

PHYSICAL ACTIVITY AND QUALITY OF LIFE IN OLDER ADULTS

Gjulio Zefi¹, Ardian Shengjergji²

¹Department of Physical Education and Sports, Faculty of Education Sciences, University of Shkodra “Luigj Gurakuqi”, Shkodër, Albania, E mail: giuliozefi@yahoo.it

²University of Elbasan “Aleksandër Xhuvani”, Elbasan, Albania, E mail: ardianshingjergji@gmail.com

Abstract

Although there has been increased research and clinical attention given to the effects that physical activity has on quality of life among older adults, there is a lack of consistency surrounding the use of this term. As a result, attempts to examine what causes change in quality of life have been limited. This article critically reviews the literature on physical activity and quality of life in older adults. In so doing, attention is given to both quality of life as a psychological construct represented by life satisfaction as well as a clinical and geriatric outcome represented by the core dimensions of health status or health-related quality of life. The literature is also examined to identify potential mediators and moderators in the physical activity and quality-of-life relationship. Discussion of possible mediating variables reinforces the important role of perception when considering the beneficial effects that physical activity has on quality of life. From a public health perspective, understanding what may cause change in quality of life has significant implications for the design, implementation, and promotion of physical activity programs for older adults.

Keywords: *physical activity, quality of life, older adults, psychological, beneficial effects*

Introduction

Why should we do physical activities?

By the beginning of mid sixties, a great interest has increased concerning health and in particular the physical welfare. People started to be “shaken” from the laziness in order to improve the body shape and get back to the former appearance.

Why is this happening? There is an answer: *“Millions of people have experienced a better physical appearance than before and they are doing everything to keep it, simply because they feel much better”*. Being in a good shape, makes you feel mentally and physically capable, in harmony with the body and it increases the abilities to face everyday challenges. One of the most interesting things we face at individuals involved in physical exercises is that few of them tend to step backward while they have made progresses to reach the best physical shape. The reason is very simple; if they went back in that inactive life, they would not stand it.

Aim of Research

There is only one way to find out if you wish to feel better by having a good physical shape. Try and see that you will appreciate it. You should also be informed that there are some ways to gain and keep a good physical shape. If you do not like the idea of putting on trainers to jog, you may find other ways to feel well. All people who finish high school or graduate at university and have a sedentary job later, it means that for them this is the end of physical activities.

During the recent years, although the interest of people taking up any sport activity has increased, the ones older than thirty years old have abandoned any kind of physical exercises. It is important to stress that it is never too late to take up any physical activities, which makes you feel in good mood and shape as well. For middle aged people or the elderly ones, much more time is needed, but it will have results at the end.

In fact, getting older means to be strict to a physical schedule in order to reach a goal at the end. However different ages need different attempts. We will observe how we should keep the body in good shape in different life phases.

Research question

Do Physical activities lengthen life? Heart diseases are the main reasons of death in the developed world which causes sudden heart attacks, being the greatest killer compared even to cancer diseases. The goal of enjoying physical fitness is related to have a life longevity, which should stop appear the signs of the cardiovascular symptoms or to make them appear much late in time.

Too many people have stated that it has scientifically been proved that a good physical shape lengthen the life. Unfortunately it is not true. There have been many scientific testimonies based on this argument, but not to be considered as indisputable proofs. Therefore, we frankly state that the theses on “different forms of physical exercises allow us to live longer” there are more positive proofs than negative ones.

The first evidence is linked with London where the Prof. Morris has made a research about the ticket collectors and bus drivers of double -decker buses. The study has proved that the bus drivers who lead a sedentary lifestyle have had cardiovascular problems more than the ticket collectors who are on the move during their working shift. Prof. Morris has also revealed another case study with male officials in London, which resulted that the ones involved in physical activities were less exposed to cardiovascular problems.

There are some other studies based on this argument. The most important ones have been conducted in United States of America by Prof. Paffenberger; the first with loading and unloading workers of San Francisco's Harbor and the second with the graduated ones of Harvard University. Both studies have shown that a lot of physical exercises during loading and unloading work of harbor workers, but even the free time of the graduates at Harvard less is the danger of those suffering from early cardiovascular problems.

Most of the people support the idea that keeping body fit makes them feel relaxed and strong. The studies have shown that jogging improves not only physical conditions but psychological conditions too. According to the studies, the relaxing effects are dedicated to the fact that during the physical exercises the brain releases some natural substances, the same as morphine and endorphins. These substances increase the chances of relaxation and influence positively to increase also the physical output (productivity) while working. There are so many American and Japanese companies with full time instructors' team, which work for physical recreational for their workers. Elements in favor of physical exercises might be encouraging but not convincing. It might be possible that problems they provoke could be equal to those that could be avoided. Therefore, we state that it is important to practice physical activities gradually in order to minimize the risk of life while doing these exercises.

Some physiological aspects linked with the age:

Musculature:

When people get 45-50 years old the muscular weight reduces. This modification is linked with muscular atrophy and the increase of fatty substance and fat tissue. Some figures have displayed that healthy population of males and females between 20-70 years old have no significant differences in the relative composition of musculature, the fast fibers and slow fibers. The average value of slow fibers is 50-60% and only after the age of 75 a reduction of fast fibers in percentage is noticed.

The greater changes of muscles after the age of 60 consist in the reduction of fibers' section and the shrinking of the muscles. Also the content of phosgene and muscular glycogen is reduced together with volume reduction of mitochondria, which might influence on the drop of enzymatic activity. Electrophysiology studies have identified that the muscles of elderly people have had a progressive process of movements' reduction.

The muscular changes of old people are more of quantity than of quality. In fact the isometric force and the dynamic force present the same indications of the passing of time.

At the peak of 20-30 years old and a stable period at 40-50, the muscular force, that isometric and dynamic ones drop progressively and the reduction of movement at 65 years old people is almost the same for both types of muscular contraction. For example the maximum speed of stretching the knee lowers with the passing of years. Therefore, the changes of speed are less

noticed compared to the changes of strength. This fact supports the hypotheses that the maximum speed of contraction depends much more on the quality of the muscle than on the quantity of it.

The nervous system

Over the years the nervous system suffers a regress which is defined by the atrophy of nervous tissue. At this phase the nervous cells are not able to reproduce, so the loss of a cell is permanent, but the ability of nerves growing compensates the losses. This phenomenon is being stimulated by the physical activity and training and it is also present among elderly people with individual mutability. The reduction of speed of neurons' movement in nervous paths explains partly the loss of time reaction, which depends from the nervous-motor activity and the elasticity of joint's movements. The speed of moving when the command is given up to the execution of it, results to be diminished about 20-30% at the age of 60 compared to young people. So all these changes being also linked with the deficit of sensibility make clear the reduction of coordination, above all the difficulties of old people to handle complex sport movements.

Bones and Junctions

The most common phenomenon is osteoporosis which occurs over the years and deals with the reduction of minerals in the bony tissue as a result the bones are easily broken. Osteoporosis is as a result of problems with an inefficient diet, change of hormones and inactive physical activities. According to a bulletin of an Italian Association against osteoporosis, during 2010 in European countries one in three people is 65 years old and the number of fractures of femur was 972000.

The osteoporosis is the answer and the sedentary style of life too. Due to the bulletin the social cost of osteoporosis in Italy is one milliard euro a year out of which 600 million are only hospital cost. 35% of women over 50 years old suffer from osteoporosis and 50% of women over the age of 65% suffer different bone fractures.

During the last ten years different studies have been conducted especially from Anglo-Saxon learned man which have concluded that inactive physical activities might define the decrease of mineral level in bones and the absence of physical exercises for the prevention and treatment of osteoporosis. Prevention of losses of substances in the bones is the best defense against osteoporosis in both sexes. A study conducted in Welton England lasted 15 years and concluded that taking up regular physical activities since an early time and continuing with the passing of time increases the amount of lumbar bone. In fact greater the amount of bone reached at young age less is the danger of osteoporosis when getting older. Physical exercises being conducted on regular basis helps to improve equilibrium, coordination and strengthen the muscles reducing the risk of fractures, improving the quality of independent life for longer time.

Concerning joints, when we get older there is a progressive possibility of the calcification of ligaments and cartilages. But the natural decrease of joints' movement should not lower the physical activity, which would cause a further loss of joints' function and of muscles too. The gymnastics helps improve the movements and it results the best way of therapy of arthroses.

Cardiovascular Apparatus

Getting older means that there is less capacity of heart muscle's contraction and as a consequence less blood pumping and less capacity of cardiac frequency. Due to arteriosclerosis, the heart of an old person with the same cardiac frequency compared to that of a young person, not only pushes less blood per minute, but it is obliged to work harder.

Lowering of the cardiac performance accompanied with metabolic and functional changes of muscles defines a reduction of maximum consumption of oxygen, averagely 35% at 65 years old compared to a 20 year old person. This lowering has resulted higher among those people who have been involved in aerobic sport of agonistic type at a young age, but by giving up that sport they have abandoned any type of sports activity. It is lower among those who have been taking up physical activity after they got physically matured.

Breathing Apparatus

Lowering of breath function at old age is as a result of mechanical efficiency loss and of the lowering gases exchange of alveolus-capillary. The first defines the lowering of the maximum breathing, so that, it is the lowering maximum frequency and even the breathing capacity which is caused by the lowering of muscles efficiency of breathing. Therefore, it has averagely resulted that from 20 to 60 years old a reduction of 35% of maximum breathing. People around 70 years old who are involved in a aerobic activity from two to four times a week, have shown a higher value around 15% compared to those who lead a sedentary life as far as their living capacity has been concerned.

What is physical form?

In order to enjoy a good physical shape does not mean to train like an agnostic athlete. Moreover when we gain a good physical form, it is not anymore important to strain yourself physically in order to keep that form, three to four times training a week, each session half an hour would be more than enough. As far as the results we expect to have, different activities provide different results. In order to choose a basic activity for a program of physical activity, it is important to understand which basic physical activities are.

Force, resistance and elasticity

All people who do a labor job, particularly a loading worker or a carpenter, demand from their body above all STRENGTH, which is important to face the difficult tasks of the job and necessary RESISTANCE to perform it within certain hours.

But the STRENGTH and the RESISTANCE are not sufficient. A ballerina for instance the most has the most important thing to keep herself fresh and resilient. Having a good physical shape requires the combination of three elements: muscular strength, cardio-vascular resistance and the tendon –ligaments elasticity. However the greater benefits for the health and general physical conditions have been gained by strengthening the resistance.

The ability to keep a satisfactory physical activity for a long time has to be dedicated to the training. In order to have that physical activity is not efficient to make each muscle work but we should supply them with necessary food elements and the oxygen they need to produce necessary energy that they consume. The production of all this energy depends not only in the power of

heart functions, lungs and blood circulation but even the function of the muscles and this could be reached only by training of the RESISTANCE.

Cardiovascular resistance

The whole system which sends oxygen from the air directly to the muscles is called “aerobic system” and the training of the resistance is called “aerobic”. Based on the good function of the heart and lungs, it is so important for the whole organs of the body and not only for the muscles. The improvement of their functions through aerobic training helps to improve the health of the body and gives the sensation of having a good physical form. If the training tends to help improve life longevity, this should be dedicated to the benefits that the physical exercise causes to the lungs, heart and blood circulation. There are a lot of people who think that the training increases unavoidability for the strength of the muscles, but this should not make enthusiastic those ones who are involved in body building.

Nowadays none of the theories have proved that the increase of the muscles quantity has a positive effect as far as health and life longevity is concerned.

Totally different has been displayed the issue of ELASTICITY. Practicing some exercises, especially jogging and running – which may verify a loss of elasticity, because the muscles that take part in these exercises tend to slightly get shorten. Elasticity is so important in everyday life and it is necessary to save it with suitable exercises. The stretching exercises have been especially studied for this aim.

We state that today “gymnastics of muscle stretching” has had a great and successful development in everyday life. In other words, a different new style which includes stretching in everyday activities, it surely influences the emotional reactions, the ability of concentration and being alert to react in each situation. Physical activity is unavoidably mixed with physic activity too. Stretching, which in physically terms corresponds to demand for a greater movement in each direction, is clearly linked with “elasticity” of the thought and force impulse to reorganize our thoughts and behaviors. Because of this reason, that becomes a form of physical education which leads towards a dialogue of the body with intimate feelings at the same time.

For instance, during the time we practice stretching we should manage to improve joints movement and to have a better control of the muscles. Do you think that the effect should influence only in the physical sphere?

There are some many results that derive from the physical activity. First of all, if your movements are freely, they will be more harmonically and efficiently. Due to this, a positive desire springs to move and feel in harmony with your body. This “improvement” will make possible a reprocess of movements and behaviors, which are linked with mind renovation. Therefore, you should feel more stimulated to encourage your ideas and daily behaviors.

Conclusion

Based on all results defined from different studies, it is so remarkable the fact that the use of physical exercise among elderly people brings an improvement of bodily wellbeing.

The main objectives should be the improvement of movements in the joints, efficiency of muscles and the stability of aerobic capacity. The possible improvements of movements of the wrist or ankles, based on some previous experiences might lead to some the improvement of movements among people 60-75 years old up to 20-30%. The program should be compiled with

slow movement exercises, accompanied by static stretching repeated on regular basis at least twice a week. Even the muscular force might increase as a result of regular training 6 -50% according to the used techniques, strong will and longer training sessions. Aerobic capabilities of people over 55 years old may improve 5-30% according to the difficulty of movements and longer training sessions.

The visible improvements should be first noticed among people of 60 years old, with a cardiac frequency while working 130-150 beats per minute kept on this level for at least 30 min in a session. Less visible improvements might be gained when we keep the frequency 105-115 beats a min for about 20 min in a session.

Anyway, it is necessary to be stressed that a person not only in the beginning, but also when adapted with the session, should be trained regularly at least twice a week. The load should be increased progressively and the intensity even for a short period of time should be suitable for the training session conducted. Also, we should realize that a brake for two weeks is sufficient in order to have a regular come-back of the activity.

A great attention should be given to the warming up phase and the recuperation period. Since the recuperation capability of people of this age are low, a person of this age should respect the time of recuperation more than a young person does, especially for long and intensity sessions.

It is important to avoid face to face people with such a difference of age, for example, a race between grandpa and his nephew in a running track. Therefore, people who have been taking up sports in the past and decide to restart taking up again physical activity, it is important to start from the beginning in order to avoid any harm in muscles and tendons.

As far as training sessions are concerned, it is advised to attend at least three sessions a week. It is so important that an elderly age, when the person decides to take up regular physical activity, before to start he or she should check the efficiency of the apparatus and physical capabilities to avoid any harm.

At last, in order to have great profits from the physical activities try to follow these rules:

- Find or keep your ideal weight
- Check regularly your blood pressure
- Follow a regular healthy food regime

References

Tufts University and the Centers for Disease Control and Prevention (CDC). Growing Stronger: Strength Training for Older Adults. Available at:

<http://nutrition.tufts.edu/research/growingstronger>. Accessed February 22, 2007.

Rikli RE, Jones CJ. Development and validation of a functional fitness test for community residing older adults. *J. Aging Phys. Activ.* 1999;7:129–161.

Guralnik JM, Branch LG, Cummings SR, Curb JD. Physical activity measures in aging research. *J. Gerontol.* 1989;44:M141–146.

Diabetes Prevention Program Research Group. The influence of age on the effects of lifestyle modification and metformin in prevention of diabetes. *J. Gerontol. Sci. Med.* 2006;61A:1075–1081.

Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep.* 1985;100:126–131.

Jackson G. Fitness and exercise. 1985, Sal. Book. Yo. Wa

