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The apply some of programs (sports equipment, running, and diets) and its impact on the elders' weight, diastolic blood pressure

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***Abstract*---**The study aims to identify the Apply some of Programs (Sports Equipment, running, and diets) and its Impact on the Elders' Weight, Diastolic blood Pressure. The sample includes 48 elders and divided into (4) equal groups including the control group. Pretests and measures have been taken on Jan. 29th 2021 at 9:00 a.m and post tests and measures on April 18th 2021 at 9 : 00 a.m. Along 10 weeks, different programs are used in the experiments. The scores are handled statistically. The results revealed that there are differences of statistical significance of the study variables between the pretests and posttests. When we compare between groups and within the same group, there are differences of statistical significance in weight only. But there are no significant differences in diastolic and blood pressure due to the approximation of the three groups results.

***Keywords*---**sport equipment, elders, running, diets.

Introduction

Elders are one of the important pillars of any society. They need special care based on health standards, where many of them suffer from chronic health problems. These problems resulted from lack of necessary care especially in the government nursing homes of the most of Iraq governorates. These homes provide three meals per day, which is more than their needs in addition to lack of motion or sport. Eating unbalanced food, take away, processed drinks and food, and using technology and cars lead to limitations of elders' movement. Moreover, This

routine changes the physiological systems of the body organs and increase elders' weight. Therefore, changes appeared like weight gain and increase the variables of (blood pressure in general, and diastolic blood pressure in particular). So, some programs should be applied including (Practical use of Sports Equipment, running, and diets) to control these variables taking into consideration the intensity of the exercise with the elders' age.

The Study Importance

The importance of this study in Iraq comes from its rarity and serves elders category and its impact on their health.

The Study Problem

Elders in Iraqi city of Najaf nursing home suffer from the consequences of using technology and free services provided in the nursing home, which makes them limited in their movement and activity. Due to eat unbalanced three meals that are more than body needs, lack of sport, and certain health issues appeared. Also, the programs followed in the nursing house that does not pay attention to diets and their calories, lack of recreational and sport programs motivated the researcher to investigate this problem and find its solutions. The researcher has utilized previous studies in this field including Ali Ahmed Alawady[1] and Jawad Kadhm Obaid : 2019, and Computation of Climate and Physiological Impact on Weight by Using Recreational Sport, Ali Ahmed Alawady: 2018 in his study "The Effect of Sports and Diets Programs on Weight, Blood Pressure, and Biochemical Parameters of Tissue Oxygen in Aged Men" and Roberts, Christian K., and R. James Barnard, 2005 "Effects of exercise and diet on chronic disease."

The Study Goals

The study aims at identifying the Apply some of Programs (Sports Equipment, running, and diets) and its Impact on the Elders' Weight, Diastolic blood Pressure.

The Study Hypothesis

There are differences of health and statistical significance in favour of the experimental groups in comparison to control group and among the experimental groups.

The Study Limitations

Human: elders in the nursing house in Al-Diwaniyah city
Spatial: indoor hall in nursing house
Time: from 01/02- 15/04/2021.

The Study Procedures

- The Study Approach: the researcher used an experimental approach.

- The Study Sample: it included (48) elders. It was divided into four equal groups (12) for each one.

The Study Equipment and Tools

Weight and height scales, (2) Sphygmomanometer, blood analyzer, (2) bikes, (2) massager, mechanical balance for foodstuff, measuring tape (100 M.), (4) stop watch and health record attached in appendix (1).

Tests

- The researcher has tested and measured elders' (height, weight, and diastolic blood pressure test).
- the researcher used (Cooper 1982) test for elders' physical fitness. The results were below the average because they do not practice any sport exercises for a long time. The researcher has to consult prof. Raheem Al-Safy, international expert in physiology of elders' training). The researcher has been directed that the maximum intensity of training should be below average accompanied by doctors supervised training elders. Therefore, two programs were designed for running and using some sport equipment.

Study Programs

- Running program:
  The researcher has designed a training program based on theoretical and practical studies including (Laursen Adam Hoegsbro 2012:1), which showed that running and walking have relative importance on physical activity and metabolism. The researcher has presented the program to consult sport physiology experts, doctors of internal medicine, cardiology and neurology as attached in appendix (3). The training program includes 6 units per week and the seventh day is a rest. The unit time is (30) minutes at 5:00 p.m. The place is the indoor hall of elders' nursing house in the Iraqi city of Al-Najaf. The duration of the program is (10) weeks. The study has been conducted with the help of the physiological, training, medical in addition to the researcher.
- Diets Program:
  The researcher has consulted several theoretical and application sources regarding elders' nutrition including (Ali H. Mohammed and Mona Abdulwahab Khaleel, 2016:1). While (Christian K. Roberts and R. James Barnard 2005:3) study refers to the effects of sport and diet on preventing chronic diseases. The researcher prepared a dietary program based on the food in the governmental nursing house, and on his experience in diets and therapeutic sport programs. The researcher designed a program presented for nutrition experts. The researcher implemented the program and supervised, together with the nutritionist, since they are in the nutrition group in appendix (2), on distributing food rations. The appendix (4) consists diets appendix in which (3) low calories meals per day are given for elders (breakfast, lunch and supper) for 6 days and the seventh day is a free day. The meals of the first week has been generalized on the other nine weeks. The only change is the forwarding and back warding days and

maintaining the same calories of the first week so the program duration (10) weeks.

- Program of using sport equipment:
  The researcher has prepared two programs using sport equipment (electrical massager and a bike) mentioned in appendix (5).Through consulting theoretical and practical sources, gym programs and physical therapists, the program duration was (10) weeks distributed on (6) daily training units per week and the seventh one is rest. The time of each unit is (30) minutes implemented at 5:00 p.m. in the indoor hall of elders' nursing house in Al-Najaf. Preparation and massage of all body muscles through an electrical massager controlled by the researcher with a timer. There are no side effects for using this massager. A bike with stop watch, speed regulator, distance measure and pulse. Bikes are chosen because they fit the elders' situation and safe and based on the study of (Adrian Bauman et al 2011: 761), which showed that bike is similar to regular bicycle in consumed energy. The training program is attached in appendix (5) and supervised by the supporting team in appendix (2).

Exploratory Experiment

To ensure the accuracy and validity of the equipment, the researcher has made an experiment on (3) elders in the indoor hall of nursing house on Jan. 25th 2021 at 9:00 a.m.

Table (1)
Sample homogeneity of all groups in the study variables

variables	Measuring unit	Arithmetical mean	Standard deviation	Difference coefficient
weight	Kg.	71.762	1.068	%1.488
Diastolic blood pressure	mmHg	89.800	2.114	%2.354

The value of difference coefficient is under (%30) and this refers to homogeneity

Table (2)
Equivalence among study groups

variables	Source of difference	Total of squares	Freedom degree	Squares mean	(F) calculated value	significance
weight	Among groups	0.019	3	0.006	0.005	random
	Within groups	44.475	36	1.235		
Diastolic b. pressure	Among groups	0.000	3	0.000	0.000	random
	Within groups	174.400	36	4.844		

*F calculated value at significance level is (0.05) and freedom degree is (3-36)= (2.86)

Statistical Tools

SPSS is used to handle raw data statistically.

Results and Discussion

Table (3)
Statistical results of the study variables for the four groups (pre and post)

activity	tests	Pre		post		(F) calculated value	significance
		mean	Standard deviation	mean	Standard deviation		
Running group	weight	71.800	1.032	69.800	0.888	18.974	significant
	Diastolic B. pressure	89.800	2.201	87.500	1.779	10.776	
	LDL	168.40	3.438	164.10	4.012	12.836	
Diets group	weight	71.750	1.184	70.450	1.141	9.750	significant
	Diastolic B. pressure	89.800	2.201	88.000	1.825	4.323	
Sport equipment group	weight	71.750	1.111	70.900	1.100	11.129	significant
	Diastolic B. pressure	89.800	2.201	88.300	1.946	9.000	
	LDL	168.40	3.470	166.00	3.887	10.854	
Control group	weight	71.750	1.111	71.450	1.116	2.714	significant
	Diastolic B. pressure	89.800	2.201	89.500	2.460	1.964	

*F calculated value at significance level is (0.05) and freedom degree is (9)= (1.833)

Table (4)
Statistical results of the study variables among the four groups (pre and post)

variables	Source of difference	Total of squares	Freedom degree	Squares mean	(F) calculated value	significance
weight	Among groups	14.650	3	4.883	4.293	random
	Within groups	40.950	36	1.138		
Diastolic b. pressure	Among groups	21.675	3	7.225	1.768	random
	Within groups	147.10	36	4.086		

	Within groups	538.10	36	14.947		

*F calculated value at significance level is (0.05) and freedom degree is (3-36)= (2.86)

Table (5)
Least significant difference among the four groups of weight variable

group	Mean differences	Significant level	significance
G* 1- G2	0.650	0.181	random
G1- G3	1.100*-	0.027	significant
G1- G4	1.650*-	0.001	significant
G2- G3	0.450-	0.352	random
G2- G4	1.00*-	0.043	significant
G3- G4	0.550-	0.256	random

*G= Group.

Results Discussion

Table (3) shows that the mean of the three groups that used the programs of (Sports Equipment, running, and diets) and the control group have significant differences between the pretests in comparison to posttests. The T value at significant level (0.05) and freedom degree (9) = 1.833 in the variables of weight. (paul S. Maclean et al 2011: 581) refers to that the biological element is responsible of balance in case of changing behavior pressures. WHO refers in its bulletin "Diet, Nutrition and Prevention of Chronic Disease" that the majority of people do not practice sport and they should change their diet to maintain their health. This idea motivates the researcher to apply his program and minimize weight, diastolic and blood pressure for all means in the posttest. The reason of similar results as seen by the researcher is the affectivity of programs (each program alone). As health is concerned, the programs have tangible effect on the population of the sample. In the groups of running and sport equipment, there are physiological responses and adjustments. The balance between (practicing sport in the two programs, diets and their produced calories) has made differences due to energy release that leads to lose weight, decrease diastolic and blood pressure. There is a kind of improvement in the physical fitness. (Rendos et al. 2015) points out that biking increases the maximum use of oxygen, energy production and burns fat. (Zabo et al. 2015) confirms that biking has physiological benefits that improves the efficiency of body organs. The researcher has affirmed that elders had limited movement before the two programs, and the improvement is the result of repeating movements and the use of moderate intensity till it reaches below average. Therefore, the gradual training whether in running, bike or massaging chair programs have an influence on the elders. This notion is supported by (Smith et al. 2013) who says that it decreases weight. (Kang, 2005) points out that the change of exercise intensity leads to increase blood plasma. (Jensen and Richter, 2012) shows that several exercise effects are related to glucose metabolism. The diets program has a positive effect on the study variables so it has significant effect. Due to eat rationed low calories food fit to their ages, the changes come from applying the three programs and this view confirms (Booth et al., 2012) view that many practiced sport to improve their

health and metabolism. Therefore, exercises are the initial effective and low cost intervention to prevent health problems and metabolism disorders. Table (4) shows that the source of difference among groups and with groups in the (pre and posttests) have significant effect. Based on the researcher's opinion, weight has achieved significant level because of on the effective programs, which shows clear improvement and consequently weight loss. While diastolic and blood pressure have insignificant level. Diastolic blood pressure is unstable and affected by the social conditions. But there is a slight difference that is statistically insignificant, health significant. The running group has a numerical difference between the pretest and the post one and decreased in unequal rates (2.300) degree, the diet group is (1.800) and the sport equipment is (1.500). Despite the decrease of diastolic blood pressure, it maintains its position within scale of WHO (85-89) and these rates are normal because they are adults whose rates are (90) in normal condition and Iraqi environment. The reason of this level is the limitation, mechanical nature and elasticity of their arteries and their physiological and biological condition.

The researcher concludes the following

- The application of some experimental programs (running, sport equipment, and diets) have created significant differences and health improvement in (weight, diastolic and blood pressure) between the pretest and the post one in favour of the posttest.
- When comparing among groups and within groups in the pretests and post ones, they have statistical significance in weight only and insignificant in (diastolic blood pressure) due to the results approximation.

Recommendations

Based on the conclusions the researcher reached, the researcher recommends the following:

- Repeat the study with different degree of intensity to reach average degree and a longer period of time as (6) months.

Appendices

Appendix (1) Sample of data application of the four groups

G*. name	No.	Measures and scales							
		age	height	weight		Diastolic B. pressure		LDL	
		pretest	pretest	pretest	posttest	pretest	posttest	pretest	posttest
	1								
	2								
	3								
	4								
	5								
	6								

	7								
	8								
	9								
	10								
	11								
	12								

*G= group

Appendix (2) Supporting tea

No.	Supporting groups	Triple name	office	specialty
1	Group of taking height, weight and jogging training	Asst. prof. Hikmat Al-lamy PhD	College of medicine/ Al-Qadisiyah university	Training physiology
		Asst. prof. Ahmed Alnaeely PhD	College of education/ Al-Qadisiyah university	physiology
		Asst. prof. Dhafer Abd Al-kadam	College of education/ Al-Qadisiyah university	physiology
2	Group of checking blood pressure and health supervision	Asst. prof. Ali Jawad PhD	College of medicine	Consultant on internal medicine
		Lecturer. Mohammed Hasan PhD	College of medicine	Senior resident doctor
3	nutrition group	Prof. Ali Ahmed Alawady PhD	College of education	Therapeutic sport
		Hussein Mohammed Ali	An employee/ Al- Najaf nursing house	Nutrition employee

Appendix (3) Running program (10) weeks, (30) minutes for each unit

week	Preparation and warming up for 15 minutes	Primary and concluding part
1st	Warming up of all body joints in standing position (arms, hip joint, trunk and feet) left and right then moving the head around and left and right, then walking slowly and rotate the body to stimulate muscles and joints to start trotting.	Running with intensity below average for 3 minutes, slow trotting for 2 minutes then running for 3 minutes and 2 minutes cooling down with slow walking for 5 minutes.
2nd		Running with intensity below average for 3 minutes, slow trotting for 2 minutes then running for 3 minutes and 2 minutes cooling down with slow walking for 5 minutes.
3rd		Running with intensity below average for 3 minutes, slow trotting for 2 minutes then running for 3 minutes and 2 minutes cooling down with slow walking for 5 minutes.
4th		Running with intensity below average for 3 minutes, slow trotting for 3 minutes then running for 4 minutes and cooling down with slow walking for 5 minutes.
5th		Running with intensity below average for 3 minutes, slow trotting for 2 minutes then running for 3 minutes and cooling down with slow walking for 5 minutes.

6th		Running with intensity below average for 2 minutes, slow trotting for 3 minutes then running for 5 minutes and cooling down with slow walking.
7th		Running with intensity below average for 2 minutes, slow trotting for 3 minutes then running for 5 minutes and 5 minutes cooling down with slow walking.
8th		Running with intensity below average for 1 minute, slow trotting for 3 minutes then running for 6 minutes and 5 minutes cooling down with slow walking.
9th		Running with intensity below average for 1 minute, slow trotting for 3 minutes then running for 6 minutes and 5 minutes cooling down with slow walking.
10th		Running with intensity below average for 1 minute, slow trotting for 2 minutes then running for 7 minutes and 5 minutes cooling down with slow walking.

Appendix (4)
Diets Program for (10) weeks

meal	Days of week					
	1st	2nd	3rd	4th	5th	6th
breakfast	Cup of skimmed milk with tea (50) C.*, one piece of Kiri cheese (162) C. and quarter of bread (25 gr.) (35) C.	Cup of skimmed milk (50) C.*, small loaf of bread (50) gr. (70) C. small cup of tea with teaspoon of sugar (60) C.	A big size boiled egg (79) C., half of big loaf of bread (25) gr. (35) C. and small cup of tea with teaspoon of sugar (60) C.	28 gr. Kraft cheese (80) C., (50) gr. Of bread (70) C. and half cup of tea with teaspoon of sugar (60) C.	A big fried egg (91)C., half of big loaf of bread (50) gr. (70) C., and half cup of tea with teaspoon of sugar (60) C.	100 gr. Of rice with milk (210) C., and half cup of tea with teaspoon of sugar (60) C.
Total	247	180	147	240	221	340
Lunch	100 gr. Rice (116) C., 150 gr. Spinch broth (54) C., 50 gr. Brown bread (114) C., (100) gr. Celery (8) C., (10)	42 gr. Of veal with soup (142) C., white loaf of bread (100) gr. (234) C., 100 gr. Radish (25) C., half cup of apple juice	200 gr. Eggplant broth (80) C., 100 gr. Brown bread (229) C., 100 gr. fresh onion (23) C.,	150 gr. Boiled peas with boiled rice (210) C., 300 gr. Okra (96) C., 100 gr. Parsley (28) C.,	300 gr. Dolma of grapes leaves (191) C., 200 gr. Tomato & green onion slices (92) C., medium banana	170 gr. Grilled fish (273) C., 100 brown bread (229) C., 100 gr. Leek (20) C., cup of lemon juice (7) C. and half cup of tea with

	pieces of dates (150) C., and half cup of tea with teaspoon of sugar (60) C. then drinking cup of water.	(60) C., and half cup of tea with teaspoon of sugar (60) C. and drinking cup of water.	50 gr. Sweet (20) C., and half cup of tea with teaspoon of sugar (60) C. and drinking cup of water.	100 gr. Lettuce (11)C., 100 gr. Kiwi (49) C. and drinking cup of water.	(49) C. and half cup of tea with teaspoon of sugar (60) C. and drinking cup of water	teaspoon of sugar (60) C. and drinking cup of water
Total	502	501	412	454	516	689
Supper	250 gr. Fat free cheese mixed with macaroni (415) C., 100 gr. Parsley (28) C., diluted cup of lemon (5) C.	100 gr. Grilled veal (273) C., 100 gr. Big loaf of bread (140) C., 100 gr. Parsley (28) C., 150 gr. Strawberry (42) C.	250 gr. Tomato mixed with egg fried in sunflower oil (122.5) C., big brown loaf of bread (100) gr. (229) C., 100 gr. Lettuce (22) C. and small plate of jelly (59) C.	200 gr. boiled potato (170) C., 75 gr. Medium loaf of bread (85) C., 200 gr. Basil (100) C. Kiwi (49) C.	57 gr. Fat free Mutton broth (90) C., 100 gr. Big loaf of bread (140) C., 250 gr. Cucumber with lemon salad (113.5) C. medium sized red apple (75) C.	84 gr. Grilled and skinned chicken (232) C., 50 gr. Small loaf of bread (100) C. and diluted juice of lemon with water (5) C.
Total	448	473	432.5	404	418.5	407
Grand total	1197	11554	991.5	1098	1155.5	1266

*C. Calore

Appendix (5)
The program of using bike and massager, (30) minutes per training unit

week	Type of equipment	Preparation and Warming up for 10 minutes	15 minutes for primary/ concluding parts (cooling and rest) 5 minutes
1st	Massaging chair	Preparing body joints through warming up from standing position for 3	Sitting in the massaging chair for 3minutes. The chair moves in different ways to massage body muscles. Then getting up and

		minutes, regular walking 3 minutes the slow walking for 4 minutes	walk slowly for 3 minutes, quick walk for 3 minutes, slow walk for 3 minutes, then jogging below average for 3 minutes and 5 minutes for cooling and rest.
2nd			
3rd	Massaging chair and bike	Preparing body joints through warming up from standing position for 3 minutes, regular walking 3 minutes the slow walking for 4 minutes	Sitting in the massaging chair for 3minutes. ride the bike with slow motion for 1 minute, then 3 minutes below average intensity. getting down and walk slowly for 3 minutes, jogging for 2 minutes below average and 5 minutes for cooling and rest.
4th		Preparing body joints through warming up from standing position for 2 minutes, regular walking 2 minutes the slow walking for 3 minutes then sitting in the massage chair to massage body muscles.	Regular walking for 3 minutes, slow biking for 1 minute and increased intensity to below average for 3 minutes. Getting down the bike and walk slowly for 3 minutes. Then biking with below average intensity for 2 minutes. Jogging with below average intensity for 3 minutes. Body cooling and rest for 5 minutes.
5th		Preparing body joints through warming up from standing position for 3 minutes, regular walking 3 minutes the slow walking for 4 minutes	Ride the bike with slow motion for 1 minute then with below average intensity for 4 minutes. Getting down the bike and walk slowly for 3 minutes. Sitting in the massage chair for 3 minutes. Then jogging with below average intensity for 4 minutes. Finally, Body cooling and rest for 5 minutes.
6th		Preparing body joints through warming up from standing position for 2 minutes, regular walking 2 minutes the slow walking for 3 minutes then sitting in the massage chair for 3 minutes.	Ride the bike with slow motion for 1 minute and with below average intensity for 4 minutes. Getting down the bike and walk slowly for 3 minutes. Then biking with below average intensity for 2 minutes. walking with below average intensity for 3 minutes. Then jogging with below average intensity for 2 minutes. Finally, Body cooling and rest for 5 minutes.
7th		Preparing body joints through warming up from standing position for 3 minutes, regular walking 3 minutes the slow walking for 3 minutes.	Sitting in the massaging chair for 3minutes. walk slowly for 3 minutes. Then biking slowly for 1 minute then with below average intensity for 3 minutes, walk slowly for 3 minutes, jogging for 2 minutes below average and 5 minutes for body cooling and rest
8th		Preparing body joints through warming up from standing position for 3 minutes, regular walking 3 minutes the slow walking for 3 minutes.	Sitting in the massaging chair for 3minutes. walk slowly for 3 minutes. Then biking slowly for 1 minute then with below average intensity for 3 minutes, walk slowly for 3 minutes, jogging for 2 minutes below average and 5 minutes for body cooling and rest.

9th		Preparing body joints through warming up from standing position for 3 minutes, regular walking 5 minutes the slow walking for2 minutes.	Sitting in the massaging chair for 3minutes. walk slowly for 2 minutes. Then biking with gradual and continuous speed for 1 minute then with below average intensity for 2 minutes, walk slowly for 3 minutes, jogging with intensity below average for 2 minutes below average and 5 minutes for body cooling and rest.
10th		Preparing body joints through warming up from standing position for 3 minutes, regular walking 5 minutes the slow walking for 2 minutes.	Sitting in the massaging chair for 3minutes. walk slowly for 2 minutes. Then biking with slowand continuous speed for 1 minute then with below average intensity for 1 minute, and for 4 minutes with average speed, 2 minutes with very slow motion. Getting down and walk slowly for 2 minutes, with intensity below average and 5 minutes for body cooling and rest.

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