

## The Utility of a Self-Management Framework in Contributing to the 2019 End of the HIV Epidemic Initiative in the United States

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### ABSTRACT

Highly active antiretroviral therapy has enabled people with HIV to live longer and have more productive and satisfying lives. An individual diagnosed with HIV at age 20 can expect to live into his/her early 70's. The de-classification of HIV from an acute to a more manageable chronic disease in which people living with HIV can now manage this disease on their own is attributed, in part, to the success of this therapy. The author proposed a self-management framework that clinicians can use to identify potential barriers that may circumvent their patients from achieving a favorable distal outcome in this framework or obtaining viral suppression at the last step of the HIV care continuum. By adopting a treatment modality that utilizes this framework, clinicians can make a great contribution to the United States government's 2019 initiative to end the HIV epidemic within 10 years by addressing two key strategies to achieve this desired outcome.

**Keywords:**HIV, Highly active retroviral therapy, Self-management framework, Ending the HIV epidemic

### INTRODUCTION

Highly active antiretroviral therapy (HAART) is a revolutionary breakthrough for people living with HIV. A critical change that HAART, which is the use of a combination of HIV medicines called a HIV regimen, has brought about is that there is an increase in the life expectancy for people on HAART. Research by Harrison et al. [1], using population-based HIV surveillance data from 25 states in the United States, found that life expectancy after a HIV diagnosis improved significantly from 10.5 years in 1996 to 22.5 years in 2005, which means that the life span doubled during this time. There was a particular rise in life expectancy in the first 5 years after the introduction of HAART.

More promising, research by Samji et al. [2] in their study of participants from the North American AIDS Cohort Collaboration, found that a 20 year old HIV-positive adult on HAART in the United States or Canada would be expected to live into their early 70's. This life expectancy estimate approaches that of the general population in these countries. The life expectancy gap between HIV-positive and HIV-negative persons is closing. Marcus et al. [3] found in their Kaiser Permanente California study that for 20 year old HIV-positive persons on HAART, there was an 8 year gap in life expectancy compared with their HIV-negative counterparts.

A second major change that HAART has brought about is that HIV has been de-elevated from an acute to a more manageable chronic disease [4]. Many people living with HIV are now able to provide their own care through disease-specific care that includes behaviors directed to symptom management and medication adherence and generic care that involves health maintenance types of behaviors like managing any psychological distress that may arise and addressing the nutritional needs that are associated with this disease [5,6].

A self-management framework is presented in **Figure 1** that can be used to guide clinicians in helping their patients to manage HIV. This framework is composed of Risk and Protective Factors (condition-specific factors - CD 4 T-cell count, viral load count; physical-social environment factors - physical stamina, workplace; individual-family factors - education attainment, capacity to self-manage), self-management process variables (knowledge/beliefs-mental

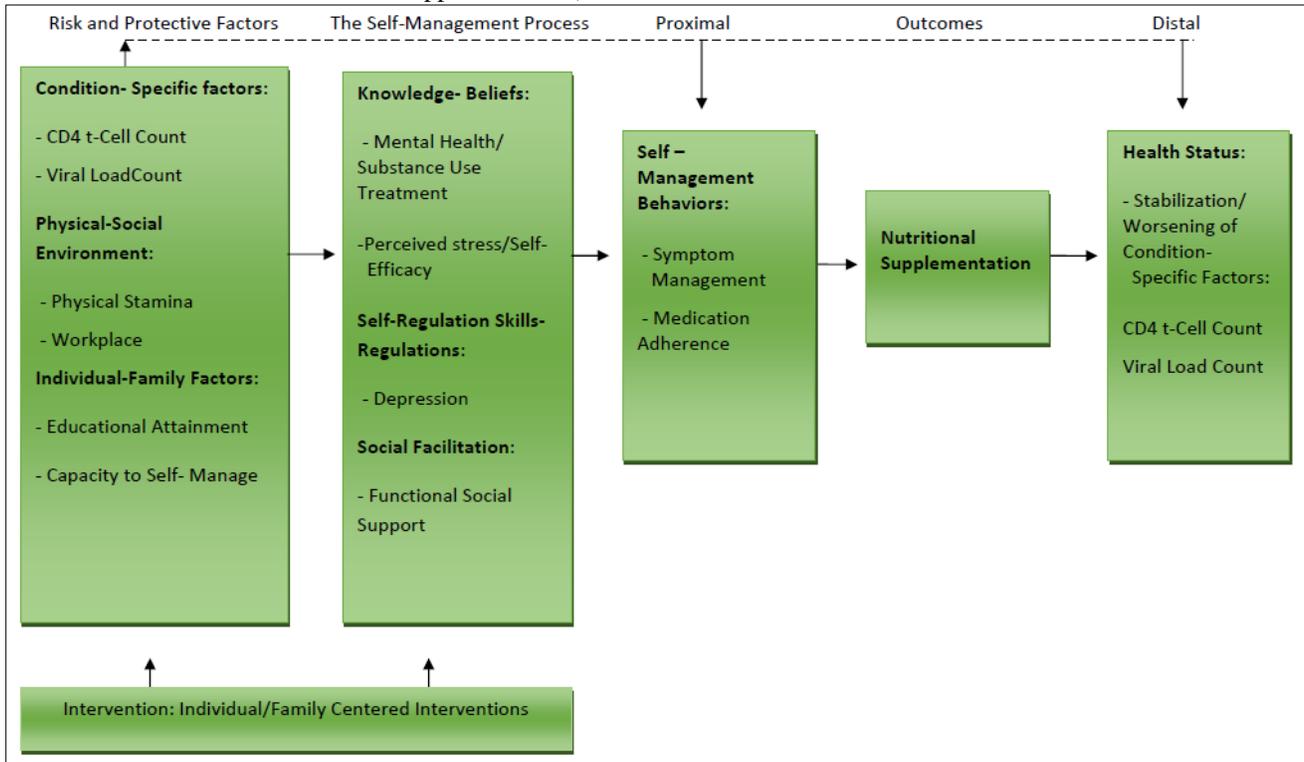
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health care and substance-use treatment, perceived stress-self-efficacy; self-regulation skills-depression; social facilitation-functional social support), Proximal Outcomes (self-management behaviors - symptom management, medication adherence; nutritional supplementation) and

Distal Outcomes (health status - stabilization/worsening of condition-specific factors - CD4 t-cell count, viral load count). The reader is referred to Ellis [7] for a detailed description of this framework.



**Figure 1.** A self-management framework.

Adopted with permission from Dr. Polly A Ryan at the Self-Management Science Center at the University of Wisconsin-Milwaukee

**THE HIV CARE CONTINUUM AND SELF-MANAGEMENT FRAMEWORK**

The United States Centers for Disease Control and Prevention (CDC) tracks HIV using a series of steps from the time a person receives a diagnosis of HIV, linked to care, received or were retained in care and has become virally suppressed. Viral suppression is measured as a viral load test result <200 copies/ml at the most recent viral load test during measurement year [8]. A person’s viral load is an indication of the level of the HIV virus in his/her blood. People living with HIV on HAART and who have an undetectable level of HIV in their blood not only have a longer life expectancy but also a negligible risk of transmitting HIV to their HIV-negative partners [8,9].

The self-management framework through its risk and protective factors, self-management process variables and proximal outcomes provide feedback to clinicians as to potential barriers in the received or retained in care step of the HIV care continuum that may prevent their patients from achieving a favorable distal outcome in this framework or reaching viral suppression in the last step of this continuum.

In this framework, self-management process variables-mental health care and substance-use treatment and cognitive-affective depression, have all been found to increase the need for nutritional supplementation among seropositive mothers [7]. This was found to be a barrier for many of these resource-constrained mothers because the nutritional supplements that were prescribed to them were over-the-counter (OTC) products, and had to be paid for out-of-pocket because the Medicaid Program in North Carolina did not provide coverage for the types of OTC products that these mothers were in need of; multivitamins, minerals, and nutritional drinks. This Medicaid policy, and it continues to be in place in this state along with 7 other states that do not provide this Medicaid benefit at all [10,11], and inability of resource-constrained people living with HIV to pay out-of-pocket or borrow money from their family members or friends to buy these OTC products to complement HAART circumvent them from achieving a favorable distal outcome in the self-management framework and reaching viral suppression at the last step of the HIV care continuum. This finding is important because the CDC [12] reported that in 2016, 11% of people living with HIV and receiving care

were not virally suppressed, accounting for one-fifth new transmissions during this time period.

## CONCLUSION

People living with HIV on HAART are experiencing longevity in the life course. This is so promising that in President Donald J Trump's State of the Union Address on February 5, 2019, it was announced that the goal of his Administration is to end the HIV epidemic within 10 years [13].

This initiative includes 4 key strategies:

1. Diagnose all people with HIV as early as possible.
2. Treat people with HIV rapidly and effectively to reach sustained viral suppression.
3. Prevent new HIV transmissions by using proven interventions, including pre-exposure prophylaxis (PrEP) and syringe services programs (SSPs).
4. Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them.

By adopting a treatment modality that utilizes the self-management framework in **Figure 1**, clinicians would be able to identify barriers while their patients are in care that could potentially hinder them from achieving strategy 2 in the government's goal to end the HIV epidemic. At the same time, strategy 3 will be met because with an undetectable viral load HIV is untransmittable [8,9,14].

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