

Level of Physical Activity and Related Variables among Adult Ethiopian HIV Patients

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Abstract

Background: Antiretroviral therapy (ART) has well-known metabolic side effects, although people with HIV who use it frequently live long, healthy lives. Improvement of various physiological indicators is reported to be significantly influenced by physical activity. The purpose of this study was to assess the degree of physical activity and related variables among HIV patients in Ethiopia.

Methods: From May to June 2019, a cross-sectional study with an institutional focus was carried out. In three chosen hospitals in Southern Ethiopia, we chose 422 adult HIV patients who were attending antiretroviral therapy clinics. Using a pre-tested structured questionnaire, nine trained nurses collected data during routine care appointments. The International Physical Exercise Questionnaire was used to gauge the level of physical activity (IPAQ).

Result: The mean age of participants was 38.7 ± 9.13 years. Of the participants, 68% were physically inactive, with a higher proportion of inactive women (74%) than men (61%) [(AOR = 1.64, 95% CI (1.07, 2.53)]. In addition, urban vs. rural residents [(AOR = 2.57, 95% CI (1.16, 5.72)] and patients who were on ART for ≥ 24 months [(AOR = 1.88, 95% CI (1.15, 3.08)] had higher odds of having a low physical activity level.

Conclusion: The majority of HIV-positive individuals on ART engage in little physical exercise. Low levels of physical activity are more prevalent among patients who are female, live in cities, and have longer treatment durations. It is necessary to gain more understanding of the causes of the lack of physical activity among HIV patients, and initiatives for this population in developing nations must be created.

Keywords: HIV; Antiretroviral therapy (ART); Patients; chronic inflammation

Introduction

Physical activity helps HIV-positive people maintain their physical health and quality of life while lowering their risk of non-communicable diseases. HIV-positive people in Sub-Saharan Africa claim to be less active than HIV-negative people. In Mwanza, Tanzania, we investigated the levels and correlates of objectively measured physical activity and capacity between HIV-infected and HIV-uninfected people who had never received antiretroviral therapy (ART) [1].

A cross-sectional study with newly diagnosed HIV-infected ART-naive persons and HIV-uninfected individuals who were frequency matched for age and sex was done. Anthropometric measurements, anthropometric information, CD4 counts, hemoglobin levels, and C-reactive protein (CRP) levels were gathered. While sleeping heart rate (SHR) and grip strength were evaluated as indicators of physical capacity, physical activity energy expenditure (PAEE) served as a proxy for physical activity. The correlations of physical activity and capacity were evaluated using multivariable linear regression [2].

In 2018, the calculable range of individuals living with HIV (PLWH) was 37.9 million, and 62% of them had access to life-saving antiretroviral medicines. PLWH United Nations agency antiretroviral therapy (ART) will fancy long and healthy lives. This improvement caused the lifetime of HIV patients associate degreed remodeled HIV infection from an acute to a chronic malady [3]. However, the unhealthful side-effects of ART, semi-permanent infection with HIV, the augmented predisposition to fleshiness, and visceral fat have created PLWH a lot of susceptible to develop comorbidities, like upset [4].

Past studies shown the advantage of physical activity in preventing and managing the adverse effects of ART. Physical activity is any bodily movement made by skeletal muscles that leads to energy expenditure

[5]. It improves physiological parameters like metabolic process fitness, muscular strength, waist circumference, internal secretion resistance, blood lipid profile, HIV-associated lipodystrophy, and general inflammation. Moreover, it may conjointly profit the psychological state standing of HIV patients by rising depression standing and reducing anxiety

Currently, alike alternative elements of sub Saharan countries, the accessibility of ART for Ethiopian HIV patients is increasing and it's documented that this medical aid is related to adverse effects. Participating in regular physical activity is a technique to forestall and/or treat this adverse impact. Therefore, this analysis aims to assess the standing of physical activity and examines the factors related to the amount of physical activity among adult PLWH in Ethiopia [6]. The information obtained from this study provides helpful information to style methods in rising physical activity standing and interference of risks related to physical inactivity among adult HIV patients [7].

Physical activity improves physical strength and capability, and reduces the chance of non-communicable diseases (NCDs) and mortality [8]. In HIV-infected people, physical activity conjointly

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improves well-being, has positive psychological effects and will scale back the facet effects of antiretroviral therapy (ART) like anxiety, fatigue, muscle pains and headaches. However, rising proof suggests that HIV-infected have lower physical activity and capability, as well as reduced physical strength than HIV-uninfected people which can result in poor quality of life and augmented risks of developing NCDs [9].

A previous study in United Republic of Tanzania that assessed physical activity victimization similar objective measures among infectious disease (TB) patients found HIV co-infection was related to lower levels of physical activity [10]. Besides the Tanzanian study, a recent systematic review found that, there have been solely two alternative little studies in Africa that had assessed physical activity among HIV-infected people victimization objective measures. Each of those studies according that advanced stages of HIV infection were related to lower levels of physical activity. This dearth of high-quality physical activity information from HIV-infected people limits development of methods to enhance physical activity and thereby general health and well-being of HIV-infected people in Africa [11]. Moreover, except for a restricted range of studies victimization objective measures of physical activity, studies assessing the role of HIV infection and alternative correlates moving physical activity levels in HIV-infected people by examination with people United Nations agency don't seem to be HIV-infected area unit scarce within the SSA. This study aimed to assess levels and correlates of objectively measured physical activity and capability among new diagnosed HIV-infected ART-naive compared to HIV-uninfected people in United Republic of Tanzania [12].

Methods

Study design, context, participants, and sample: This study was conducted employing a cross-sectional style in three hand-picked hospitals, one comprehensive specialized hospital and two general hospitals from May to June 2019. Hawassa University Comprehensive Specialized Hospital (HUCSH), a tertiary level hospital, delivers specialized and referral services for general hospitals [13]. The two general hospitals, Adare and Yirgalem, deliver secondary level health care, providing preventive and curative services that need diagnostic facility and therapeutic intervention. HUCSH and Adare general hospitals square measure found in Hawassa city, the capital of the Sidama regional state, and therefore the South Nation status Peoples Region (SNNPR) of African nation, that is found, 275 kilometer south of Addis Ababa, the capital of African nation. HUCSH, Adare, and Yirgalem general hospitals at the start of this study gave ART service for 2553, 1821, and 1476 HIV patients severally [14].

The study sample was hand-picked from adult HIV patients (18 years plus), registered in ART care and visiting the three hand-picked hospitals throughout the study amount. Pregnant and fresh ladies were excluded from the study. One population proportion formula was wont to calculate the sample size [15]. So far, there was no similar study conducted within the space or elsewhere having an equivalent standing as in African nation. Therefore, the calculable proportion of 50% was taken to possess most sample size. A sample of 384 was obtained and by considering the 10% non-response rate, the ultimate sample size became 422. Proportional allocation was wont to verify the quantity of study units to be sampled from every facility. Supported this, 184, 131 and 107 study participants were hand-picked from HUCSH, Adare, and Yirgalem general hospitals, severally. Individual study participants were hand-picked by random arrival at the ART clinic [16, 17].

HIV-infected participants were recruited if aged ≥ 18 years, new

diagnosed HIV-infected ART-naive willing to start out ART straight off once study enrollment, not pregnant, and residing in Mwanza. This Tanzanian HIV policy and therefore the national multi-sectoral strategic framework for HIV and AIDS adopted take a look at and Treat policy from UN agency in 2016. Hence, HIV-infected participants were recruited once testing assessed before they started ART at the ART clinics [18].

Data collection procedures: Data were collected through interview administered questionnaires, conducted at routine consultation by 9 trained nurses. A structured form was wont to collect info on socioeconomic and ART-related characteristics of the study participants. To gather knowledge on the amount of physical activity of the participants, we have a tendency to use the short type IPAQ. Since many samples of physical activity weren't regular activities in African country, we have a tendency to replace these by alternative physical activities with around an equivalent Metabolic Equivalent of Task (MET). Within the class of vigorous physical activity, quick cycling was replaced by rope jumping [19].

Blood pressure (BP) was measured with the quality mercury pressure gage BP cuff with the acceptable cuff size by activity the left arm systematically, three times at a 5-min interval. The typical of the two last readings was taken, and also the identification of high BP (hypertension) was created consistent with the World Health Organization criteria as pulsation systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg. Random glucose levels were determined by victimization Fia Biomed glucose Meter (Glucometer) Salute by finger puncture [20]. Participants World Health Organization were unaware of the very fact that they'd polygenic disease and/or cardiovascular disease were connected to the individual hospital for more identification and management of their conditions.

Data management and analysis: Data were analyzed victimization SPSS for windows version 20.0 (IBM, USA). Descriptive statistics were bestowed within the style of frequency, percentage, mean and variance. Chi sq. take a look at was wont to assess the association between categorical variables. Variables having P-value < 0.25 in the bivariate logistic regression analyses were considered as potential candidates in the final multivariable logistic regression analysis. He overall goodness of fit of the model was checked by using Hosmer-Lemeshow. Finally, the adjusted odds ratio (AOR) with its 95% confidence interval (CI) was used to determine statistical significance [21].

Discussion

We assessed the extent of physical activity and therefore the associated factors among HIV patients attending ART clinics of public hospitals in South Ethiopia. The present study showed a high proportion of physically inactive HIV patients, and ladies participants take the biggest share of this proportion. Being associate urban resident and an extended period of treatment were additionally factors that were related to physical inactivity [22].

In our study, a better range of ladies were physically inactive. Consistent findings were seen in many studies conducted elsewhere in Africa. Within the current study space, men area unit concerned a lot of typically in intensive manual labors, like agricultural activities, construction and sometimes carrying significant weights, than women. Additionally, within the current study came upon, girls have less likelihood to have interaction in several recreational and regular physical exertion activities. Therefore, interventions aimed toward promoting physical activity ought to target female person HIV patients [23].

The other variable that has shown a big association with physical

inactivity was the period of treatment. Physical inactivity was a lot of common among participants WHO stayed on ART for quite a pair of years. Our finding is per a study conducted in Vietnam. The attainable reason may well be that patients might have a lot of commitment at the initiation of treatment because of their health condition and therefore the frequent counsel and follow-up they get from health care suppliers. Maybe, once their health standing is stable within the later stages, they diminish compliant to stick to the care taken. Health care suppliers ought to take into account developing peer support programs, regular follow-up and awareness creation to extend the extent of physical activity and overall health standing.

As a limitation, throughout our assessment of physical activity level, information was collected supported self-reported information that is subjected to social desirability bias and ends up in over coverage of physical activity. Since participants were asked regarding their physical activity of 1-week period, their response may be subjected to recall bias. To attenuate the bias, clear instruction was given on the target, profit and downside of the study each for participants and information collectors.

HIV-associated wasting syndrome is defined by involuntary loss of body lean mass and fat mass, a case definition of HIV-infection, resulted from many factors as well as, reduced food intake, assimilation of nutrients, reduced utilization of nutrients and hyperbolic energy expenditure particularly throughout expedient infections. Weight loss in HIV-infected is in the course of muscle fatigue and weakness that explains the reduced grip strength. Grip strength not solely is associate indicator of lower physical capability however additionally a marker of frailty, incapacity and organic process deficiency. Within the gift study, HIV-infection and HIV-related conditions like low BMI was related to reduced grip strength. Thus, HIV- infected patients ought to be inspired to try to regular physical activity to assist re-gaining muscle strength and improving physical functioning [24].

The main limitations for this study were participants' low compliance with carrying the combined monitors for specific time periods like throughout sleep or because of allergic skin reactions to the ECG electrodes. Additionally, during this study, we tend to couldn't establish the time or period of the infection of HIV-infected people, which can be of importance to our findings. What is more, this study was a cross-sectional, limiting causative reasoning of the link between the correlates and physical activity and capability. Longitudinal studies are required to substantiate the ascertained associations between unwellness progression and physical activity and capability among HIV-infected people to cut back the burden of morbidity and improve quality of life.

Conclusion

In our study most of the people living with HIV and receiving ART have low physical activity levels. Our study disclosed the numerous associations between being feminine, urban residents and longer period of treatment with physical inactivity. There's a requirement for physical activity programs for HIV patients.

To conclude, objectively measured levels of physical activity and capability among HIV-infected were lower compared to HIV-uninfected people. Correlates which can contribute to lower levels of physical activity and capability in HIV-infected were HIV standing (CD4 count), chronic inflammation, HIV connected wasting and anemia.

Based on these findings, there's a requirement to enhance management and treatment for HIV- infected, to develop and judge

interventions on physical activity among HIV-infected further as HIV-uninfected people to enhance general health and cut back the chance of NCDs.

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