

Benefit of Physical Exercise in Seropositive Patients

Bruna Peres Garcia Spanier de Oliveira, Julio Vicente Costa Neto, Julio Cesar de Faria Pastore, Fabiola Claudia Henrique da Costa, Carlos Alberto de Azevedo Ferreira

Abstract - The present study aims to analyze by the perception of seropositive individuals the improvement in the quality of life with the practice of physical exercise. The study was attended by 55 (fifty-five) HIV / AIDS divided into 30 (thirty) experimental group and 25 (twenty five) control group of both sexes. To collect the data, the study used the Quality questionnaire SF-36 life and 04 (four) objective questions with HIV positive people in the experimental group in order to identify an improvement in the quality of life of people living with HIV / AIDS with physical activities. The study made use of descriptive statistics using the mean, standard deviation and coefficient of variation and the inferential analysis was carried out a Student's t test to compare means of independent samples.
Index Terms-Physical Exercise, HIV/AIDS, Quality of Life.

I. INTRODUCTION

The Acquired Immune Deficiency Syndrome (AIDS) was presented and quoted by American researchers in the year 1981, where it was found that after the diagnosis and the appearance of the first cases, there was a growing demographic and epidemiological diffusion of the disease, becoming a pandemic reaching several Regions of the world. So widely discussed in research and academic, this disease has come to influence studies and the increasing mode of its propagation.

Acquired Immune Deficiency Syndrome (AIDS) is a serious pathology that develops from advanced stages of human immunodeficiency virus infection, Human Immunodeficiency Virus (HIV), resulting in the destruction of the immune system and Opportunistic infections [1].

According to [2], the syndrome is a disease of morbid state influenced by several factors presented by signs and symptoms produced by more than one cause. Regarding

Bruna Peres Garcia Spanier de Oliveira, Physical Education, Estácio de Sá University - Rio de Janeiro – Brazil.

Julio Vicente Costa Neto, Physical Education, Estácio de Sá University - Rio de Janeiro – Brazil.

Julio Cesar de Faria Pastore, Physical Education, Estácio de Sá University - Rio de Janeiro – Brazil. Laboratory of Physiology of Exercise & Measurements and Evaluation (LAFIEX), Estácio de Sá University - Rio de Janeiro – Brazil. Research Center in Sports Science, Health and Human Development (CIDESD), University of Trás-os-Montes and Alto Douro - Vila Real – Portugal (juliocesar.pastore@gmail.com).

Fabiola Claudia Henrique da Costa, Research Center in Sports Science, Health and Human Development (CIDESD), University of Trás-os-Montes and Alto Douro - Vila Real - Portugal.

Carlos Alberto de Azevedo Ferreira, Physical Education, Estácio de Sá University - Rio de Janeiro – Brazil. Laboratory of Physiology of Exercise & Measurements and Evaluation (LAFIEX), Estácio de Sá University - Rio de Janeiro – Brazil. Research Center in Sports Science, Health and Human Development (CIDESD), University of Trás-os-Montes and Alto Douro - Vila Real – Portugal.

immunodeficiency refers to the lack of protection of the immune system from combating and preventing infection by invasive microorganisms. In his study [3] says that the expression “acquired” indicates the condition of not being congenital.

Many years ago, since emerged of the AIDS epidemic in the world, few resources existed to effectively help people with AIDS until the late 1980s. However, with the intensification of scientific studies and experiments, Drugs called Zidovudine (ZDV or Azidothymidine - AZT) and Didanosine (DDI). However, the general concern about seeking support and a better solution for patients occurred in 1996 through antiretroviral therapy (cocktail therapy) to prevent aggravation of the disease. With the cocktail, a new chance for improvement emerged for seropositive people, as a new perspective began and other dimensions were given to the disease [4].

According to [4], antiretroviral has a direct role in the development of virulence in the cell, as well as viral replication, preventing the multiplication of the HIV virus, causing its reduction and slowing the development of the disease. Effectively, the impact each drug causes at a particular stage of virus replication acts to prevent its replication in CD4 defense cells and to lose its detectable ability.

In order to provide a life expectancy to the HIV / AIDS carrier, [5] with the use of Antiretroviral Therapy (ART) caused an improvement in life with the medical scientific advances, since the disease that was previously incurable, fatal and irreversible condition became a potentially controllable chronic condition. Although AIDS is still considered incurable.

With the Highly Active Antiretroviral Therapy (HAART) process in the 1990s, the patients experienced an expectation of qualitative and quantitative prolongation of their survival, with the benefits of treatment admitting that patients suffer with some processes arising from the virus itself that are accentuated by antiretroviral therapy [2].

A number of side effects that significantly influenced the quality of life of HIV/AIDS patients were observed with the prolonged use of antiretroviral [6]-[7].

Nowadays, physical activity is seen and recommended as a therapeutic form in the treatment of HIV, that is, physical work done regularly and appropriately, it helps in the clinical situation, in the increase of the physical and psychological conditioning of the seropositive [8].

According to [9], the active behavior of the Physical Education professional should not only be considered in the field of health science, but also by inserting other sciences to compose their scientific field, and physical exercises should be used as supportive or complementary therapy For the HIV / AIDS sufferer, so that they can feel beneficial and happy with physical exercise understanding that that practice is

essential for a better life. Thus, physical exercise improves the health of people living with HIV / AIDS, and the benefits of exercise are related to the improvement of cardiorespiratory fitness, strength, bone mass, psychological and social aspects and Metabolic control of insulin, cholesterol and triglycerides.

There is an important relationship between the practice of physical exercise and the use of antiretroviral drugs with an improvement in the immune function of the individual with HIV / AIDS, and for [10] antiretroviral therapy brings a global restoration of the immune system of patients with HIV / AIDS. In their article [11] demonstrate that other benefits brought about with physical exercise to one are related to T CD4+ lymphocytes, certain that it gives rise to the increase of their concentration in the body of the seropositive, two that lessens the impact caused by the effects Side effects of antiretroviral drugs and three that the people living with HIV can achieve changes in their physical appearance, improving their body mass and physical condition.

The practice of physical exercise is related to self-esteem and a healthy life. For [12] the seropositive lives a picture of anxiety and nervousness and as a way for the body to have a positive response to this expectation is with the practice of physical exercise, as it improves the body image as well as activates the production of hormones and substances Of relaxing characteristics provoking feelings of pleasure and well-being, thus increasing the will to live and the confidence and credibility that the HIV-positive person can perform daily tasks and movements and manage his life safely. It is verified that the improvement of the physical fitness is linked to the good health, with the increase of the form and mobility. The well-being generated by exercise for the HIV-positive person has positive consequences in their daily lives, because it increases the vigor and the disposition not to feel discouragement, weakness, fatigue and lack of appetite. The search for physical activity causes people with HIV / AIDS to expand their social life, because they will have contacts with other people, avoiding social isolation and a greater incentive to join the practice of physical exercises.

The exercises that are most indicated for those with HIV / AIDS are the aerobics and localized muscular endurance to improve the lipid profile and increase lean mass [13]. According to [14], practicing physical exercise is an important role adopted by the seropositive while healthy, because it is understandable that during the pathological process adopt measures that help him maintain an exercise program that improves and guarantees his quality of life and the Prolongation of his life in the management of his illness. Thus, according to [12], it has been scientifically proven that physical exercise plays an essential role and can be a great ally in the treatment of HIV / AIDS since the practice of trained physical exercises can bring several benefits.

II. METHOD

This study had the participation of seropositive of both genders practicing activity, making up a population of 55 (fifty-five) HIV / AIDS patients divided into 30 (thirty) experimental group and 25 (twenty five) control group. As inclusion criterion, only seropositive who habitually practice

physical activity may participate. The exclusion criterion was used for seropositive who did not want to participate in the study and who have less than 06 (six) months in the practice of physical activity.

The study considered as independent variables the gender and the time of practice and as dependent variables: self-esteem, depression, behavior of the immune system and socialization.

For the accomplishment of the study was delivered and signed by the holders of HIV / AIDS a term of consent elaborated in agreement to the order n° 196 of 10/10/1996 of the National Council of Health - Brasil. The seropositive were informed properly on the way of collecting of data.

The study used the Short Form Health Survey and the International Quality of Life (SF-36) and four (4) objective questions asked with the seropositive of the experimental group with the objective of identifying an improvement in the quality of life of HIV / AIDS patients with physical activities. The questionnaire was delivered to the seropositive, having to be returned the same day, sure that the same was answered every week and the presence of the researcher to remedy any kind of doubt.

For the analysis and treatment of the data, the present study made use of the descriptive statistics and verification of the normality of the sample through the Shapiro-Wilk test. For inferential analysis, a Student's t test was used to compare the means of independent samples, where a p value <0.05 was considered for analysis of the data. It was used the Statistical package SPSS® version 23.0 for Windows®, and Microsoft Excel® v. 2007.

III. DISCUSSION

The data presented in this study and their respective analysis and discussion will be presented below.

Table 1 shows the results obtained for the SF-36 referring to the control group, for all domains analyzed. Table 2 shows the results for the experimental group. It was observed that the experimental group presented a significantly higher result for all domains when compared to the control group (p <0.001), evidencing an improvement in the quality of life in these patients due to the practice of physical exercise.

In the analysis of the answers given in the questionnaires, it can be observed that the practice of physical exercise is an excellent activity that provides an improvement in the patients' quality of life. Therefore, the exercises performed result in an improvement in life expectancy, bringing greater security and confidence to people living with HIV / AIDS, enabling them to become healthier with a longer view of life, enjoying a good quality of life.

Tables 1 and 2 show the results obtained by the SF-36 questionnaire by the evaluation of the control group and the experimental group. The statistical analysis performed in table 3 shows a significant difference in the domains of functional capacity and limitations by physical aspects where it can be seen that the practice of physical exercise can improve their general physical capacity to perform daily tasks with more will, disposition and vigor. Since [11] affirm that the seropositive people with the practice of physical

exercise, day-to-day, can change their physical appearance, improving their body mass and physical condition.

The practice of physical exercise is considered one of the best benefits factors for the seropositive, so the study could demonstrate that exercise provides not only physical benefits, but also as social and affective. As can be observed in tables 1 and 2 the difference of responses given by the control group and by the experimental group. Given that HIV-positive people who practice physical exercise become more sociable, increasing their stamina and emotional state. In their article [11] affirm that the search for physical activity causes the people living with HIV / AIDS to expand their social life, as they will have contacts with other people, avoiding social isolation and a greater incentive to join the practice of physical exercises.

The experimental group addressed questions related to the feeling of happiness and tranquility, importance and the vision they had with the impact of physical exercise on their health and their lives. It is verified with regard to the

questions asked in the questionnaire directed to the experimental group that the physical exercise brings the sensation of happiness, that is very important to its practice and that it has the optimal vision of how its health stays. According to [9], he should use physical exercises as supportive or complementary therapy for the HIV / AIDS patient, so that they can feel beneficial and happy with physical exercise, understanding that this practice is essential for a better life.

Many people with HIV / AIDS end up having some symptoms, such as demonization, pain, fatigue, weakness, anxiety, often caused by the use of antiretroviral drugs and with the results obtained in the questionnaire directed to the experimental group, you can observe that with regular practice of physical exercise Causes the side effects to be lessened, as [8] says that physical work done regularly and appropriately helps in the clinical setting, increasing the physical and psychological conditioning of seropositive.

Table 1 - Descriptive Statistics of the Control Group

	Functional Capacity	Limitation by Physical Aspects	Pain	General Health	Vitality	Social Aspects	Limitation by Emotional Aspects	Mental Health
Mean	17.2	11.0	43.0	29.5	14.6	24.0	2.7	17.0
St. Deviation	14.2	22.9	27.7	6.9	12.2	16.9	9.2	13.8
Coefficient of Variation	0.83	2.08	0.64	0.23	0.84	0.70	3.46	0.81

Standard deviation (st. deviation)

Table 2 - Descriptive Statistics of the Experimental Group

	Functional Capacity	Limitation by Physical Aspects	Pain	General Health	Vitality	Social Aspects	Limitation by Emotional Aspects	Mental Health
Mean	91.3	87.5	74.7	75.3	81.5	85.0	80.0	79.6
St. Deviation	7.3	26.9	28.8	10.4	14.2	19.8	33.4	16.0
Coefficient of Variation	0.08	0.31	0.39	0.14	0.17	0.23	0.42	0.20

Standard deviation (st. deviation)

Table 3 - Inferential Statistics of Data, Student's t test Results

<i>p value</i>	Functional Capacity	Limitation by Physical Aspects	Pain	General Health	Vitality	Social Aspects	Limitation by Emotional Aspects	Mental Health
t test	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

IV. CONCLUSION

During this study, it became clear that regular physical exercise can result in improved quality of life for people

living with HIV / AIDS. The role that physical exercise brings to the lives of HIV-positive people is not limited to the physical aspect but also, in the psychological aspect and

physical appearance, helping to provide well-being, security and confidence in the habits of everyday life.

It was possible to observe with the present study that the physical exercise brings benefits to people with HIV / AIDS, as already mentioned, verifying that these benefits are part of stimuli practiced by a professional in an applied way.

Thus, it is observed that Physical Education is a powerful influence in the promotion of health and quality of life in seropositive people through regular practice of physical exercise.

Other studies may focus on Lipodystrophy and Wasting Syndrome, which are diseases caused by the use of antiretroviral drugs, which affects 90% (ninety percent) of people with HIV / AIDS, since the study was limited to observing the improvement in quality of life.

REFERENCES

- [1] SMELTZER, S. C.; BARE, B. G. Brunner & Suddarth Tratado de Enfermagem Médico-cirúrgica. 8 ed. Rio de Janeiro: Guanabara Koogan, 1999.
- [2] FERREIRA, D. C. et al. Manifestações clínicas em crianças infectadas pelo HIV na era HAART: um estudo seccional. Revista de ciência médica biológica, v. 8, n. 1, p. 5-13, 2009.
- [3] COSTA, J. P. et al. O perfil do paciente contaminado pelo vírus HIV/AIDS. VI Encontro internacional de Produção Científica Cesumar. Anais. Maringá: Cesumar, 2009.
- [4] NARCISO AMS, PAULO MAS. Adesão e AIDS: alguns fatores intervenientes. Serv. Soc. Rev. Londrina, p 27-43, 2001.
- [5] BUCCIARDINI, R.; MURRI, R.; GUARINIERI, M.; STARACE, F.; MARTINI, M.; VATRELLA, A.; CAFARO, L; FANTONI, M.; GRISSETTI, R. ISSQOL: a new questionnaire for evaluating the quality of life of people living with HIV in the HAART era, Qual. Life Res., v.15, 9.377-390, 2006.
- [6] VALENTE, A. M. M. et al. Alterações metabólicas da síndrome lipodistrófica do HIV. Arquivos brasileiros de endocrinologia metabólica, v. 49, n. 6, p. 871-881, dez. 2005.
- [7] CASTELHO FILHO, A., ABRÃO, P. Alterações metabólicas do paciente infectado por HIV. Arquivos Brasileiros de Endocrinologia e Metabologia, 51(1), 5-7, 2007.
- [8] ADAMS WC. Foudation of physical education, exercise and sport sciences. Philadelphia: Lea e Febiger; 1991.
- [9] BARBANTI, V. J. et al. Esporte e Atividade Física: interação entre rendimento e qualidade de vida. Barueri: Manole, 2002.
- [10] AFANI AS, JIUSÁN LL, RABY PA, SITIA G, PUENTE JP, SEPÚLVEDA CC, MIRANDA DW, CABRERA RC, GUIDOTTI L, LANZA P. Restauración de la inmunidad innata en pacientes con infección por VIH/SIDA después de inicio de terapia antiretroviral. Rev Med Chile. 134(6):689- 696, 2006.
- [11] EIDAM CL, LOPES AS, OLIVEIRA OV. Prescrição de exercícios físicos para portadores do vírus HIV, 2005.
- [12] BORGES, J.; PAES, L. Exercício Físico e qualidade de vida com HIV, p.16-20, 2010.
- [13] REVISTA EF. Aids e atividade física. Rio de Janeiro, nº.28, p.20-22, jun. 2008.
- [14] JUNQUEIRA, C. AIDS e Atividades Físicas. 2002. 30p. Monografia (Graduação) – Faculdade de Educação Física, Faculdades Associadas de Ensino, p.30, 2002.