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Full Length Research

Physical exercises undertaken by people living with HIV/AIDS attending General Hospital Kafanchan, Kaduna State, Nigeria

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ABSTRACT: Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) is one of the world most serious public health challenges. The use of antiretroviral therapy has increased the life expectancy for people living with HIV/AIDS and also decreased the clinical features of HIV. However, some metabolic changes have emerged with negative effects such as increase in blood lipids, central obesity, hypodystrophy and decreased aerobic capacity. These are risk factors for cardiovascular diseases, cancer and mortality. A common practice among non HIV positive populations is to modify these risk factors by engaging in exercise. Hence, people living with HIV/AIDS can also benefit from it as it will make them live healthier while ageing with HIV. This study revealed information about the types of physical exercises undertaken by the people living with HIV/AIDS attending the antiretroviral clinic of General Hospital Kafanchan, Kaduna State, Nigeria. A cross-sectional survey design was carried out in 2014 with 422 sample size obtained through systematic sampling technique. A researcher-developed questionnaire was used to collect data assisted by two trained research assistants. The data was analyzed descriptively using frequency and percentages and chi-square was used to test for association at 95% confidence interval using statistical package for social sciences version 20.0 computer software programme. Walking and running were the types of physical exercises undertaken by most of the respondents followed by farming. Physical exercise was found to be significantly associated ($p<0.05$) with the age, sex, highest educational qualification and occupation of the respondents. Since physical exercise is very important for the people living with HIV/AIDS there is need for the health workers to encourage them to engage in physical exercise in order to decrease their risk of cardiovascular diseases, improve their immune system, manage their weight and reduce other health risk and by extension, enhance their quality of life.

Keywords: Antiretroviral clinic, HIV adult patients, socio-demographic variables, types of physical exercise.

INTRODUCTION

Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) is one of the world most serious public health challenges. The Joint United Nations Programme on HIV/AIDS (UNAIDS) cautions that, the pace of progress in reducing new HIV infections, increasing access to treatment and ending AIDS-related deaths is slowing down with some countries making impressive gains while others are experiencing rises in new HIV infections and AIDS-related deaths (U.S Government, 2019).

Many people with HIV have increased levels of blood sugars and fats, such as cholesterol, which can increase the risk of some serious long-term health problems but exercise can lower levels of these fats and sugars, reducing the risk of heart disease, stroke and type 2 diabetes. Likewise, people with HIV-related weight loss,

or wasting, often have low levels of high density lipoprotein cholesterol-HDL (good cholesterol); exercise can increase levels of HDL and resistance training can also increase lean body mass (Amelia (2015).

Aerobic physical activity is safe and beneficial for HIV-infected adults. However, there is information lacking regarding whether HIV-infected patients practice physical activity (Schuelter-Trevisol et al. 2012). Many people choose to exercise in a gym; most gyms employ fitness instructors whose job is to ensure all exercise is carried out safely; they can also design an individual training programme. One need to make sure that he/she informs the instructor about any health conditions that might make exercise risky, or any injuries. But there is no need to tell the instructor about one's HIV status (Amelia, 2015).

U.S Department of Veterans Affairs (2019) assert that, being HIV positive is no different from being HIV negative when it comes to exercise. Exercise may help people with HIV to feel better, fight many of the side effects of HIV disease and HIV medications and helps people to live healthier while ageing with HIV. According to Amelia (2015), exercise is an important part of a healthy lifestyle; it gives one the strength, flexibility and endurance needed for daily activities. It is beneficial to the immune system and has been shown to improve physical and emotional wellbeing and mental health, it improves the health of heart and lungs, increased muscle mass, increased energy levels, stronger bones, improved body shape, a good appetite, better sleeping patterns, improved processing of sugars and more flexibility in muscle and joints. In addition, exercise can boost self-esteem, reduce one's risk of stress and depression and it produces the naturally occurring 'feel good' chemicals, called endorphins. Furthermore, exercise can reduce the risk of osteoporosis and help, once it is diagnosed, by encouraging new bone to grow. Moreover, regular exercise can also reduce the risk of some cancers developing. It has also been shown to reduce fat accumulation in people living with HIV who have lipodystrophy (changes in body fat), whilst helping to build muscle in the areas where fat has been lost.

In addition to all those listed above, walking, jogging, running, swimming and cycling are forms of exercise that the people living with HIV/AIDS (PLWHA) can carry out (U.S Department of Veterans Affairs, 2013). Aerobic exercise improves the heart's ability to pump and muscles ability to use oxygen. It includes activities that increase the hearts rate like brisk walking, running, cycling and swimming. Aerobic activity is not only great for the immune system, but it also decreases the risk for developing heart disease and helps with weight management. Aerobic training is not advised for individuals experiencing wasting or unintentional weight loss (Steinberg, 2004). PLWHA should practice aerobic exercises in order to improve their immune system and heart function as well as to control weight.

Allison et al. (2015) carried out a study on a cross-sectional description of age and gender differences in exercise patterns in adults living with HIV. It was concluded that respondents exercised regularly but at less than recommended levels. A study was conducted by Alya et al. (2019) titled, are you ready; exploring readiness to engage in exercise among people living with HIV and multi-morbidity in Toronto, Canada: a qualitative study. It was found that, readiness to engage in exercise among people living with HIV is a dynamic and fluctuating construct that may be influenced by the episodic nature of HIV and multi-morbidity and four sub-factors. Likewise, Vancampfort et al. (2018) in their study on the physical activity correlates in people living with HIV/AIDS: a systematic review of 45 studies. It was discovered that, participation in physical activity by the PLWHA is associated with a range of complex factors which should be considered in rehabilitation programmes.

Anh et al. (2019) carried out a study on the physical activity among HIV-positive patients receiving therapy in Hanoi and Nam Dinh, Vietnam: a cross-sectional study. It was revealed that, there is need for intervention to promote physical activity among patients with HIV in urban areas and in the later ART treatment phases likewise, peer support and job guidance is needed to increase their level of physical activity.

Shaw and Spokane (2008) examined the association between education level and physical activity changes during early old age and reported that, age-related decline in physical activity was observed, steeper among low-education individuals. Lack of physical activity was predicted by worsening health and reduced workforce participation, but these associations varied by education level. For low-education individuals, not working and job losses were associated with reduced physical activity, whereas for highly educated individuals the reverse was true. Health problems were associated more strongly with reduced physical activity in high-education individuals.

Physical exercise is the performance of some activities in order to develop or maintain physical fitness and overall health (Science Daily, 2014). In this study, physical exercise is the type of activity such as walking, running, swimming and bicycling carried out by PLWHA, how often they do it and how long they do it. While socio-demographic variables refer to the respondents' age, sex, marital status, highest educational attainment and occupation. It is therefore necessary to determine the type of physical exercises undertaken by PLWHA attending the ART clinic of General Hospital Kafanchan, Kaduna State.

Research question: What are the types of physical exercises undertaken by PLWHA?

Hypothesis (H_o): There is no significant association between the socio-demographic characteristics of respondents (age, sex, marital status, highest educational attainment and occupation) and the types of physical exercise.

Table 1. Physical exercises undertaken by PLWHA (n = 412).

Item	Frequency	Percentage
Type of physical exercise		
Walking and Running	264	64.1
Farming	76	18.4
Others (swimming, bicycling, volley ball)	23	5.6
Domestic works	18	4.4
Football	17	4.1
None	14	3.4
Frequency of exercise **(n = 398)**		
1-2 times a week	87	21.9
3-4 times a week	126	31.7
5-7 times a week	134	33.7
More than 7 times a week	51	12.8
Duration of exercise per day		
10 minutes	43	10.8
20-30minutes	125	31.4
1-2hours	140	35.2
3-4hours	90	22.6
Reasons for not engaging in physical exercise **(**n = 14)		
I always feel weak	8	57.1
Not good for my condition	2	14.3
Not instructed by care provider	2	14.3
Other reasons (lack of time and illness).	2	14.3

METHODOLOGY

A cross-sectional descriptive survey design was carried out at the ART clinic of General Hospital Kafanchan, Kaduna State, Nigeria. The study population of 1,766 PLWHA that attended the ART clinic within a month was used. Systematic sampling technique using the attendance register as a sampling frame was employed to draw the sample size of 422 for the study. A researcher-developed questionnaire was used to collect the data. To know the reliability of the instrument, it was pilot tested before administration to the study participants which had a reliability coefficient of 0.81. In order to ensure objectivity and confidentiality, two trained research assistants from the ART clinic were used to assist the researcher with data collection. The data collection took place during the clinic days and between procedures as the respondents were waiting for their turn to be attended to, which lasted for one month. The instrument also served as an interview guide for non-literate respondents while their responses were filled in as objectively as possible. Descriptive statistics using frequency and percentages as well as chi-squire to test for association were used to analyze the data. All the data analyses were done using statistical package for social sciences version 20.0 computer software programme (SPSS inc.IL: Chicago, USA).

RESULTS

As presented in Table 1, 64.1% respondents representing 264 indicated that they engage in walking and running, 18.4% respondents representing 76 indicated that they engage in farming as a form of exercise, 5.6% respondents representing 23 indicated that they perform other types of exercises, like swimming, bicycling and volley ball, 4.4% respondents representing 18 indicated that they engage in domestic works, 4.1% respondents representing 17 indicated that they play football as a form of physical exercise while 3.4% respondents representing 14 did not carry out any type of physical exercise.

In response to the frequency of exercise, 21.9% respondents representing 87 indicated that they do exercise 1 to 2 times a week, 31.7% respondents representing 126 indicated 3 to 4 times a week, 33.7% respondents representing 134 indicated 5 to 7 times a week, while 12.8% respondents representing 51 exercise more than 7 times a week.

On the duration of exercise per day, 10.8% respondents representing 43 engage in exercise for 10 minutes, 31.4%

Table 2. Chi-square test of association between the socio-demographic variables (age, sex, marital status, highest educational attainment, occupation) and the physical exercise of PLWHA **(**n = 398).

Variable	Physical Exercise				Total	X^2	P-value
	1-2 times a week	3-4 times a week	5-7 times a week	>7 times a week			
Age							
18-32years	6	19	12	3	40	21.707	0.01
33-47years	40	44	45	15	144		
48-62years	40	35	48	29	152		
63-77years	11	23	24	4	62		
Sex							
Female	53	81	105	39	278	19.431	0.000
Male	43	40	24	13	120		
Marital Status							
Married	71	102	100	42	315	3.964	0.265
Single	25	19	29	10	83		
Highest Educational Attainment							
None	7	10	27	7	51	23.988	0.004
Tertiary	20	17	22	15	74		
Secondary	45	62	44	20	171		
Primary	23	33	37	9	102		
Occupation							
Farming	36	45	56	14	151	30.463	0.002
Business	31	48	53	26	158		
Civil servant	24	18	7	8	57		
Student	4	5	12	3	24		
Housewife	1	5	2	0	8		

respondents representing 125 engage in it for 20 to 30 minutes, 35.2% respondents representing 140 engage in it for 1 to 2 hours and 22.6% respondents representing 90 engage in it for 3 to 4 hours.

Out of the 14 respondents that do not engage in physical exercise, 57.1% respondents representing 8 do not engage in exercise because they always feel weak, 14.3% respondents representing 2 stated that it is not good for their condition, another 14.3% respondents representing 2 stated that they were not instructed by their care provider and another 14.3% respondents representing 2 stated some other reasons like lack of time and illness.

Ho: *There is no significant association between the socio-demographic characteristics of respondents and the types of physical exercise.* The result on Table 2 showed that with the exception of marital status, all the other demographic characteristics (age, sex, highest educational attainment and occupation) were significantly associated with physical exercise ($p < 0.05$).

DISCUSSION

Almost all the PLWHA were involved in one form of physical exercise or the other with running and walking being the dominant practices indulged by 64% of the respondents followed by farming. This is because farming is the dominant occupation in the area of study and most of the people walk a long distance to their farms. The finding is supported by Anh et al. (2019) that, 16% of the participants were inactive and 68% were reported active via health enhancing physical activity. Rural participants reported a high level of physical activity compared to urban participants. This could be due to the fact that people living in the urban areas are more business oriented hence, less time for physical activity than those in the rural areas.

However, this finding is in contrast with that of Frantz and Murenzi (2014) that majority of the participants were found to be inactive. For those who were active, majority were engaged in household activity followed by walking and work activity respectively.

The frequency of involvement in physical exercise by majority (65.4%) of the respondents was 3 to 7 times per week. This finding is supported by Nam Aidsmap (2015) that, adults should aim at 150 minutes of moderate aerobic activity or 75 minutes of vigorous aerobic activity every week. With regards to the duration of exercise in this study, the duration of exercise by most of the PLWHA ranged from 20 minutes to 4 hours per day. The same is applicable to domestic work as some of the respondents relate its duration to how long they exercise. In line with this finding is that of Nam Aidsmap (2015) that, one way to do the recommended 150 minutes per week of adult exercise is to do 30 minutes on five days a week. In contrast to this finding is that of Allison et al. (2015) that, women exercised an average of 2.4 hours per week compared with men, who exercise 3.5 hours per week. It was concluded that PLWH exercised regularly but at less than recommended levels.

In this study, few (14) PLWHA did not exercise because they feel weak. Some feel that exercise was not good for their condition, not instructed by care provider, lack of time and illness. This is because the PLWHA were ignorant on the need to exercise which is health-provider factor. It is therefore suggested that physical exercise be included in the counseling and health education for PLWHA. This finding is supported by Frantz and Murenzi (2014) that barriers to physical activity were lack of motivation, lack of time, and fear of worsening the disease. Also, in line with this finding is that of Shaw and Spokane (2008) that, lack of physical activity was predicted by worsening health and reduced workforce participation, but these associations varied by education level. The findings of Vancampfort et al. (2018) further supported this finding, that, lower levels of physical activity were consistently associated with older age (6/10), a lower number of CD4 cells/u/ (7/11), exposure to ART (4/6) and the presence of lipodystrophy (4/4). Other important barriers were the presence of bodily pain (2/2), depression (3/3) and opportunistic infections (3/4). It was concluded that, participation in physical activity by the PLWHA is associated with a range of complex factors which should be considered in rehabilitation programmes.

Physical exercise was found to be significantly associated with the respondents' demographic variables like age, sex, highest educational qualification and occupation. This is because people engage in different types of physical exercises irrespective of their demographic variables. Women irrespective of their age engage in domestic and farm work, men are mostly into farm work and football, all sexes engaged in walking and running. The more educated an individual is the more likely for him/her to engage in exercise. This finding is supported by Shaw and Spokane (2008) that, for low-education individuals, not working and job losses were associated with reduced physical activity, whereas for highly educated individuals the reverse was true. Health problems were associated more strongly with reduced physical activity in high-educated individuals.

Conclusion

The average engagement in physical exercise by the respondents was 47.5%. There is significant association between age, sex, highest educational attainment and occupation with the type of physical exercise of PLWHA ($p < 0.05$). But marital status was not found to be significantly associated with the type of physical exercise of PLWHA ($p = 0.265$).

Recommendations

Based on the findings of this study, it is recommended that, there is need for the health workers to encourage PLWHA to engage in physical exercise in order to decrease their risk of cardiovascular diseases, improve their immune system, manage their weight and reduce other health risk and by extension, enhance their quality of life. The PLWHA should be made to understand that they can do physical exercise irrespective of their age, sex, educational qualification and occupation.

CONFLICT OF INTEREST

Authors declare that they have no conflict of interest.

REFERENCES

Allison, R., Jacob B., Chris, T. L., Alison, M., Barbara, G., & Roberts, A. S. (2015). A cross-sectional description of age and gender differences in exercise patterns in adults living with HIV. *Journal of the Association of Nurses in AIDS Care*, 26 (2), 176-186.

Alya, S., Kyle, V., Denine, E., Dirouhi, K., Priscilla, L., Patrick, J., Soo, C. C., & Kelly, K. O. (2019). Are you ready? Exploring readiness to engage in exercise among people living with HIV and multi-morbidity in Toronto, Canada: A qualitative study. *BMJ Journal,* 6(3), e010029

Amelia, J. (2015). Exercise. NAM aidsmap. Retrieved 9th November, 2019 from http://www.aidsmap.com/about-hiv/exercise.

Anh, K. D., Long, H. N., Anh, Q. N., Bach, X. T., Tung, T. T., Carl, A. L., Melvyn, W. B. Z., & Roger, C. M. H. (2019). Physical activity among HIV-positive patients receiving therapy in Hanoi and Nam Dinh, Vietnam: A cross-sectional study. *BMJ Journals,* 8(5), e020688

Frantz, J. M., & Murenzi, A. (2014). The physical activity levels among people living with human immunodeficiency virus/acquired immunodeficiency syndrome receiving high active antiretroviral therapy in Rwanda. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*, 10(3-4), 113-118.

Schuelter-Trevisol, F., Wolff, H. F., Alencastro, R. P., Grigoletti, S., Ikeda, L. M., Brandao, B. M. A., Barcellos, T. N., & Fuchs, C. S. (2012). Physical activity: Do patients infected with HIV practice? How much? A systematic review. *Current HIV Research*, 10(6), 487-497.

Science daily (2014). Physical exercise. Retrieved 15th May, 2014 from https://www.sciencedaily.com/terms/physical_exercise.htm.

Shaw, B. A., & Spokane, L. S. (2008). Examining the association between education level and physical activity changes during early old age. *Journal of Aging and Health*, 20(7), 767-787.

Steinberg, E. (2004). *Exercise and HIV/AIDS*. The Body. Resource Center for Living Well With HIV. Retrieved from http://www.thebody.com/content/art32293.html.

U.S Department of Veterans Affairs (2013). Exercise for people with HIV-HIV/AIDS. Retrieved 13th May, 2014 from http://wwwhiv.va.gov/--/single-page.asp.

U.S Department of Veterans Affairs (2019). Exercise and HIV: Entire Lesson. Retrieved 9th November, 2019 from https://www.hiv.va.gov/patient/daily/exercise/single-page.asp.

U.S Government (2019). Global HIV/AIDS Overview. Retrieved 9th November, 2019 from https://www.hiv.gov/federal-response/pepfar-global-aids/global-hiv-aids-overview.

Vancampfort, D., Mugisha, J., Richards, J., De Hert, M., Probst, M., & Stubbs, B. (2018). Physical activity correlates in people living with HIV/AIDS: a systematic review of 45 studies. *Journal of Disability and Rehabilitation*, 40(14), 1618-1629.