the present study, a purposive-random sampling technique was employed to select the sample for measuringresting heart rate, systolic blood pressure, diastolic blood pressure & lung capacity.The subjects underwent training for 24-week with the Pilates exercises. The difference in the mean of each group for selected variables was tested for the significance of difference by paired 't' test. The level of significance was set at 0.05. The Result was found that the effect of selected Pilates exercises was significant resting heart rate, systolic blood pressure, diastolic blood pressure & lungs capacity of the experimental group as compared to the control group.

Keywords*: Blood pressure, Resting Heart Rate, Lungs capacity*

I. Introduction

Throughout most of human history, being fatty wasn't an option. The constant struggle to hunt, gather, or harvest enough food to take care of life meant most of the people were always slim. Plumpness was a symbol of excess, found only within the wealthy. So early, being fat was a standing symbol. Still, for many people, just getting enough to eat was still a large issue. Whenever food is scarce, having the ability to eat well are some things to require pride in. If food is regularly available, avoiding the desire to over-indulge would be considered a sign of self-control.

Measurement, evaluation, and analysis of human body structure are three of health care practitioners' most demanding activities. Body composition or weight is the main fat percentage metric, not giving information about metabolically active tissue and lean body mass. Human BC (Body composition) thus refers to the calculation of the real and approximate quantities of bone , muscle and fat tissue, calculated by various techniques based on the instruments at hand (e.g. body structure, hydrostatic analysis, dual-emission X-ray & absorptiometry).

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From these variables, fat mass or body fat percentage has been the foremost important estimate for health purposes given the strong correlation with cardiovascular diseases (Heyward and Wagner, 2004) Genetics, behaviour (e.g., sedentary lifestyle, tobacco and alcohol consumption), and many other diseases (e.g., bulimia, anorexia), may negatively impact BC (Body composition), where overweight, obesity, or a dramatic reduction of muscle mass, are some consequences of those conditions. For eg, individuals presenting with inherited nervous anorexia displayed emotional behaviour associated with caloric and low body mass index (BMI) (Dellava et al., 2010).

About 50% of anorexic patients who have osteopenia at two test points (Ferna'ndez Soto et al., 2010). Also, a recent Thibault et al. report (2010), Relates parental exercise behaviour to the increased likelihood that their children will become obese and overweight adolescents. Indeed, the risk reduces when a physical activity lifestyle includes a minimum of one among the oldsters. Wellness is that every organism works efficiently according to the tasks it defines. Refers to the parental exercise activity to the increased likelihood that obese and overweight adolescents are their off autumn. Also, the risk decreases when a physical exercise way of life needs a minimum of one of the old guys. Health is that any entity performs efficiently according to the tasks it decides.

Until coping with weight issues in youth, one must be able to accept the issue at the start. While several of the families are conscious that their children are becoming fatter and so the actual circumstance is alarming, many parents appear to hold the illusion that childhood overweight and obesity often impacts the children of others when their children are only a touch of overweight or may have puppy fat. As part of their growth, children evolve several various ways at different ages as well as development, so it is always challenging to find out whether they are overweight. However, whether a kid huffs and puffs or goes red on his face while going up a slope, or whether they can't fit into age-sized pants, or if more lumps of fat are sometimes found around his middle, the kid might be overweight and may require support. During this juncture, a primary care worker will assist with deciding whether the infant is overweight.

OBESITY PHYSIOLOGY EPIDEMIOLOGY AND PREVALENCE

Caloric intake and expenditure imbalances lead to obesity. The feedback among energy expenditure shows a pathological derangement within the kind of excess fat mass. Excessive accumulation of fat is known for an illness. Nevertheless, it's best to look at obesity as an astray survival benefit, as it's important to note that what is currently called pathophysiology was beneficial while the food was less affordable.

During feedback control, some peptide hormones are created which critically involve fat in energy balance. Three of them are considered more essential to be leptin and adiponectin. Lack of leptin gives rise to severe obesity. The foremost abundant hormone extracted from fat cells that enhances insulin sensitivity and appears to be an anti-inflammatory cytokine called adiponectin (Ouchi, N. et al. 2003).

To a serious extent, signals that are directed by leptin and other fat-derived peptides are mainly integrated within the hindbrain and mid-brain using various signals (monoamines, neuropeptide-Y, agouti-related peptide, α melanocyte-stimulating hormone). Besides, they give different efferent messages to look for food and modulate different functions of organs like the small intestine and organ (glycerol 3-phosphate dehydratase), and fat tissue (uncoupling proteins) only for rodents (McMinn, JE et al . 2000).

This involves high body mass, low growth-related birth weight, intrauterine susceptibility to maternal diabetes or maternal obesity, maturation timing or pace, other behavioral or psychological factors. Conditions such as thyroid problems triggers of endocrine, Cushing disorder, somatotropin dysfunction, dystrophy and other triggers of lack of mobility, polycystic ovary syndrome, hypothalamic injury, hypogonadism-related hereditary syndromes (e.g., Prader-Willi syndrome, Laurence-Moon syndrome, Bardet-Biedl syndrome) (Kipping, RR. Jago, R. ú Lawlor, DA. 2008).

An individual can gain weight when energy input exceeds output. Nutrition is a contribution to electricity. Obese children appear to eat considerably more calories on average than their thin-looking counterparts. The basal point, the thermal impact of food and operation is power production. A human will gain weight when energy input exceeds output. Nutrition is the input energy. Obese children on average appear to eat considerably more calories than their thin-looking counterparts. Simple scale, the thermal effects of food and operation are energy production. A human will gain weight when energy input exceeds output. Nutrition is the input energy. Obese children on average appear to eat considerably more calories than their thin-looking counterparts. Simple scale, the thermal effects of food and operation are energy production

Pilates isn't always just exercise; Pilates is not simply a random desire of precise movements. Pilates may be a gadget of bodily and mental conditioning which will beautify one's bodily strength, flexibility, and co-ordination also as reduce stress, improve intellectual focus, and foster an extended sense of well-being. Pilates is frequently for all people and everybody. Pilates is an exercising machine supported yoga ideas with Germanic overtones embedded within it. It mostly focuses on improving endurance and adaptability of the abdomen, decreases lower back, and hips. The movement established within the Twenties by the late Joseph Pilates used for use as a way to rehabilitate from infectious illnesses such as asthma. The true notion involves improving muscle strength, agility, and adaptability while preserving spinal flexibility (Kloubec, 2005; Quinn, 2005; Shedden, 2006).

Pilates might also be a very advantageous exercise that mixes both jap and western concepts with the aid of inclusive yoga (a mind-body method), breath, flexibility, relaxation, energy, and endurance. it's neat to make stronger both bodily and intellectual well-being. Furthermore, Pilates schooling enhances the strong, core muscle groups and increases balance, flexibility, and coordination of muscles. Pilates is excellent for health, relaxation, and improving the good overall of life (Frediani, 2005).

The Pilates cycle makes use of every floor and/or advanced equipment to complete exercises. Pilates is a special workout method that offers all forms of body and health skills for each person (Byrne, 2008). There are about 500 exercise workouts done on mats or advanced devices. Pilates' primary cause is to prepare the mind, body, and breathe to create up glossy and effective abdominal muscles, and a robust and agile back plate aims to strengthen body equilibrium, relaxation, and conditioning. Pilates for the physics measurement it provides; toned and reinforced core muscle groups, improved body coordination, prevention of injury, amplified stability and power, attitude and balance growth, and comfortable lifestyle movement (weightawareness.com).

Both Pilate’s exercises are attributed to 5 relaxation requirements, spinal, ribs and scapular, pelvic stability, and the application of the muscle transverses abdominals (Kloubec, 2005). Also, Joseph Pilates focuses his fitness method on six principles: focus, power, fluid motions, precision, and respiratory (Kish, 1998; Metel,

2007). The use of the pad and a few devices (Reformer, Cadillac, Comfort Table, Swiss ball or fitness ring, over the base, pipes, and tubing) has also been achieved through Pilates workout.

II. Materials and methods

To achieve the purpose of the study total of sixty (n=60) male obese people were selected as subjects divided into two groups, thirty (n=30) experimental and, thirty (n=30) control groups general population of Muzaffarnagar Uttar Pradeshwas Purposive sampling technique was employed to select the sample. The age group ranged from 20-45 years. The Researcher has used a Sphygmomanometer to measure Systolic & Diastolic bl ood pressure &Resting Heart Rate and Peak flow meter to measure lung capacity. The subjects were subjected to a twenty-four week Pilates training programmed.

SELECTION OF VARIABLES

The following variables were selected for the study-Systolic blood pressure, Diastolic blood pressure, Resting Heart Rate and lung capacity

Table 1- Show that the 24-week Training programs of various Pilates exercise.

CATEGORY	DURATION OF TIME	EXERCISE NAME
BEGINNER	8 WEEK	The Hundred, The Roll-Up, Standing Foot work Series
INTERMEDIATE	8 WEEK	The Double Straight Leg Stretch, The Saw, The Criss Cross
ADVANCED	8 WEEK	The Swan Dive, The Shoulder Bridge, The SideBand, The Push-Ups, Teaser IInd

Data Analysis

The collected data were put to statistical computing t-value to find out the differences if any, between the pre and post resting heart rate, systolic blood pressure, diastolic blood pressure & lungs capacityof obese peoples.

Statistical Technique

to find out, in order to find out the effect of selected Pilates exercises on physiological characteristics of obese people were tested for the significance of difference by paired‘t’ test. The level of significance was set at 0.01-0.05 level.

III. Result

The result of multiple stepwise regression have been given in table-1

Table 1.1 *show the* Resting Heart Rate of Experimental and Control group

Group	Number	Mean	S.D	SEM	't' Value
Experimental (Pre-test)	**30**	80.0000	2.9595	.5403	**15.444**
Experimental (Post-test)	**30**	75.7667	2.8245	.5156	
Control (Pre-test)	**30**	80.0000	2.6392	.4818	**-.542**
Control (Post-test)	**30**	80.1667	2.6663	.4868	

Significant "t" 0.05 (29) = 1.70

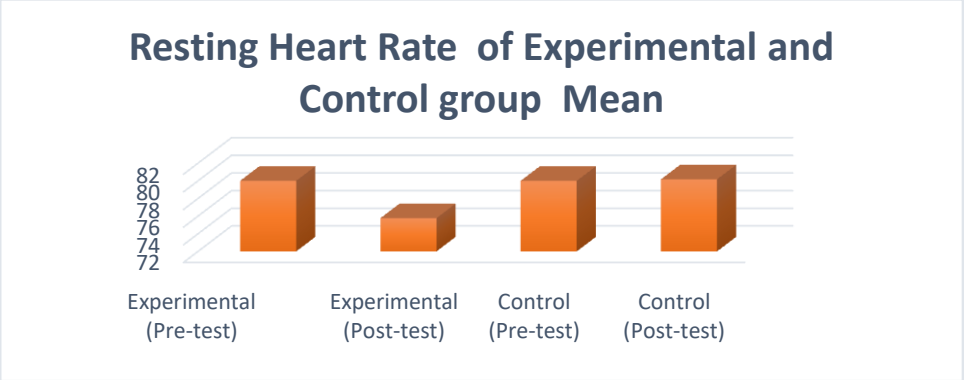

Figure 1.1 mean deference of Resting Heart Rate

Table-1.1 shows that the mean of Resting Heart Rate of the pre-test of the experimental group and post-test of the experimental group was 80.0000 and 75.7667respectively, whereas the mean of Resting Heart Rate of pre-test of control and post-test of the control group was 80.0000 and 80.1667. The "t" value in the case of the experimental group was 15.444and for the control group it was -.542 since calculated t (=15.444) > tab t .05 (29) (=1.70), the results of this study showed that statistically significant and explained its effects positively.

Table 1.2- *Show the* Systolic blood pressure Level of Experimental and Control group

Group	Number	Mean	S.D	SEM	't' Value
Experimental (Pre-test)	**30**	134.9000	3.7078	.67696	**20.70**

Experimental (Post-test)	**30**	129.7667	3.6358	.66382	
Control (Pre-test)	**30**	134.2000	5.3909	.98424	**6.805**
Control (Post-test)	**30**	132.3333	5.2413	.95693	

Significant "t" 0.05 (29) = 1.70

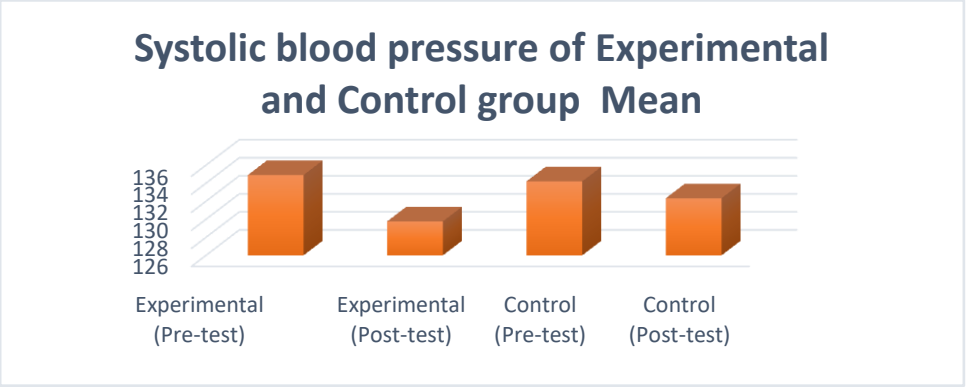

Figure 1.2 mean deference of Systolic Blood Pressure

Table-1.2 shows that the mean of Systolic Blood Pressure of the pre-test of the experimental group and post-test of the experimental group was 134.9000 and 129.7667respectively, whereas the mean of Systolic Blood Pressure of pre-test of control and post-test of the control group was 134.2000 and 132.3333. The "t" value in the case of the experimental group was 20.707and for the control group it was 6.805 Since calculated t (=20.707) > tab t .05 (29) (=1.70), the results of this study showed that statistically significant and explained its effects positively.

Table 1.3 *show the* Diastolic blood pressure Level of Experimental and Control group

Group	Number	Mean	S.D	SEM	't' Value
Experimental (Pre-test)	**30**	89.133	1.3321	.2432	**16.804**
Experimental (Post-test)	**30**	84.666	1.8815	.3435	
Control (Pre-test)	**30**	89.333	2.2488	.4105	**7.538**

Control (Post-test)	**30**	87.733	2.2273	.4066	

Significant "t" 0.05 (29) = 1.70

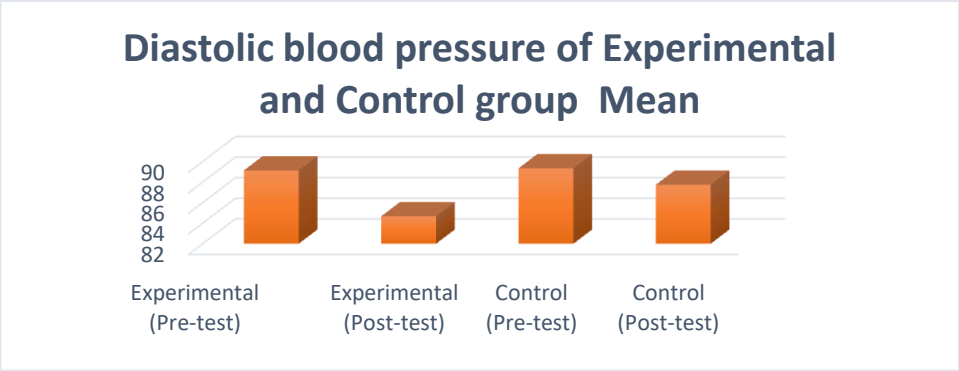

Figure 1.3 mean deference of Diastolic Blood Pressure

Table-1.3 shows that the mean of Diastolic Blood Pressure of the pre-test of the experimental group and post-test of the experimental group was 89.1333 and 84.6667respectively, whereas the mean of Diastolic Blood Pressure of pre-test of control and post-test of the control group was 89.3333 and 87.7333. The "t" value in the case of the experimental group was 16.804and for the control group, it was 7.538 Since calculated t (=16.804) > tab t .05 (29) (=1.70), the results of this study showed that statistically significant and explained its effects positively.

Table 1.4 *show the* Lungs Capacity Level of Experimental and Control group

Group	Number	Mean	S.D	SEM	't' Value
Experimental (Pre-test)	**30**	250.0000	65.3241	11.926	**-13.99**
Experimental (Post-test)	**30**	325.0000	66.6307	12.165	
Control (Pre-test)	**30**	267.5000	71.0603	12.973	**-.135**
Control (Post-test)	**30**	268.3333	61.2137	11.176	

Significant "t" 0.05 (29) = 1.70

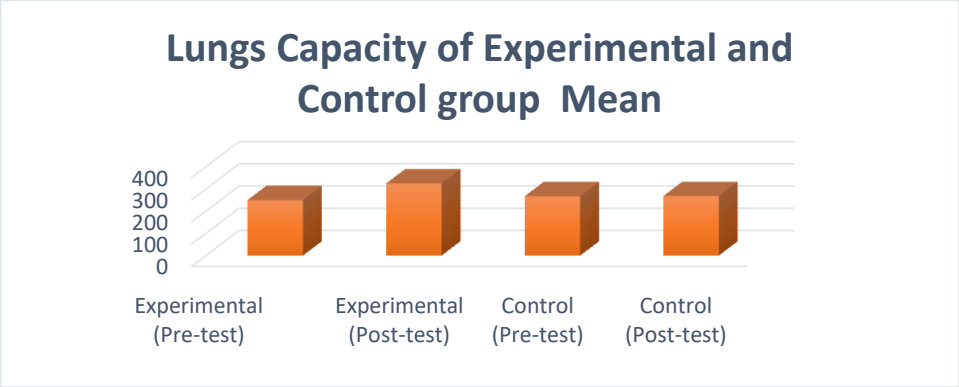

Figure 1.4 mean deference of Lungs Capacity

Table-1.4 shows that the mean of Lungs capacity of pre-test of experimental group and post-test of the experimental group was 250.0000 and 325.0000respectively, whereas the mean of Lungs capacity of pre-test of control and post-test of the control group was 267.5000 and 268.3333. The "t" value in the case of the experimental group was -13.991and for the control group, it was -.135 Since calculated t (=-13.991) > tab t .05 (29) (=1.70), the results of this study showed that statistically significant and explained its effects positively.

IV. Discussion

From the results, it is evident that the twenty-four-week Pilates training program had shown a significant effect of the experimental groupas compared to the control group of obese people. Determine the effects of Pilates training on the physiological characteristic of obese people showed a statistically significant *"t" 0.05 (29) = 1.70*

V. Conclusion

Obesity is characterized as a serious public health problem with significant impact worldwide, as represented by high rates of death. Among the major comorbidities derived from obesity, changes in physiological function can be highlighted. That condition can lead to systolic & DiastolicBlood pressure, Resting Heart Rate & Lungs capacity. Thus, Pilates exercise is one effective means of therapeutic intervention for improving respiratory function, blood pressure& resting Heart Rate. In that context, Pilates is considered to be a method of Pilates exercise that promotes overall controllingBlood pressure and normal function of resting heart rate and lungs capacity. As a result, it has been gaining ground and is being popularized. With the results found in the current literature review, the authors have observed that Pilates promotes the strengthening of physiological function. That fact could possibly be related to improvement of the diaphragmatic function& cardiovascular function which may result resolved the significant effect of selected Pilates exercises on Blood pressure, Resting Heart Rate, Lungs capacityof obese people.

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