Problem:

Liberia's recent history, including fourteen years of civil war and the Ebola epidemic, has left it unprepared to deal with ongoing issues in HIV care.

The civil war severely damaged economic and health infrastructure. Liberia's civil war spanned from 1989 to 2003 and resulted in over 250,000 civilian deaths.[1] Years of violence and political instability shrunk the country's GDP by 90% and left health systems fractured.[2,3] By 2003, only 5% of the existing health facilities in the country were left standing.[4] Following the conclusion of the war, Liberia received significant foreign aid. This development assistance funded the country's healthcare system, covering more than 75% of the country's health care costs in 2007.[5] However, foreign aid fell considerably over time, from $1.4 billion in assistance in 2010 to less than half of that, around $500 million in 2013.[6] Health care facilities, including hospitals, clinics, and targeted health programs, were left without adequate means to sustain themselves.

Exposure to violence and traumatic events increased health risks for the Liberian population. In the years following the civil war, exposures to warfare, community violence, family violence, and gender-based violence were high.[7,8] A community sample of 1,666 participants found that 40% of adults met the symptom criteria for Major Depressive Disorder (MDD) and 44% met criteria for Post-Traumatic Stress Disorder (PTSD), with higher rates among combatants and those who had experienced sexual violence.[9] Health risk behaviors, including drug use, alcohol use, and high-risk sexual behaviors also rose to the forefront of Liberian public health.[9,10]

The Ebola epidemic devastated the country's already-weakened health systems. In its post-war and post-aid fragility, Liberia was one of the hardest-hit countries in the 2014 Ebola epidemic, recording nearly 11,000 cases and 4,800 Ebola deaths between 2014 and 2016.[11] Many hospitals and healthcare facilities closed, and deaths of healthcare workers reduced the health workforce. The number of deaths due to reduced access to healthcare may have exceeded the number of direct deaths from Ebola.[12] Some estimates suggest the Ebola outbreak caused at least a 50% reduction in health care capacity.[13] Routine, preventative care visits decreased during the Ebola epidemic, reducing coverage of antiretroviral therapy (ART) for people living with HIV.[14]

Today, population characteristics and gaps in health infrastructure contribute to low life expectancy. Liberia's population of 5 million people is disproportionately young and poor. Forty percent the population is under the age of 15, and over 60% of Liberians meet criteria for multidimensional poverty.[15] Though the country has made significant progress in repairing its infrastructure, health systems, and workforce, the United Nations still classifies Liberia as a "Least Developed Country" based on its measures of its social, economic, and health outcomes.[2,3,16] Liberia's healthcare system provides nearly 50% of the effective, essential, and affordable services that the population needs, which is a vast improvement from its previous health coverage rate of 19% in 1990.[17] Life expectancy remains low, between 63 and 65 years, and infectious diseases remain among the top causes of death in the country.[18,19]

HIV is a significant population health concern in Liberia. UNAIDS reported an HIV prevalence of 1.1% for the population, but other evidence suggests that rates may be even higher.[20] A cohort study from 2013 to 2016 found an overall HIV prevalence of 3.2%, with higher rates of HIV in women than in men, and another study from 2014-2018 found annual case detection rates ranging from 7 to 13%.[21,22] Official HIV rates are likely an underestimate of the true prevalence in Liberia, but it is also possible that the country's low prevalence is a consequence of high HIV mortality.[21] In 2019, HIV was the leading cause of death for adults aged 15 to 49, accounting for 17% of all mortalities in the age group.[23] For all age groups, HIV/AIDS is the sixth leading cause of death in Liberia.[19]

Treatment for HIV has become widely available, but engagement in care and adherence to ART remain low. HIV testing and treatment have become more available and accessible to Liberians in recent years. The number of sites providing HIV testing increased from 22 facilities in 2006 to 585 in 2019, and the number of sites offering antiretroviral therapy (ART) increased from 3 to 237.[24] HIV care and ART coverage are important to both individual and population health. Consistent adherence to ART reduces an individual's morbidity and mortality, allowing them to live longer and healthier, and it reduces likelihood of transmitting HIV to others.[24,25] Retention in care refers to regular and sustained medical visits after HIV diagnosis, primarily for monitoring

overall health and receipt of ART. People living with HIV who remain in care have overall better health outcomes and lower mortality.[26] Despite the increased availability of services in Liberia, there has been a low uptake of HIV treatment and a high loss to follow-up among those who seek care.[27,28] Current rates of ART coverage in Liberia are estimated to be around 33-42%, far below the UNAIDS goal of 95% coverage by the year 2030.[17,24,29]

Mental health is a key barrier to engagement in care and medication adherence.[30] With the legacy of war and extreme poverty impacting many Liberians, symptoms of anxiety, depression, and PTSD are common.[31] Liberia's Minister of Health Dr. Wilhelmina Jallah noted the increased need for mental health services as a result of conflict and public health crises, stating, "All such emergencies have a huge impact on mental health."[32] For people living with HIV, poor mental health is associated with apathy, hopelessness, loss of interest, loss of concentration, and reduced self-efficacy for taking medication.[33,34] Depression is associated with lower adherence to ART and lower engagement in care.[34] The high prevalence of trauma and mental illness, combined with a lack of adequate health services, contributes to the persistence and possible expansion of the HIV epidemic.[9]

Mental health services are limited, and there is a lack of evidence-based mental health programming. Liberia has only one psychiatric hospital and two practicing psychiatrists in the country, but the Ministry of Health (MOH) has committed to expanding mental health care.[35] In collaboration with the Africa Centers for Disease Control, the MOH trained hundreds of community health workers to provide mental health services as part of a "task-shifting" model in which non-health professionals take on the functions of mental health care providers.[32,36] The MOH also prioritized the integration of mental health services in future emergency response plans, highlighting the growing emphasis on mental health care in Liberia.[32] However, there is a lack of both evidence-based mental health interventions and trainings for mental health care providers to address the consequences of trauma and loss.[31] Culturally appropriate interventions to address mental health among people living with HIV are weak or non-existent.

Evidence shows mental health interventions can improve engagement in care and ART adherence. A review of 43 psychosocial interventions for people living with HIV found that mental health programming has a positive effect on medication adherence.[37] Interventions using elements of peer support, professional counseling, and/or Cognitive Behavioral Therapy (CBT) strategies were most effective in improving medication adherence and reaching viral load suppression.[37] Nigeria, Cameroon, Malawi, Uganda, and Zimbabwe are among the countries to successfully implement culturally adaptive mental healthcare as part of HIV treatment. These programs provide support for the feasibility and acceptability of similar interventions in Liberia.[38-42] For example, one psychosocial intervention in Zimbabwe provided counseling and social support through mentorship and group therapy to adolescents with HIV. Participants in this program experienced improved in mental health, better connection to services, and greater retention in HIV care.[43]

This proposed intervention will address mental health as a means of improving HIV care in Liberia. Symptoms of depression, anxiety, PTSD are barriers to engagement in care and medication adherence.[34,44] Removing these barriers will enable people living with HIV to remain in care, adhere to ART, and achieve viral suppression. Improvements to the mental health of people living with HIV will facilitate better retention to care and medication adherence, which support the ultimate goal of viral load suppression.

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