Feature

A Home-Based Rehabilitation Intervention for Adults Living With HIV: A Randomized Controlled Trial

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A randomized controlled trial was conducted to investigate the effects of a 16-week home-based rehabilitation (HBR) intervention on the quality of life, functional mobility, and functional capacity of adult people living with HIV (PLWH) on antiretroviral therapy in KwaZulu-Natal, South Africa. The intervention was carried out by community health care workers under the supervision of a qualified physical therapist. Participants in the control group received the standard of care as well as written health advice. While participants in the intervention group showed greater improvements across all outcome measures, between-group differences were nonsignificant. HBR for PLWH is a safe means of addressing the functional deficits experienced by PLWH and appears likely to improve quality of life. A task-shifting approach may be a feasible method of meeting the varied needs of PLWH, while at the same time potentially minimizing costs to already overburdened health care systems.

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More than 35 million people live with HIV globally, 24.7 million of whom live in sub-Saharan Africa (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2013). South Africa has 6.4 million people living with HIV (PLWH), while KwaZulu-Natal (KZN) province has the highest HIV prevalence of all of South Africa's nine provinces (Shisana et al., 2014) and can thus be considered the epicenter of the global HIV epidemic. In the last decade, South Africa has seen a marked increase in the number of PLWH receiving antiretroviral therapy (ART). This has resulted in a reduction in deaths attributable to HIV and an increase in life expectancy, with KZN seeing an 11.3-year increase in life expectancy between 2003 and 2011 (UNAIDS, 2013). Following an analysis of 37,740 South African PLWH on ART, Johnson and colleagues (2013) concluded that South African HIV-infected adults who started ART before their CD4+ T cell count fell below 200 cells/mm^3 could expect to enjoy near-normal life expectancy. What is less clear, however, is what quality of life these patients can expect to have.

HIV is now increasingly being viewed as a chronic disease (Deeks, Lewin, & Havlir, 2013), and like other chronic diseases, it presents PLWH with a number of physical, mental, and cognitive challenges. In a recent study of a cohort of 1,041 PLWH in KZN, Hanass-Hancock, Myezwa, and Carpenter (2015) found that 35.5% of the cohort experienced

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functional limitations, which could also be understood as the onset of disability. Few participants in that cohort reported any access to rehabilitation aimed at addressing these disabilities. The relationship between HIV and disability is well established (Hanass-Hancock & Nixon, 2009; Nixon et al., 2014; Van As, Myezwa, Stewart, Maleka, & Musenge, 2009), with two systematic reviews revealing that PLWH in hyper-endemic sub-Saharan African countries were prone to a wide range of physical and cognitive disabling conditions (Banks, Zuurmond, Ferrand, & Kuper, 2014; Hanass-Hancock, Regondi, van Egeraat, & Nixon, 2013).

HIV infection is associated with reduced physical performance, with both of these factors increasing mortality (Greene et al., 2014). According to the findings of Nixon and colleagues (2011), rehabilitation was crucial in ensuring that quality of life was added to the increased years of life that ART may provide to PLWH. Exercise forms an integral component of any physical rehabilitation program. Resistance and aerobic exercise interventions have been shown, via a number of systematic reviews (Gomes-Neto, Conceicao, Carvalho, & Brites, 2013; Gomes-Neto, Ogalha, Andrade, & Brites, 2013; O'Brien, Nixon, Tynan, & Glazier, 2010; O'Brien, Tynan, Nixon, & Glazier, 2008), to be both safe and beneficial for PLWH. Exercise and rehabilitation interventions are often offered by rehabilitation professionals working within hospitals or other centralized facilities. In resource-poor environments, PLWH experience a number of challenges related to accessing institution-based rehabilitation (Cobbing, Hanass-Hancock, & Deane, 2014) and there has been a call for alternative rehabilitation options for PLWH in these communities (Chetty & Hanass-Hancock, 2015). Chu and Selwyn (2011) proposed that health care systems need to reinvent themselves as the HIV epidemic evolves, with a particular focus on patient-centered community-based practice.

Home-based rehabilitation (HBR) is a key component of a wider community-based rehabilitation approach and has been proven to be an effective strategy to improve the quality of lives and the physical and mental well-being of individuals living with a wide range of chronic conditions, including stroke (Chaiyawat & Kulkantrakorn, 2012; Geddes & Chamberlain, 2001; Outpatient Service Trialists, 2009), traumatic brain injury (Hopman, Tate, & McCluskey, 2012; Powell, Heslin, & Greenwood, 2002), coronary artery disease (Blair, Corrigall, Angus, Thompson, & Leslie, 2011; Clark et al., 2015), and chronic respiratory conditions (Maltais et al., 2008; Pradella et al., 2015; Resqueti et al., 2007). A scoping review of the literature (Cobbing, Hanass-Hancock, & Myezwa, 2016) revealed only six articles that had investigated HBR interventions for adult PLWH (Baigis et al., 2002; Dolan et al., 2006; Lang, 1993; Maharaj & Chetty, 2011; Pullen et al., 2014; Roos, Myezwa, van Aswegen, & Musenge, 2014). Three of these interventions were situated in sub-Saharan Africa, and none offered rehabilitation tailored to individual participants' specific needs.

With specific reference to health care services available in South Africa, rehabilitation remains primarily institution based, despite commitment by the country's Department of Health (2001) to promote access to rehabilitative services closer to patients' homes, as stated more than 15 years ago. This lack of home-based services is exacerbated by the relative shortage of rehabilitation professionals in South Africa when compared to resource-rich countries in the North. World Health Organization statistics highlight this disparity, with Finland having more than 10 times more qualified physical therapists than South Africa (World Health Organization [WHO], 2011). These shortages were even more marked in poorer sub-Saharan countries such as Kenya, Namibia, and Zimbabwe, which all have considerably fewer than one physical therapist and occupational therapist per 10,000 population (WHO, 2011). The shortage of trained rehabilitation professionals has suggested the need for alternative approaches to the provision of rehabilitation, particularly in countries with a high prevalence of PLWH and disability. A task-shifting approach could counter this human resources challenge by training less-qualified personnel to conduct more complex tasks (Zachariah et al., 2009). This strategy has already shown promise in other areas of HIV care in Africa, such as ART provision (Callaghan, Ford, & Schneider, 2010) and counseling for depression (Petersen, Hanass-Hancock, Bhana, & Govender, 2014).

In summary, little evidence has been published on HBR programs developed for PLWH who are also affected by disabilities, and even less related to