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# Propose an adapted physical program to improve elderly flexibility

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**Su*mmary:***

The current study aims to find out the impact of the adapted physical recreational program to improve the flexibility of the elderly For this purpose, we used the two-group pilot curriculum on a sample consisting of 16 elders to two groups, For this purpose, an adapted recreational programme has been prepared to improve the flexibility of the members of the pilot group. After collecting and statistically processing the results, the following results have been achieved.

- Statistically significant differences between tribal and postgraduate tests in the test group's flexibility and in the interest of remote testing.
- Statistically significant differences in remote testing between the experimental and control groups in the flexibility and for the experimental group's benefit.

**Keywords:** physical program, recreation, flexibility, elderly.

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## 1. Introduction:

The dramatic and spectacular technological advances of modern times at all levels have led to a lack of human mobility and thus physical and physiological competence, making him susceptible to many diseases, so-called immobility diseases such as cardiovascular disease. obesity, lower back pain, sugar, high blood pressure, cholesterol, etc. In this regard, most of the world's nations have tended to take care of the health of individuals, The integration of their personalities has become a matter of concern and care so as to provide the individual with a stable life in which he or she feels satisfied, reassured, happy and well-being in order to provide physical and psychological comfort. **(Puppy Muhammad and Others, 2020, p. 4)**

Sports activities in general and physical exercise in particular are among the most important causes of prevention in various tooth boilers. They improve the functional capacity of different body organs as well as their positive effects on the psychosocial aspects of their practitioners, thus helping the individual to adapt to the different attitudes directed by them (Salwa, 1993, p. 20), so that fitness and sports programmes for all are no longer limited to a specific age and are no longer confined to a class of people, but become an essential necessity and need for each age and Yusuf Assad states that growing up is an inevitable stage in our lives if we write to survive. Therefore, developed countries are interested in the category of older persons and have initiated scientific planning of services for the advanced age groups. In addition, several medical studies have revealed that the attendance of simple exercise three times a week, especially those over the age of 50, contributes to the regeneration of their muscle activity, as was the case with young people, A teaching course was held in Germany at the Institute of Mathematical Sciences, which was devoted to the impact of sports training on untrained older persons. Among the results of these studies, it showed that the abilities of physical results increase up to the age of 70 and can improve, Both muscular strength and flexibility, as well as joint movement **(Lemoui, 1986, p125).**

Zahiyah Marzouq indicates that older persons have specific characteristics and requirements and their leisure time constitutes a large space and requires certain types of targeted programmes such as cultural and recreational programmes and sports activities, Sports recreational programmes are of great value at this stage s health ", which plays an important role in maintaining general fitness and in preventing body sagging and weight gain and is a good aid to him in self-entertainment, compensating for a lazy and lethargic life and alleviating anxiety caused by psychological stress and nervous tensions experienced by a human being of this age **(Ibrahim, 1996, p. 20).**

Sprymont (2005) Sprimont noted that the benefit of adult physical activity is to maintain the trait of handling, muscle strength, flexibility, as previous studies have revealed that regularity in simple physical exercise twice a week, especially those over 60 years of age, is to regenerate their muscle activity as was the case with young people. (Ben Sahraq Al-Tayeb, Ben Zeidan Hussein, 2019, p. 319), and experiments of scientific studies applied in Germany at the Institute of Sports Sciences dedicated to the impact of sports training on untrained elderly people. Among the results of this study showed that the results of physical abilities rise up to the age of 70 and can improve both muscle strength, flexibility and joint mobility. and some studies have tried to pay attention to sports recreation, such as Hornik and Skladjner. (1981skladjner & hornik), Salwa Abdul Hadi Shakib (1993), and Sultan Abdul Samad Ismail (2005) which confirmed sports recreation activities for the elderly and revealed the relationship between leisure activities and the demographic and psychological characteristics of the individual and the psychological effects of such activities for the elderly, **(Belaidouni Mustafa, 2016, p. 284)**.

Sports recreational services for the elderly are a human duty. The scientific input to the planning of recreational services is perhaps to recognize the interests of this age group in relation to leisure and recreational activities of different types. Through our field visits, we found that older people in Algeria have the desire and motivation to engage in physical and sporting activities but in an unscientific way to prevent health. in the absence of sports recreational programmes consistent with their physical abilities and desires, On this basis, an adapted recreational sports programme was built to improve elderly people's resilience We should like to ask the following questions:

**-**Does the proposed sports programme affect the elderly's flexibility**?**

## .2.1Search Assumptions:

-There are statistically significant differences between tribal tests and the dimension in the test group's flexibility.

-There are statistically significant differences in the dimensional test between the experimental and control groups in flexibility.

## .2 Study methodology:

## .1.2 Curriculum used:

In this study, we had to follow the experimental approach using the experimental design of the two pilot groups and the control group.

### .2.2 Sample Search:

The study sample consists of 16 sports practitioners, who are older people aged 55-70 years.

## .3.2 Areas of Research:

a. " Spatial area:
Tribal and remote tests were carried out by the neighbourhood compound Hahbah.
b. Temporal area:
The survey was conducted on 4/02/2021, and the same test was returned on the same sample (Al-Ba 'adi) on 11/02/2021.
The study sample consisted of 16 paws practising sports, divided into two pilot group groups (8) individuals, and one officer (8) individuals, taking into account homogeneity in the sample's characteristics.
c. Human field:
The study sample consisted of 16 paws practising sports, divided into two experimental group and a control group taking into account homogeneity in the sample's characteristics.
.3.2Search Tools:
The researcher used several research methods to access the data required in the study. The study tools were:
- Sources and references.
- Interviews with specialists and doctors
- Physical measurements and tests.
- Statistical Methods

## 1.3.2 .Physical Tests:

In our study, we will serve three tests for measuring flexibility:
First Test (Couberry): Sitting Test Long Bend Stem in Front
Purpose of test: Measuring spinal flexibility
Tools: Box
Test specification:
The lab sits in front of the box in a sitting position long with the individual arms and shoulders in front of it to reach the furthest range of movement of the torso while fixing the feet secured, fully singled and mounted in the front wall of the box from the front.
Registration: The distance achieved by the laboratory in centimetres is recorded in the two attempts, calculating the longer distance.
Second test: Test the elasticity of the torso and neck
Purpose of the test: Measure the elasticity of the torso and neck
Tools: rug, ruler or tape measuring
Test specification:
- The lab flatters on the abdomen with hands behind and palms on the seat, the middle is installed by a colleague
- The ruler or meter is placed vertically in front of the lab head

- The neck is installed at the torso level with the torso slowly lifted for maximum range and the reading is measured and recorded at the lab chin level
- Records readings for the nearest inch.
- The distance is recorded in inches from the rug level to the bottom of the chin
- Reading is bottom to top (zero lowest degree)

Then you score the best readings for the best of three attempts
Third test: Stand open feet spaced for maximum range
Purpose of the test: Measure the flexibility of the pelvic joint
Tools: Measuring tape
Test specification:
From the position of standing open work on the spacing of the feet to the maximum extent by fixing one foot and moving the other foot in the opposite direction to the greatest extent possible, measuring the angle between the thighs is the indicator of the elasticity of the pelvic joint.

## 4.2. Exploratory experience:

The survey was conducted on a sample of the elderly (55-70 years) who numbered 03 people They are not part of the basic experience, and the objective of this experiment was to determine the validity of these tests to be used in the basic experiment as well as to identify the veracity, consistency and objectivity of the tests to reach accurate and controlled results during the application of the tests. The survey was conducted on 4/02/2021 and returned the same test on the same sample dimensional on 11/02/2021.

1.4.2. Scientific foundations of tests:
a. " Logical honesty (arbitrators' honesty):
The modules for the proposed program were presented to a group of expert gentlemen, who approved the validity of these modules in the game program, and after some modifications.
b. Test Stability:
The researcher used tribal and remote tests to extract test stability.

| | Reconnaissance Tests | Constant Factor | significance level |
|---|---|---|---|
| 1 | Test Sitting Length Bend Stem in Front | 0,922 | Meaningful |
| 2 | Test the elasticity of the torso and neck | 0,891 | Meaningful |
| 3 | Stand open feet spaced for maximum range | 0,950 | Meaningful |

Table No. (1) shows the consistency of physical tests

## 5.2. Training Programme:

The "Conditioned Recreation" training programme included 36 training modules implemented through each (20 recreational mobility exercises), the educational programme took 12 weeks, during which training modules were distributed by three training modules per week, implemented days (Saturday, Monday, Thursday) The training module time (75 minutes), reached the total time of the program (2700) minutes, where the researcher selected a group exercise and saliva group to improve the flexibility of the individual experimental group, each module consists of three sections:

1. Preparatory section: time (10) minutes.

Chairman's section: Time (50) minutes, including:

A- Educational activity: 20 minutes.

B - Applied activity: time (30) minutes.

3. Closing section: time (15) minutes.

1.5.2. Rationing physical pregnancy:

All training pregnancy scores are used to develop the individual's or player's level during all pregnancy courses, as the change in pregnancy scores provided according to specific considerations is necessary. Each of them has an important and effective role to play in raising the individual's standard. In the light of the frequency and intersectional rest between the proposed physical exercises to reach as many groups as possible, after which the person cannot perform properly. Researchers relied on the levels and proportions of training pregnancy according to Mufti Ibrahim Hammad (2001) as follows:

- Positive rest less than 30%.
- Light load (below average) from 30% - 50%.
- Average load of 50% - 75%.
- Maximum load of 75% - 90%.
- Maximum load of 90% - 100%.

2.5.2. Some physical exercises used in the training programme:

The proposed program consists of a set of aerobic exercises based on walking and some group games such as:

- Walking exercises from 10D to 20D.
- Fast walking exercises (120-130 N/D).
- Bend the arms in half of the pump mode.
- Walk with top limb rotation.
- Throw the basket ball high and then receive it with both hands.

- Lengthening exercises of all kinds.
- Group games such as football basketball, table ball and racing.

3.5.2. Sports Program Directives:

- The head is raised and looking forward a few steps away, the lower jaw is in place Donshead, and the muscles should be simplified.
- The arm is angled from the elbow, with the hand moving to the imam and back so that the palm grip rises higher in the hand movement of the imam and reaches the thigh alignment in its movement backwards and should not swing in front of the body.
- The walk begins so that the front foot heel is on the ground first and then the rest of the man starts from the heel to the fingertips, and push the man's back fingers to lift them to the imam and so on.
- A person must heat up before walking, perform some hand movements and run in the place... Etc from 5-10D before fast walk.
- It is preferable to wear wide comfortable clothing that allows to get rid of sweat, choose a sneaker that fits the walking mechanic to be wide heel and elastic sole, and be a heel incubator without being tight on it.

6.2. Basic experience:

After reviewing references and programs on small games and social behaviour (Gror Muhammad and Others, 2020) (Ben Sahraq Al Tayeb, Ben Zidan Hussein, 2019) (Qurari Ben Ali, Buars Fatima Al Zahra, 2018) (Rahmani Mohammed, Tahir Rahmon, 2015).

Dr. Rahmani Mohammed, Tahir Rahmon, 2015, and Belaidouni Mustafa, Ben Zeidan Hussein, 2016, applied in Algeria's environment, were based on the program and modified in line with the requirements of the study.

1.6.2. Description of research group performance:

The sample personnel perform the training modules according to the days allocated to them according to the following steps:

- Heart rate measurement in rest (z/d), with blood pressure measurement in rest.
- The module begins with general warm-up exercises, various body muscles and special warm-up exercises in the preparatory department.
- The researcher with the supervising physician explains the way of walking while clarifying the distance and time during the main part, which will be applied during the training unit and according to the objectives to be achieved.
- The members of the sample perform a group of physical prolongation exercises prepared by the researcher and then move to the applied part of the main section of the training module.
- The training module ends with simple group games (calming down for the closing section).

- The researcher took into account the principle of repetition after the first weekend of the program where he refers **(Saleh al-Takriti, 1981, p. 63**): "It is gratifying and humiliating for individuals to play a game, and repeating it for an appropriate period contributes to the achievement of educational and biological objectives" **(Saleh, Tikriti, 1981, p. 64),** in addition, the researcher introduced the factors of change and diversification into each exercise, so that the searchers would not be sick and bored and reduce their motivation towards practice.

## 7.2. Experimental design:

The experimentation involves the formation and testing of premises and a good experimental design based on the competence and potential of the researcher to apply the foundations of the experimental design that serves as the executive plan of the experiment **(Salama, 1980, p. 82).**

The researcher should choose the right experimental design that provides him with minimal internal honesty and external honesty of the search results, and other experimental designs can be derived by making improvements to some other experimental designs (Return and Malkawi, 1987, p. 178) The researcher therefore used the experimental design called the "Single Group Pilot Design of Tribal and Remote Control Observation" (Van Dallen, 1985, p. 384).

1.7.2. Identification of study variables and how to adjust them

One of the characteristics of experimental work is to address certain factors under strictly controlled conditions in order to ascertain how a particular case or incident occurs and determine the causes of such occurrence (Van Dallen, 1985). The research included a number of variables:

a. " The independent (experimental) variant is:

- Adapted recreational programme.

b. The dependent variable is:

- Elasticity of the body in the elderly.

c. Non-experimental (extraneous) variables:

The intrinsic variable is defined as a type of independent variable that is not involved in the design of the research and is not controlled by the researcher but affects the results of the research undesirably and the researcher cannot observe or measure the intrinsic variable but assumes a number of extraneous variables and is taken into account when discussing and interpreting the results; These variables must therefore be identified and controlled **(auda and Malkawi, 1987, p. 137)**

2.7.2. Conditions of tests and accompanying factors:

It means all incidents that can occur during the trial period from 22/09/2019 until 25/05/2019, and have an impact on the variables as the research throughout the trial period has not been subject to any significant incident.

3.7.2. Experimental breakdown:

The experimental breakdown is intended to have the effect of interrupting or leaving some of the individual samples out of one of the test groups, affecting the level of improvement of flexibility of the sample personnel **(Salehi, 1974, p. 63)**. In our study, we did not record any interruption of the sample personnel from the training programme.

8.2. Statistical means:

The results of the study were analysed according to standard statistical methods using the Statistical Package For Social Sciences SPSS statistical programme.

- Average arithmetic: To identify the average grade distribution of the total score.
- Standard deviation: It is a measure of dispersion and defines us by degree of deviation.
- Binding coefficient: To know the degree of correlation between variables.
- Using the t-test where the tribal and post tests were compared.

## 3. Anchor Results:

1.3. Presentation of tribal results for the two research groups:

Table 2 Calculator values, standard deviation of tribal tests for sample study, calculated and tabular (T) values and type of difference to test flexibility

| Statistical milestones | pre-test | | Value (T) | | degree of freedom | Degree of probability | significance level |
|---|---|---|---|---|---|---|---|
| tests | s | ±B | calculated | tabular | | | |
| experimental | 3,04 | ,930 | 1,44 | 2,12 | 14 | 0.05 | non-significant |
| control | 3,49 | 0,61 | | | | | |

Statistical Reading:

The table shows the tribal test of the sample study in the flexibility test, where the experimental group achieved an average arithmetic of 3.04 and a standard deviation, 930, while the control group obtained an average arithmetic of 3.49 and standard deviations of 0.61, the T calculated for the same test was 1.44, which is less than the table T value of 2.12, at a degree of freedom of 14 and an indicative level of 0.05. This means that there is no moral difference between the experimental group and the control group in the flexibility capacity.

2.3. Showing tribal and remote results of the pilot group:

Table No. (3) Calculator values, standard deviation of tribal and remote tests of the experimental group, calculated and tabular (T) values and type of difference to test flexibility

| Statistical milestones | pre-test | | post-test | | Value (T) | | degree of freedom | Degree of probability | Difference Type |
|---|---|---|---|---|---|---|---|---|---|
| **tests** | s | ±B | s | ±B | calculated | tabular | | | |
| **experimental** | 3,04 | ,930 | 5,18 | 0,86 | 1,44 | 2,12 | 14 | 0.05 | meaningful |

Statistical Reading:

The table shows the tribal and remote tests of the experimental group as flexible, investigating the tribal test on an average calculation of 3.04 and standard deviation, 930, the dimensional test achieved an average calculation of 5,18 and standard deviations of 0.86. The T calculated for the same test was 9,50, which is greater than the T value schedule.6,03, at 14 degrees of freedom and an indicative level of 0.05. This means that there is a moral difference between the tribal test and the post test of the experimental group in terms of flexibility and in favour of the post test.

3.3. Comparison of remote results of control and experimental groups:

Table No. (4) Calculation circle values, standard deviation of remoteness tests of study sample, calculated (T) values, tabulation and type of difference to test flexibility.

| Statistical milestones | pre-test | | Value (T) | | degree of freedom | Degree of probability | significance level |
|---|---|---|---|---|---|---|---|
| **tests** | s | ±B | calculated | tabular | | | |
| **experimental** | 5,18 | 0,86 | 9,50 | 2,12 | 14 | 0.05 | meaningful |
| **control** | 3,67 | 1,11 | | | | | |

Statistical Reading:

The table shows the dimensional test of the sample study in the flexibility test, where the experimental group achieved an average arithmetic of 5,18 and standard deviation of 0.86, while the control group received an average calculation of 3,67 and standard deviation of 1,11, and the T calculated for the same test was 9,50Wahthe greater than the 2 tabular T value, 12, at the degree of freedom of 14 and the test level means that the test is a difference 0.05

## 4.3. Discussion of the results of the study:

From tables (3) and (4), there are morally significant differences between the tribal and remote tests of the experimental group, So the proposed program has had a positive impact on increasing the flexibility of the sample personnel and raising their fitness level for the benefit of the remote test and the impact of the proposed programme is evident through the dimensional couplings between the control group and the pilot group that were in favour of the pilot group, This indicates the effectiveness of the proposed programme at the expense of indiscriminate activities, as evidenced by the results described in the tables mentioned above s upper and lower limbs are enhanced by prolonged exercise that allows them to perform sports movements to the widest extent permitted by mobile joints such as: Hip mobility و Walking hip openers و Neck halfcircles Many studies have confirmed that this group needs care and attention and can cope with physical deterioration, including a lack of muscle size and strength resulting from ageing by exercising physical activities adapted to the characteristics of this category so that it can maintain and enhance muscle strength such as the study of both 2017Boonlerst Outayanik. Guizelini, Pedrode Camargo 2018 analyzed 10 studies, all of which demonstrated that physical and sports activities adapted to the elderly contribute to improving and enhancing the muscle strength of this group. The main purpose of this study was to systematically review the literature of studies on the impact of resistance training on the muscle strength of older people.

confirmed by the Swedish study **(Eriksson & Lindgerde, 1991)** conducted in Malmo, Sweden Women's Rights ", which included 260 men from 47 to 49 years of age, The participants' follow-up continued for six years, having been divided into two groups, One experimental and the other female officer, the experimental group exercised physical activity while adjusting their nutrition, The aim was to reach 45-60 minutes a day twice a week physical activities including walking, trot, physical exercise and some sports s physical fitness with low body mass **(Jason M.R Gill807-824, 2008,)**

According to Spillner 2005, based on 20 years of walking experience, moderate-intensity physical activities such as moderate-speed walking are best for any

human being at any age. The goal of sports training is to bring about structured and gradual physical and functional adjustment **(Spellner, Maggie 2005, p. 108)**. In order to achieve the objectives of the walking programme at constant rhythms for at least 30 minutes, with the heart reaching physiological excitement and the frequency of walking at least 3 times a week, recent medical studies have shown that systematic exercise contributes to reducing fat and raising body fitness. **(Jaafar, Haitham, 2014, p. 159)**, among these exercises (medium level) most weekdays such as walking 2mile for 30 minutes, study**) (Abdul Khaliq 2001**), the study aimed to attempt to identify the impact of the practice of physical walking on some physiological functions of the elderly, and the results of the study showed a decline in pulse rates after the walking pilot program from 86 pulses to 76 pulses, improved respiratory efficiency and a drop in weights for the sample of the study, consistent with the study **(Ali Ahmad Najib Al Awadi 2009, p. 172)** in which the researcher seeks to know the impact of two fitness-level sports walking and dietary programmes for men over 55. The results of the study were the effectiveness of the two programmes, the Sports Walking Program and the Diet Program, which achieved weight loss and improved fitness

**.4 Conclusion:**

Through what has been achieved in our study, the results obtained generally demonstrate the effectiveness of the adapted recreational sports program to improve the flexibility of the test sample members, similar to the control sample that was engaged in normal activities. This demonstrates the positive impact of the proposed program on its general practitioners, which confirms that the sports program helps advanced age groups improve their flexibility, whether spinal elasticity, limb elasticity or neck elasticity, and also helps to increase the efficiency of cardiac and physical fitness in general.

The researcher recommends the following:

-Encouraging the exercise of sports activities for the elderly due to their great importance in raising their fitness.

-Attention to the elderly segment by providing conditions and possibilities for physical activities and providing suitable places for walking, swimming and group games.

-Develop a media strategy that will contribute to the dissemination of health and sports awareness among members of the community, stimulating the risk of laziness and physical inactivity, especially in the elderly.

-The researcher recommends that scientific studies be conducted that would allow a more clear picture of physical activity and sport in the elderly category and raise fitness levels.

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