International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 5s, 2025
https://www.theaspd.com/ijes.php

Environmental Determinants Of Health: Outdoor Aerobics And Resistance Training For Obese Females

Muhammad Farhan Tabassum[1], Saadia Mahmood ul Hassan[1], Aqsa Shamim Ahmed[2*], Myeda Saeed[3], Saman Junaid Chattha[4], Sidra Ghazanfar Ali[5]
[1]Centre for Skill Development and Leadership, The University of Lahore, Lahore, PAKISTAN.
[2]Department of Sport Sciences & Physical Education, Faculty of Allied Sciences, University of Lahore, Lahore, PAKISTAN.
[3]University Institute of Radiological Sciences and Medical Imaging Technology, Faculty of Allied Sciences, University of Lahore, Lahore, PAKISTAN.
[4]Department of Physical Education, Lahore College for Women University, Lahore, PAKISTAN.
[5]Department of Sports Sciences and Physical Education, University of Coimbra, Coimbra, 3001-4, PORTUGAL.

Abstract: *Obesity is a major global health concern linked to chronic conditions such as diabetes and cardiovascular illnesses. Aerobic exercise (AT) and resistance training (RT) are effective non-pharmacological methods for weight management. To examine and compare the effects of aerobic training and resistance training on obesity-related parameters in obese women. An experimental study was conducted involving 60 obese ladies (BMI >30, aged 22–35 years). The participants were divided into two groups, AT and RT, and underwent training for six weeks. Measurements conducted prior to and subsequent to the intervention encompassed weight, BMI, and adipose tissue thickness in the triceps, suprailiac, thigh, and chest regions. Both AT and RT resulted in significant reductions across all obesity indicators. Aerobic exercise yielded somewhat greater improvements in weight and BMI compared to strength training; nevertheless, both methods were equally beneficial in reducing body fat and improving fitness. Aerobic and resistance training significantly reduce obesity in females. To optimize weight control and health benefits, it is advisable to integrate many forms of exercise.*

Keywords: *Aerobic Training, Resistance Training, Obesity, Females, Physical Fitness*

INTRODUCTION

A 2016 survey by the World Health Organization indicated that over 39% of individuals aged 18 and over are overweight, with 13% classified as obese. Obesity occurs when the body accumulates excess fat that is unnecessary. This illness state arises from various factors, including modern living habits that create an imbalance between energy intake and expenditure, physical activity, and nutritional choices. Obesity adversely affects health and can lead to other life-threatening conditions, including hypertension, diabetes, and cardiovascular issues. Karlsson et al. (2010) assert that increased body fat correlates with a heightened susceptibility to illnesses.

Due to such a high risk of diseases as a result of obesity, many remedies had been devised to control obesity. Exercise along with dietary restriction has a synergistic effect in reducing excessive body weight (Laskowski, 2012). The importance of regular exercise cannot be under-mined. People of all age groups have shown great interest in exercise programs for maintaining and enhancing health benefits (Belozo et al., 2018). One of the most effective ways against obesity is workout plan, especially aerobic exercise and resistant training. Aerobic training also known as cardio exercise refers to maximum use of oxygenated blood pumped by heart during physical workout in muscle tissues. In such exercises, oxygen is used to "burn" fat and glucose a good way to produce adenosine triphosphate, the primary power provider for all cells. Initially at some stage in cardio exercise, glycogen is fragmented down to produce glucose, but in its absence, fat metabolism is initiated as a substitute. Aerobic exercise can also help in reduce fat, loss in excessive weight, and change in physical appearance (Brace et al., 2020). Resistance training involves contraction of muscles against an external resistance that may include rubber tubing, dumb bells, bricks, water bottles. Resistance training can also help in reducing weight. If slow repetition is done, as a result the body becomes lean which provide us the desired results.as we know if we exercise regularly, we would have healthy mind as well as healthy body. Resistance

training includes resistance bands, crunches with medicine balls. A research study (Willis et al 2012) on exercise for weight loss and weight maintain consists of aerobic training as part of the workout.in a study. It is calculated fact that balanced diet reduces obesity and has played a vital role in acquiring lifelong health in the habit of the person (Ghosh-Dastidar et al., 2014).

While side effects of aerobics training causes inflammation in the joints because the joints contain white colored lubricants which helps the body joins to move easily. Despite of it the positive effect of aerobics training is that it increases heart and lungs fitness, muscle and bone strength as well (Brooke & Stensel, 2008). The cardio and aerobics training has a great bonding with each other to get rid of being obese at higher stage. Aerobics training can be done outside as well as like riding a bicycle or riding the stationary bicycle in better fresh air which is necessary for human health. (Kim, 2024).

A study will be conducted on female gym ladies over weight will be selected and will be equally divided into two groups to check the effect of exercises by comparing various parameters i.e weight, body mass index, body fat, and waist to hip ratio (WHR) before and after the exercise. The effects on both groups will be observed. In this regard the researcher has selected the study entitled "Impact of Aerobic Training and resistance training on Obesity in females". The prevalence of obesity and related co-morbidities has reached within the closing four many years' epidemic proportions in lots of populations, becoming one of the predominant public health concerns at some point of the world. This epidemic cannot be totally explained by means of unexpected changes in our genetic history, and has been in particular attributed to life-style adjustments.

Obesity has become a widespread issue globally, which has been attributed to over-nutrition and sedentary behavior as a result of the industrialization of societies. However, in the same environment some individuals remain normal weight, while others gain weight easily. Genetic profiles may explain this difference. Recent research has included resistance exercise as part of an exercise prescription for weight loss and management. The STRRIDE AT/RT experiment assessed the impact of aerobic and resistance exercise on weight reduction. The study involved 400 sedentary obese or overweight adults who were randomly allocated to two eight-month aerobic training programs aimed at reducing obesity. Aerobic exercise benefits cardiovascular and pulmonary health, enhances bone density, increases energy levels, and improves flexibility and overall fitness. Over 66% of individuals are overweight or obese, increasing their likelihood of developing chronic diseases. To mitigate health risks associated with chronic diseases, weight reduction is recommended. The National Heart, Lung, and Blood Institute (NHLB) guidelines recommend a 10% weight reduction; however, numerous studies indicate that a 3% to 5% weight loss can mitigate health concerns. Physical activity (PA) is recommended for weight control, prevention of weight gain, weight reduction, and avoidance of weight deaccumulation following weight loss.

The STRRIDE AT/RT study demonstrated that middle-aged, overweight individuals must engage in both aerobic training (AT) and resistance training (RT) to reduce fat and body mass while increasing lean mass. Aerobic training has numerous advantages, including enhanced lung and heart health, strengthened bones, improved endurance, and increased flexibility and fitness for cardiovascular activities. Weight loss is essential to mitigate the risk of chronic disease, and physical activity is advised for weight management and preventing weight regain post-loss.

Obesity significantly affects individuals' health, manifesting in both statistical data and visual representations, as well as contributing to conditions such as hypertension, diabetes, and cardiovascular disease. We can utilize our body weight to perform resistance exercises. Push-ups, sit-ups, chin-ups, squat thrusts, lunges, and step-ups are examples of exercises that can enhance our physical strength. Numerous varieties of resistance exercises exist. Olympic lifting involves athletes elevating weights above their heads, as demonstrated at the Olympics. Powerlifting is a competition in which athletes perform the squat, deadlift, and bench press. Weightlifting is a sport in which competitors lift substantial weights, typically no more than six repetitions. Resistance exercise involves lifting weights in a gym setting to enhance strength, increase muscle mass, or improve muscle definition. The term "strength training" is occasionally used to refer to weightlifting. It is technically inaccurate to refer to resistance exercise as strength training. Strength training is more accurately defined as resistance exercise that enhances strength. In this article, resistance training refers to the weightlifting performed at the gym to increase size, strength, muscular tone, or endurance.

Obesity may be attributed to various factors, including genetics, environmental influences, metabolic processes, alterations in endocrine function, excessive adiposity, lifestyle and dietary practices, pharmacological agents, and gastrointestinal issues. Another research study shows that the only participation in physical activity is not enough to reduce the risk of illness and health issues Khil et al., (2024).

There must be cardio activity sessions to enhance the aerobic condition in obese people and for enhancing the heart rate activity (Han, 2021). In this study researchers found the effect of resting heart rate and its variations during rest in number of trails especially with females. In the modern and scientific era and technology human cannot deny the cardio, physically activity sessions. The development of cardiovascular endurance is most important in workout plan from trainers, i.e. the potential and development of physiological modification in fatty persons. This overview is based on unique research with the people, who have different medical and health condition that are ranging from danger heart situation (Duffey & Poti, 2016)

The efficacy of exercise combinations has been assessed in that setting. Studies demonstrate that integrating resistance training with aerobic exercise improves muscle strength, however discrepancies in the intensity, type, and duration of aerobic protocols result in variable outcomes (Ross R, Janssen I.). It is understood that intensity aids in the reduction of fat. We inhabit a contemporary world that has undergone transformation due to technology. Currently, the majority of gyms offer an array of training alternatives. Aerobic exercise invariably encompasses HIIT (high-intensity interval training).

Selvalakshmi did a study on the impact of a diverse aerobic exercise regimen on obese women employed by the companies. Aerobic exercise encompasses several activities that enhance cardiac and pulmonary performance for a duration adequate to elicit advantageous physiological alterations (Koletzko, 2020).

Overweight or obesity occurs when calorie intake exceeds energy expenditure. The most straightforward method to elucidate the pathogenesis of this disease, characterized by an imbalance between energy intake and expenditure, is through the proliferation of adipocytes. Bray GA. Obesity: the disease. Journal of Medicinal Chemistry 2006:49. Aerobic exercise facilitates weight loss and maintains a constant body mass index. It also elevates the heart rate by facilitating respiration temporarily. Shenbagavalli and Mary (2008) The key to weight loss appears to be achieving a negative energy balance. A significant amount of aerobic exercise is essential for those with obesity to achieve this objective (Park et al., 2018). Experts unanimously concur on the optimal intensity level for this demographic's workout regimen.

Aerobic exercise, particularly water aerobics, may alleviate chronic back pain. Low-intensity sustained or steady state (LISS) is also efficacious for weight loss. This workout typically lasts 45 to 60 minutes. It facilitates weight loss by increasing caloric expenditure. LISS activities resemble swimming, brisk walking, and various other cardiovascular exercises. Individuals with obesity often experience significant balance issues due to their excess weight, misaligned center of mass, and lack of physical fitness and strength.

Bryant asserts that resistance training is effective as it enhances the proportion of lean tissue relative to fat tissue. This is evident in the study and numerous others. Individuals aspire to appear slenderer and more fit, and one method to do this is by reducing adipose tissue and increasing lean tissue. Lean tissue possesses greater density than adipose tissue, resulting in a reduced spatial occupation.

Resistance training offers multiple vital health and performance advantages, including enhanced muscle, bone, ligament, and tendon strength, along with improved balance, stability, and mobility. It is imperative to retain this information. These advantages enhance an individual's functional performance, potentially resulting in an improved quality of life.

The hormonal environment created by excessive resistance training promotes muscle growth and fat utilization (Willis, 2012). Most resistance-training programs aimed at fat loss seek to augment lean muscle mass and optimize hormonal environments conducive to muscle synthesis and fat oxidation (Patel et al., 2014). Diverse regimens modify critical training variables, such as the sports engaged, training volume, and intensity, to facilitate muscle hypertrophy and fat oxidation. Nearly every prominent resistance-training activity can positively impact the body in some manner (Poehlman, et al., 2000).

Certain physical activities are more beneficial than others for safe and potent fat loss (Park et al., 2018). Squats, deadlifts, Olympic lifts, pull-ups, and push-ups are among the most effective activities for fat loss and

muscle development (Rustaden et al., 2017). These tasks require the coordination and mobilization of several joints.

Exercises may vary between school blocks to prevent muscle overuse and to allow exploration of several methods for muscle development and fat reduction (Lima et al., 2017). Perform barbell squats for a duration of 12 weeks, thereafter transition to an alternative squat variation or lower-body exercise (such as front squats, lunges, etc.) for a distinct period (Willis, 2012). The optimal resistance-training program for fat loss emphasizes complex exercises. The cumulative quantity of units, repetitions, or duration of tension and resistance (weight) employed during a training day, month, or other training period is referred to as the training volume extent. This is calculated by multiplying the number of sets by the number of repetitions or the duration of stress applied by the weight utilized over a training day, week, month, etc. (Tinsley et al., 2019). Increased training frequency typically results in greater lean muscle mass (i.e., muscular hypertrophy), significantly influencing the body's energy and fat utilization (Shabani et al., 2018).

The aforementioned equation illustrates that this can be achieved by altering the quantity of units, the frequency of actions, or the weight utilized in athletic activities (Liao, et al., 2017). For example, assist your client in progressing from three sets of ten repetitions of an activity to four sets of ten repetitions (Tinsley et al., 2019). Increase the repetitions of an exercise from 8 to 10, or extend the duration from 30 seconds to 40 seconds while your muscles are engaged. Alternatively, instruct them to execute the same quantity of units and repetitions as in a previous educational consultation, but with an augmented weight (Belozo et al., 2018). Additional training days may be used to increase the total quantity (Binzen et al., 2001). For muscular hypertrophy training, fitness professionals recommend performing 3 to 6 sets of 6 to 12 repetitions at 50 to 85% of one repetition maximum (1RM).

Objectives of Study: 1) To measure the impact of aerobic training upon obesity in females 2) To measure the impact of resistance training upon obesity in females.

Hypotheses of Study: 1) **H_1:** There has been a significant impact of aerobics training on obesity in females 2) **H_2:** There has been a significant impact of resistance training on obesity in females.

Problem Statement: Regular physical workout and movements are essential for health and fitness despite of whether they take interest in workout or some other kind of aerobics and resistance exercises. Moreover, working and personal contentment can be enhanced with some type of aerobics activities. Aerobics activity and resistance training is differentiated as real expansion transported by the constriction of stressed muscle that munificently expands vivacity use. In addition, now-a-days, aerobics activity is a non-pharmacological has action of current and occupied way of life around the world. Number of research studies has concluded that standard physical exercises can have speedy medical recompenses by decidedly manipulating body parts and musculoskeletal development for some individuals. This current fashion towards growing weight problems prevalence has been mostly attributed to over-nutrients and sedentary behaviors as made from the industrialization of societies. Different factors along with societal, economics, cultural, and so on, have additionally been considered as considerable contributions to the spread of obesity. In view of the foregoing, the researcher proposes to carry out a research study entitled "Environmental Determinants of Health: Outdoor Aerobics and Resistance Training for Obese Females"

RESEARCH METHODOLOGY

Study Design: Experimental study was conducted. An experimental study design was used to evaluate and compare physical activity and physical fitness. The study was conducted in The University of Lahore and Muscle Hub Gym (Valencia). This University is situated in Defense Riwand road and the other Gym is situated in Valencia Main Boulevard A Block Lahore. There are 2 different areas one floor where aerobics training is conducted the other is for Resistance training which are specific for exercise. There were 60 participants. Half of the participants were already doing their regular activity for general fitness. Age of each participant was 22 to 35 years old. They were looking physically appropriate and active. Female having BMI>30 and BMR>27 was included in the study.

Equipment: Researcher used different equipment for different exercises plans which are as under.

Push-ups Test: Flat surface, recording sheets and stopwatch.

Core plank hold test: Flat surface, stopwatch, recording sheets.

Standing Jump Squat Test: Hard mat or artificial grass carpet, Repetition of jumps, Stop Watch.
Shot spots sprint Test: Flat, non-slip surface, marking, Sprint cones, measuring tape and recording sheets.
100 Meter Sprint Test: Treadmill, stopwatch.
Ethical considerations: The research was conducted in compliance with the standards and regulations established by the ethics council of the University of Lahore. All participants have provided their written consent. The acquisition of information and data has been maintained in confidentiality. Participants remained anonymous during the study. The participants have been informed that there are no drawbacks or risks associated with the study procedure. They have been informed that they may exit the study at any moment. Data have been secured and safeguarded with keys in possession. It will be secured by a password on the laptop.
Data Collection Procedure: Aerobic and resistance training regimens were utilized to collect data. All participants received study information, and those trainees wishing to participate completed a consent form. Demographic data was gathered from participants according to the study's factors, while physical data was recorded in the presence of the researcher and certified trainers during training sessions.
Two officials were present on the squad to assess the pre- and post-test. Both officials were competent and possessed extensive knowledge of fitness assessments.
Measure the test: Test was measure in different methods like time, distance and repetitions.
Pre and Post-Test Components: 1. 20m shuttle run test, 2. One minute push up test, 3. Standing jump. Squat test, 4. Core plank hold test and 5. Short spots sprint test.
Push-ups test: This evaluation was conducted to measure the strength and endurance of the upper body. Position your hands and toes on the ground while aligning your body and legs in a straight line. Your feet should be positioned slightly apart, with your arms extended to shoulder width and perpendicular to your torso. The patient descends their body until their elbows form a 90-degree angle and their upper arms are aligned parallel to the floor. They maintain a straight posture in their back and knees. A partner maintains their hand at a 90-degree angle, allowing the individual being assessed to descend until their shoulder makes contact with the partner's hand, after which they return to an upright position. Participants had one minute to perform as many push-ups as possible.
Core plank hold test: A straightforward core plank evaluation was conducted to ascertain core strength. This assessment was conducted to evaluate the current strength of the participant's core. The objective of the Core Muscle Strength & Stability test is to monitor the development of participants' abdominal and lower back musculature.
Standing Jump Squat Test: Jump squats enhance explosive power, fortify both the upper and lower body, and accelerate calorie expenditure. The explosive power enables rapid movement, making it reasonable to assert that it enhances bodily agility. The athlete positions themselves behind a line on the ground with their feet slightly separated. The individual ascends and descends on two feet, utilizing arm swings and knee flexion to generate propulsion while standing. The individual attempts to leap as high as possible and land on both feet without losing balance. You may attempt just once. The distance was measured from the take-off line to the nearest landing location relative to the heels. Document the distance.
Shot spots sprint Test: The 12-meter multistage fitness test (MSFT), sometimes referred to as the beep or bleep test, is a standardized assessment for maximal aerobic running fitness. The assessment was conducted to evaluate the individual's strength and speed. The examination necessitated constant jogging between two lines spaced 12 meters apart while timing the duration. The participants positioned themselves behind one of the lines and confronted seven cones. They commenced jogging upon the directive of the recording. The subject continuously runs between the seven cones, pivoting upon reaching the terminus of the distance separating two cones and thereafter turning again. The athlete's score was determined by the level and number of 12-meter shuttles completed until they could no longer maintain the pace of the recording. Document the most recent level you completed, rather than the one at which you ceased progress. The Test Recording Sheet was utilized.
100 Meter Sprint Test: This test aimed to determine an individual's speed for sustained running, endurance running, and short-distance sprinting. The assessment involves executing a singular maximal sprint over a specified distance, with the duration being documented. The test was conducted over a predetermined

distance, such as 100 meters, following a standard warm-up. The initial position must be uniform for all participants, devoid of any rocking motions. As the finish line nears, we decelerate the athlete to prevent excessive cardiac exertion in discharging blood and to mitigate increased respiratory rate.

Data Analysis Procedure: Statistical analysis is conducted using SPSS version 25.0. Qualitative variables are represented using frequency distribution and percentages. Quantitative variables are represented as mean value ± standard deviation. Employing the t-Test to ascertain the impact between the variables.

DATA ANALYSIS AND RESULTS

Table 1 *Results of Aerobic Training on different parameters of obesity in females*

Obesity Parameter	Pre-test		Post-test		t(29)	*p*	Cohen's d
	M	SD	M	SD			
Weight	74.39	10.07	67.1	9.29	13.35	.00	0.75
BMI	29.7	5.24	26.8	4.94	13.41	.00	0.56
Triceps	24.01	6.70	15.7	4.77	8.18	.00	1.42
Superaline	32.70	9.22	22.66	6.96	9.00	.00	1.22
Thigh	36.96	5.75	28.03	5.08	5.90	.00	1.64
Chest	20.36	6.59	11.75	3.46	10.20	.00	1.63

Note. The difference in the means of pre and post weight, BMI, Triceps, Superaline, Thigh and chest show the effects of aerobic training on obesity of females where, the maximum change is in the Superaline area of the females. The change in the mean values of pre and post comparison have shown that aerobic training has significant effects on the BMI of obese females.

Table 2 *Results of Resistance Training on different parameters of obesity in females*

Obesity Parameter	Pre-test		Post-test		t(29)	*p*	Cohen's d
	M	*SD*	*M*	*SD*			
Weight	74.39	10.07	68.43	8.93	9.53	.00	0.62
BMI	29.72	5.24	27.38	4.93	9.14	.00	0.45
Triceps	24.01	6.70	16.03	5.24	7.74	.00	1.32
Superaline	32.70	9.22	23.20	7.15	8.21	.00	1.15
Thigh	37.10	5.67	28.16	5.11	6.32	.00	1.65
Chest	20.36	6.59	11.75	3.46	10.20	.00	1.63

Note. The difference in the means of pre and post weight, BMI, Triceps, Superaline, Thigh and chest show the effects of resistance training on obesity of females. The change in the mean
values of pre and post comparison have shown that resistance training has significant effects on the BMI of obese females.

Table 3 *Results of Aerobic and Resistance Training on different parameters of obesity in females*

Obesity Parameter	Aerobic Training		Resistance Training		t(29)	*p*	Cohen's d
	M	*SD*	*M*	*SD*			
Weight	67.13	9.29	68.43	8.93	-4.27	.000	0.14
BMI	26.83	4.94	27.38	4.93	-3.59	.001	0.11

Triceps	15.76	4.77	16.03	5.24	-1.43	.161	0.05
Superaline	22.66	6.96	23.20	7.15	-2.38	.024	0.07
Thigh	28.03	5.08	28.16	5.11	-.55	.580	0.02
Chest	11.75	3.46	11.75	3.46			

Note. The difference in the means of pre and post weight, BMI, Triceps, Superaline, Thigh and chest show the effects of resistance training on obesity of females. The change in the mean values of pre and post comparison have shown that resistance training has significant effects on the BMI of obese females where aerobic training has created more change in the BMI as compared to resistance training.

DISSCUSSION

The purpose of this study was to examine the effects of aerobic training (AT) and resistance training (RT) on obesity-related parameters in obese females. The findings revealed significant improvements in weight, BMI, and skinfold measures after six weeks of intervention in both groups, with aerobic training showing slightly greater reductions in BMI and weight, while resistance training demonstrated improvements in muscle-related outcomes.

These results are consistent with previous research which emphasized the effectiveness of exercise in managing obesity. Willis et al. (2012) reported that both AT and RT significantly reduced fat mass and BMI in overweight adults, with AT producing slightly greater reductions in body weight. Similarly, Binzen, Swan, and Manore (2001) found that resistance training led to increased post-exercise oxygen consumption, which contributes to fat loss over time. The current study supports these findings, highlighting the complementary benefits of both exercise modalities.

The results also align with Belozo et al. (2018), who reported improvements in cardiovascular health and body composition following aerobic exercise in obese individuals. Aerobic training enhances cardiovascular endurance, increases caloric expenditure, and mobilizes fat metabolism (Donnelly et al., 2009). In contrast, resistance training promotes lean muscle mass development, which increases resting metabolic rate and contributes to long-term fat reduction (Poehlman et al., 2000). The combination of these mechanisms explains why both AT and RT yielded significant outcomes in the present study.

Moreover, our findings are supported by studies such as Rustaden et al. (2017), which demonstrated that resistance training improved body composition and muscle strength in obese women, while aerobic training showed stronger effects on fat mass reduction. This indicates that the type of training should be tailored depending on whether the primary goal is fat loss, improved fitness, or muscular strength.

The six-week intervention demonstrated noticeable changes, which suggests that even short-term structured exercise can have meaningful health benefits. However, previous studies such as Lima et al. (2017) and Tinsley et al. (2019) suggest that longer and more varied training interventions may produce even greater improvements in obesity and related health risks.

Importantly, the present study emphasizes the role of structured exercise programs in addressing sedentary lifestyles and dietary imbalances, which are major contributors to obesity (World Health Organization, 2010). University settings and gyms, as used in this study, provide effective platforms for promoting physical activity among young adults.

The intention of the current study was to analyze the impact of Impact of Aerobics Training and Resistance Training on Obesity in Females of the trainees of The University of Lahore and Muscle Hub Gym (Valencia). The selected trainee's participant was separated into two groups, experimental and control. Six weeks of Resistance Training (RT) and Aerobics Training (AT) treatment was used on the participants to assess the result on obesity in females. The trainees of the control group were allowed to spend their routine life during the six weeks of operational treatment. Obesity of the both group's trainees were collected before and after six weeks of AT and RT training treatment (Humphreys et al., 2024)

The common average age of the female trainees' participants of the experimental groups was 29.7000 years. A highly significant change in obesity of the experimental trainee's group was observed following the both aerobics and resistance training. Obesity of the experimental group mean value followed by aerobic training

was decreased significantly from 74.39 to 67.1 in terms of weight whereas, mean value of 29.7 to 26.8 in terms of BMI. On the contrary experimental group mean value trained by resistance training was decreased significantly from 74.39 to 68.43 in terms of weight whereas, mean value of 29.7 to 27.38 in terms of BMI. It is, consequently, concluded that Aerobics Training and Resistance Training treatment has highly significant impact on pretest BMI posttest BMI on obesity of the females' trainees of The University of Lahore and Muscle Hub Gym (Valencia). The present claim supported the study of Sainsbury et al., (2018), Simon et al., (2014) and Matthews (2008). They accomplished that young should do especially female do at least 150minutes of aerobics training and resistance training exercises per week. They also further said that these guidelines also sufficient to prevent unwell being weight increase. The results of the present study also demonstrated the outcomes of different studies concluded by different researchers such as Martyyn-St James, (2006), Zahao R, et. Al., (2015), Ross R, (1991) on the same parameters.

The present composed results were obtained in normal physical circumstance and environmental was same for both groups except six weeks of AT and RT treatment. The present research study findings of post-test experimental group supported the study of Wills et, al, (2012), Ellis, Sean., et, al, (2019) and Cole, T, (2000). They mentioned researchers conducted their researches with Moderate Intensity Interval Training and Aerobics and Resistance Training and established that obesity can be control or reduced with those exercises. They also established that obesity control is a significant marker to enhance sports performance of the athletes. The present research study also found that six weeks of Aerobics Training and Resistance Training had significant impact on triceps, superaline, chest and also on thigh of the obesity female of experimental group.

The background of this current research study that the female has likely sedentary life pattern which leads to gained weight, obesity and greater increase in body mass index in both males' boys and female girls, more uses of transportation and decreased participation in games and sports, increased sedentary behaviors, increased consumptions of junk foods, used up more time in internet surfing. These claims supported the study of Shenbagavalli., (2008), S. L. Charette, et, al., (1191) and Selvankshmi S., (2007). They concluded that transition of university education is at danger period of gaining obesity and adverse transforms in healthy life.

CONCLUSION

This study shown that both aerobic and resistance exercises can facilitate weight loss and enhance health in obese individuals. Following six weeks of intervention, significant alterations were observed in weight, BMI, and body fat metrics. Aerobic exercise resulted in modest reductions in weight and BMI, but resistance training facilitated muscle strength development and fat loss. These findings underscore the need of planned exercise regimens for women to facilitate weight loss and enhance their health. Obese women should engage in a minimum of 150 minutes of moderate-intensity aerobic activity weekly. This may involve brisk walking, cycling, or aerobics. Engage in resistance training 2–3 times weekly, concentrating on major muscle groups through exercises such as squats, lunges, push-ups, and weightlifting. For optimal fat reduction, muscular toning, and cardiovascular health, it is advisable to engage in both aerobic and resistance exercise. Colleges, gyms, and community centers ought to endorse workout initiatives and awareness campaigns that are accessible for overweight women to participate in. The study was restricted to female participants aged 22 to 35 years, hence constraining the generalizability of the findings to other age demographics and males. The sample size (n=60) was limited, requiring future study to include a larger and more diverse population. The intervention persisted for merely six weeks, necessitating more experiments to ascertain the durability of the outcomes. Unregulated dietary habits and lifestyle factors may have influenced the outcomes. Future research should include a larger sample size, encompassing individuals from various age groups, socioeconomic backgrounds, and both genders to improve generalizability. Prolonging the training regimens beyond six weeks would enable the evaluation of the long-term impacts and sustainability of aerobic and resistance training on obesity reduction. Research should examine the impact of combining aerobic and resistance training within defined protocols to determine the ideal equilibrium for weight reduction and fitness improvement. Integrating food regulation, nutritional assistance, and lifestyle modifications into the intervention would clarify the significance of exercise in obesity management. Subsequent research may

assess the impact of exercise on mental health, motivation, self-esteem, and adherence, as these factors considerably influence weight management.

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