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Chapter

Employment as a Social Determinant of HIV Care and Prevention Outcomes

Liza Conyers, Jen Yung-Chen Chiu, Sergio Rueda, Mark Misrok, Vickie Lynn and Erin McKinney-Prupis

Abstract

Advancements in HIV medicine have led to an increased desire and/or need to work for many people living with HIV. Despite the importance of work, relatively little attention has been devoted to specifically examining employment status as a social determinant of health. Unemployment/underemployment are associated with societal circumstances known to increase both the risk for acquiring and prevalence of HIV and other co-morbidity. Research indicates that being employed and use of vocational services is associated with positive physical and mental health outcomes. However, these positive outcomes can dissipate under poor or unstable work conditions. Transitions into or out of the workforce can also increase the risk of poor health associated with stress and potential disruptions or loss of access to critical health care. Given that individuals disproportionately impacted by HIV are also impacted by labor market discrimination, social exclusion, and poverty, there is an emerging sense of urgency to better respond to the employment needs of people living with HIV. This book chapter (a) reviews research related to employment as a social determinant of health, (b) provides an overview of the client-focused considering work model, (c) highlights key employment services, and (d) discusses implications for policy, service delivery and research.

Keywords: HIV, Social Determinants of Health, Employment, Unemployment, Quality of Life, HIV Care, Integrated Services

1. Introduction

People living with HIV (PLHIV) face numerous social and economic barriers including poverty, unemployment/underemployment, job insecurity, and lack of access to vocational services and education. Such barriers decrease their access to and retention in healthcare systems resulting in vulnerability to sub-optimal treatment adherence, poor clinical health outcomes, and poor quality of life [1, 2]. Because of the significant likelihood of job loss and/or underemployment after diagnosis, HIV can have a devastating impact on one's socioeconomic well-being [3, 4]. Although advancements in HIV medicine provide a pathway to end the HIV epidemic, many PLHIV are not able to access and/or stay connected to the biomedical and behavioral interventions needed to achieve viral suppression due to social determinants of health (SDH) [5] - social, economic, and political systems that can impact health

risk and outcomes. The key indicator of HIV treatment efficacy, viral suppression, is essential to both improve individual health outcomes and prevent forward transmission of HIV. In recognition of the need to expand biomedical interventions to end the HIV epidemic, the United States Centers for Disease Control and Prevention [6] has adopted a SDH framework in developing interventions to address health-related disparities. SDH can be as broad as social, political, and economic systems, which are often referred to as upstream determinants of health, or can be more proximal indicators such as neighborhood, economic status, access to health care, housing, and employment among others. Although there has been an abundance of literature on a range of different determinants of HIV health (e.g., race, poverty, homelessness), there has been limited research related to understanding the role of employment as a social determinant of HIV health outcomes.

Since HIV is now considered to be a chronic illness with limited impact on life expectancy among those who have access to and engage in HIV treatment, many PLHIV are interested in starting or returning to work, to support themselves financially and contribute to society. Currently, living with HIV is as much about social integration and maintenance of independence as it is about optimizing access to medications and health care. Unemployment and underemployment are associated with societal circumstances (e.g., homelessness, food insecurity, incarceration) and activities (e.g., sex work, illicit drug use) known to increase both the risk for acquiring and prevalence of HIV and other co-morbidities; this complex, multi-layered context also creates significant barriers to health care access and employment services for individuals living with or more vulnerable to HIV. Within the context of these challenges, this chapter provides an overview of international research findings that highlight the relationship between work and health for PLHIV. We also describe the client-focused considering work model that was designed to help guide the complex process of exploring work options for PLHIV and highlight key employment service interventions. We conclude with implications for research, policy, and service delivery.

2. Employment as a social determinant of health

Rates of employment for PLHIV can be difficult to assess. According to studies in the US, Canada, and France, 45–62% of people with HIV are unemployed or receiving some form of disability assistance [7]. A nationwide population-based study in Sweden found that PLHIV were less likely to be employed than those who are HIV negative although the differences have decreased over time [8]. However, this study also revealed differential outcomes based upon key demographic factors (e.g., migrant status) and mode of HIV transmission (e.g., intravenous drug use). Another study examining the impact of foreign funding for HIV on employment rates found a 13 percent differential increase in employment rates for males in ten African countries that received the President's Emergency Plan for AIDS Relief [PEPFAR) funding compared to countries that did not receive PEPFAR funding [9]. This outcome was in contrast to a sharp decline in employment among females in PEPFAR-funded countries during the same time period. Overall, research indicates that the employment rates among PLHIV are lower than those reported in the general population [8]. These studies underscore that the heterogeneity of PLHIV as well as the political, social, and economic differences across countries can lead to wide variations in employment outcomes for this population. As such we need to better understand the relationship between employment and health, for the individual themselves, and for societies as a whole. The best way to minimize social exclusion for PLHIV is to promote (re) integration into the labor market for those who can, and wish, to work.

A systematic literature review investigating the impact of returning to work on health outcomes among the general population found that going back to work can improve one's health [10]. Longitudinal studies support the health benefits of return-to-work in a variety of populations and settings by showing significant improvements in health after going back to work or significant declines in health associated with continued unemployment. Cross-sectional and longitudinal research studies that examined employment and HIV health outcomes among different populations (including men living with HIV who have sex with men) attending tertiary care clinics in the U.S. and Canada [11] found that employment status was associated with both physical and mental health after controlling for clinical covariates (demographics, HIV-disease markers and psychosocial factors) and that these differences were clinically meaningful. Carlander [8] found that both satisfaction with psychological well-being and satisfaction with physical health were associated with being employed in Sweden. Broader HIV health outcome indicators include health-related quality of life (HRQOL), which is a multidimensional concept that includes symptom management, perceived physical and mental health role functioning, activities and participation, and life satisfaction. Research studies indicated that PLHIV who were employed had higher HRQOL compared to their unemployed counterparts [10, 12, 13]. Employment is a critical determinant of HRQOL as it is a source of financial and life stability. Other benefits associated with employment include better social functioning, handling of life difficulties, and health management [10, 13, 14]. One study that examined the impact of employment on mortality rates among people living with HIV who inject drugs found that independent of markers of disease progression, employment was associated with lower rates of mortality [15]. More recently, Ware et al. [11] investigated depression risk in men living with HIV and found that employment was protective of developing depressive symptoms over time but retirement, often a planned separation from employment, was not associated with an increased risk of developing depressive symptoms. These findings are consistent with conclusions from systematic literature reviews investigating the relationship between employment status and health in samples of PLHIV, which have found that employment is associated with better physical and mental health status [10, 14].

When considering employment status as a SDH, it is also important to consider the impact of unemployment and/or unstable work as both are associated with increased risk for PLHIV developing psychological problems such as anxiety, depression, suicidal ideation, and other psychiatric symptoms [16]. Decades of research has demonstrated a strong link between poverty and poor health outcomes among vulnerable populations [17, 18]. An HIV diagnosis can have detrimental effects on the wellbeing of PLHIV and lead to job loss or decreases in productivity. [2, 16]. Research that investigates the impact of employment transitions indicates that those who are on an upward employment trajectory (i.e., transitioning from unemployment to being employed) tend to have no changes or positive changes in health behaviors while being on a downward employment trajectory (i.e., transitioning from employment to unemployment) is associated with greater health risk behaviors [2]. When examining the impact of employment, one must consider how outcomes may differ by quality of employment. In a cross-sectional study in Canada, Rueda et al. [7] found that job security offers additional mental health benefits over and above participation in employment alone for men with HIV but not for women. Gender differences may be explained in part by differences in the structure of occupations and characteristics of jobs available to men and women. However, individuals who have jobs characterized by high psychological demands, low decision authority, and limited job security report similar outcomes related to symptoms of depression and quality of life as unemployed individuals [7, 19].

PLHIV who have temporary or unstable employment are at increased risk of death compared to those with stable employment [20]. Returning to work can also act as a barrier to retention in medical care and can lead to increase in stress and anxiety for some PLHIV [20–22].

Of note, negative employment outcomes (e.g., job loss, underemployment) are more prevalent among key populations disproportionately impacted by HIV, including racial/ethnic minorities, transgender, gay or bisexual individuals, people with substance use disorders, older adults, and individuals who were formerly incarcerated; these populations are also disproportionately impacted by labor market discrimination, exclusion, and poverty [2]. A qualitative study examining employment as a SDH among gay men and transgender women in the Dominican Republic, indicated that unemployment had a negative impact on mental health and overall well-being [23]. Survey research findings indicate high levels of HIV employment discrimination (e.g., exclusion in the workplace, forced disclosure of HIV status, terminations or unwillingness to hire or promote PLHIV) [2]. In a study examining the effects of quality of work on 339 PLHIV in China found that negative self-image and workplace discrimination were detrimental to employment quality; however, male and highly educated respondents were better able to use social and policy supports to increase employment quality compared to their peers [24].

In addition to the research on HIV health and employment, limited research exists that examines the impact of employment on HIV health and prevention outcomes across the HIV Care Continuum and the HIV Status-Neutral Prevention and Treatment Cycle. The HIV Care Continuum is a public health framework developed by the Centers for Disease Control [25] for monitoring the progress of PLHIV from initial diagnosis towards viral suppression. The outcome indicators are diagnosis of HIV, linkage to HIV medical care, retention in HIV medical care, medication adherence, and viral suppression [25]. The HIV Status-Neutral Prevention and Treatment Cycle expands upon the HIV Care Continuum Model to apply a continuum frame work to both PLHIV and those most vulnerable to acquiring HIV with the ultimate goal of eradicating HIV through combination antiretroviral treatment for PLHIV and pre-exposure prophylaxis (PrEP) for those most vulnerable to HIV. Review of the research indicates a strong relationship between employment status and outcomes across the HIV Status-Neutral Prevention and Treatment Cycle. Unemployment and underemployment are associated with societal circumstances (e.g., homelessness, incarceration) and activities (e.g., sex work, illicit drug use) known to increase both the risk for acquiring and prevalence of HIV and other co-morbidity; this complex, multi-layered context also creates significant barriers to health care access and employment services for individuals living with and at risk for HIV. A longitudinal study in Vancouver, Canada that examined the relationship between employment cessation and behaviors associated with HIV transmission risk among people who inject drugs found that loss of employment was significantly associated with increased housing instability, illegal income generation, and high-risk drug-use practices [26]. Furthermore, participants with lower long-term labor market participation had higher HIV seroconversion rates. The authors conclude that exiting the labor force is associated with increased economic marginalization and drug use behaviors that increase exposure to HIV. Preliminary findings from the National Working Positive Coalition – Vocational Development and Employment Needs Survey 2019 (NWPC-VDENS) also suggest that, for many, transitions from unemployment to employment are associated with individual and public health benefits, including a reduction in HIV-related health risk behaviors [27]. Another study indicated that not being able to work impeded engagement in HIV care among a sample of gay men and transgender women in the Dominican Republic [23]. Nachega et al. [1] conducted a meta-analysis of 28 studies examining

the relationship between employment and medication adherence and found that employed research participants had 27% higher odds of adhering to antiretroviral treatment than those who were unemployed. Although there was variation across low, middle, and high-income countries, the results demonstrate the positive role that being employed can have on HIV medication adherence. Another study examining predictors of medication adherence in Tanzania found that unemployment was associated with non-adherence [28]. However, one study in Toronto, Canada found that being employed was associated with discontinuous HIV care [28]. A qualitative study examining the perspectives of PLHIV in Bolivia helps to shed some light on discrepant findings related to employment status and medication adherence [29]. Overall, participants in this study reported complex economic activities and challenges with the dual management of HIV and their livelihood [30]. To a large degree, their skills and workplace flexibility and support played a major role in the extent to which employment fostered medication adherence or not. Common challenges that study participants reported included reluctance to disclose HIV status, challenges getting permission for time off for medical visits, and challenges related to the limited hours and geographic locations of medical clinics. In light of the potential benefits and risks of employment on their health, PLHIV and their service providers could benefit from having a comprehensive framework to help guide vocational decision-making that carefully evaluates the impact of employment transitions on medical, psychosocial, vocational, and financial/legal outcomes.

3. Client-focused considering work model

Receiving an HIV diagnosis is a traumatic event and, similar to the diagnosis of other chronic illnesses, an HIV diagnosis can fundamentally alter employment and career trajectories. Unfortunately, research studies indicate that many people living with HIV and other chronic illnesses are not informed of employment supports and models that can foster engagement in vocational development and employment opportunities. [31, 32]. PLHIV, like many others with chronic illness or health conditions, face many challenges when exploring work decisions whether it be the decision to transition in or out of paid employment, changing jobs, or seeking volunteer work. To assist with this decision-making process, Goldblum and Kohlenberg [33] developed the client-focused considering work model for people living with HIV, which was the first of its kind to help structure key factors for consideration by PLHIV when contemplating changes in employment status.

In 2018, this model was revised to apply to all people with emerging or episodic illness [34]. However, the fundamental aspects of the model are consistent with a primary focus on the self-determined (i.e., client-focused) decision-making that integrates the transtheoretical model of change [35] to help illuminate the different types of work-related decisions, services, and resources needed when individuals are at different phases of considering work options: contemplation, preparation, action, or resolution. According to this model, the considering work process begins when a person feels a pressure to change in one of four domains: medical, psychosocial, vocational, and financial/legal. Medical advancements have reduced health-related barriers to work for many and research indicates that one of the primary motivators to work is financial need [2] Psychosocial pressures to change include wanting to be a role model for others and vocational motivators can include being laid off or opportunities for career advancement. Each of the domains of influence in the client-focused considering work model (CFCWM) reflect different SDH that have been studied related to HIV health including demographic factors such as race, ethnicity, age, gender, gender identity, sexual orientation, and education level all

have an impact on PLHIV's health status and treatment outcomes [34]. Psychosocial factors include stressful life events (i.e., homelessness, food insecurity, abuse, intimate partner violence), social support, HIV self-management skills, and use of non-clinical support services. Medical factors include access to and retention in HIV treatment, and comorbidity with other health conditions (e.g., substance use disorder, mental health, kidney, hepatic, and bone diseases). Financial factors such as work earnings and overall income are associated with health outcomes as they are indicators of whether people have enough funds to meet their basic needs. These SDH are all interrelated. For example, psychosocial issues encountered by gay men and transgender women (e.g., family and/or school rejection) can lead to limited employment opportunities. Likewise, poverty can also limit career development and vocational options. When designing individually responsive vocational interventions for PLHIV, one must plan for the different needs at each phase of considering work as well as the medical, psychosocial, financial/legal and vocational factors that can either limit or facilitate social and economic empowerment.

Interventions during the contemplation phase focus on responding to the question: *Is any change feasible*? This could entail medical assessments, job accommodation reviews, and/or assessing the impact of work on public benefits and access to health insurance. If the risks of pursuing work exceed the benefits of working, work may not be considered a feasible option. At the preparation phase, the focus shifts to: *What kind of change is best*? The response to this question includes setting vocational goals and evaluating progress towards those goals as one prepares for changes in work status. Preparation may entail additional schooling or vocational training needed to achieve a vocational goal. The main focus of the action phase is: *How to achieve the goal?* This could entail sending out job applications or resumes and interviewing for positions. Resolution occurs when the individual is satisfied with their vocational outcome or no longer feels pressure to change. The process of considering work is often non-linear. As a person begins their journey from contemplating a change in work status to preparation, and/or action, several factors may lead to reconsideration of goals and desired outcomes and moving back and forth among the stages of change until resolution is achieved. According to this model, the considering work process is complete when the pressure to change has been resolved either through successful attainment of paid employment or other outcomes such as engaging in volunteer work or deciding not to make any changes [34]. The core value in the CFCWM is underscoring the importance of having access to the resources and support to make informed, self-determined decisions. Without a framework, one may not be aware of the wide variety of employment services and policies that are designed to help facilitate work for people with a range of health challenges and disabilities.

The client-focused considering work model has been applied to the development and evaluation of a number of vocational interventions including *Making a Plan* (MAP), an eight-week group intervention to help PLHIV develop and implement vocational goals. Outcomes from a study examining this intervention [36] indicated increased preparedness and progression towards vocational goal attainment, reduced vocational concerns, less hesitancy about returning to work. It was also used as a framework to evaluate an integrated housing and employment intervention entitled *Foundations for Living* [37] and an HIV prevention intervention for African American women: *Common Threads* [38, 39]. This model was also used to develop *Getting to Work: An Online Training Curriculum for HIV/AIDS Service Providers and Housing Providers* [40].

Conyers and Boomer [41] empirically validated the CFCWM on a sample of 1,702 PLHIV who completed the National Working Positive Coalition's Employment Needs and Vocational Development Survey (NWPC VDENS). As anticipated, items loaded

on each of the four domains: medical, psychosocial, vocational, and financial/legal. However, the vocational domain had two sub-factors: vocational concerns and vocational confidence. This finding is not surprising given that social cognitive career theory [42] distinguishes vocational barriers from vocational confidence and the CFCWM highlights ways in which each of the domains can limit or facilitate decisions to change employment status. Overall, the CFCWM can be used to help structure and evaluate vocational interventions and training to help expand understanding of the SDH involved in addressing the vocational needs of PLHIV.

4. Key employment interventions

In addition to employment, engagement in vocational services is associated with positive HIV health and prevention outcomes related to the HIV Care Continuum. Researchers have identified that use of vocational rehabilitation and employ-ment services is associated with use of medical and mental health services, use of supplemental employment services, higher health-related quality of life, and reduced health-risk behaviors associated with HIV transmission [43, 44]. A program evaluation of an integrated employment and HIV prevention intervention for African American women with HIV, *Common Threads*, indicated that 95% of participants were more willing to share personal stories with family, friends, and community members after completing this intervention to reduce HIV stigma and to proactively educate other women about HIV [38, 39]. Additionally, many also reported positive vocational outcomes including skill development and participation in marketplace activities selling their crafts at national conferences [38]. In light of the diversity of communities and individuals most impacted by HIV and their varied employment support needs, a variety of employment service delivery models have emerged to respond to these needs over the years. The following sections discuss several employment services that have been developed and implemented to facilitate vocational development and work entry/re-entry among PLHIV.

4.1 Integrated employment services

People with emergent disabilities, chronic or episodic illness often experience multiple life challenges. For example, individuals often experience unemployment and unstable housing at the same time, as employment status and financial status often go hand in hand. In a large-scale longitudinal study in Canada, one-fifth of the participants with HIV had transitioned in and out of employment due to contextual barriers, such as unstable housing [7]. The intersection of housing, poverty, unemployment, and poor health outcomes underscores the need for integrated structural interventions to address these complex issues. To respond the multiple, inter-related challenges that many PLHIV face, a panel of HIV service providers recommended integrating employment services within AIDS services organizations [45] as interdisciplinary services are needed for PLHIV to enter/re-enter the workforce. Scholars also recommend the provision of client-centered, holistic services provided by an interdisciplinary team as most effective, including health practitioners, case managers, social workers/mental health professionals, peer specialists, and vocational rehabilitation professionals [46].

The Housing Opportunities for Persons with AIDS administration [47] recommends ongoing and comprehensive HIV services One of the structural interventions provided to eligible PLHIV is integrated employment and supportive housing services, which results in improved HIV treatment outcomes, mental and physical health outcomes, quality of life, as well as reduced health-risk behaviors

(i.e., drug use; [48, 49]). For example, the Foundation for Living Program was a demonstration project funded by the U.S. Housing and Urban Development's Housing Opportunities Program for People with HIV that was designed to provide integrated employment and housing services [47]. Eligibility for the FFL program included expressing an interest in employment, being physically and emotionally ready to participate in vocational activities, actively engaging in HIV medical treatment, and demonstrating a need for housing assistance. Participants developed an Individualized Service Plan (ISP) and worked with an employment specialist to achieve their employment goals. Participants in the program also received housing stipends and housing services. The program evaluation of the FFL program indicates that among the 58 participants who completed reassessments, 44.8% gained or maintained employment, approximately 30% reported a decrease in the amount of their housing subsidy, and over 80% achieved viral suppression [27]. The reduction in the use of housing subsidies by some allowed the reallocation of these resources to other PLHIV in need of stable housing. Providing integrated employment and housing services to PLHIV is an emerging trend and additional research is needed to further evaluated the effectiveness of this integrated service delivery model.

4.2 Micro-enterprise employment intervention

Micro-enterprise employment has been used in low-income areas to help economically vulnerable populations to engage in income generating work. HIV prevention microenterprise interventions have been applied for diverse populations. The EMERGE Project is an experimental microenterprise intervention for African American young adults who were unemployed or underemployed and unstably housed. The intervention group received text messages with employment resources, business education information, HIV prevention information, and a start-up grant for $11,000 U.S. dollars, which could only be used for microbusiness essentials. Results of the randomized clinical trial study show that participants in the intervention group achieved better employment and HIV prevention outcomes [50]. *Common Threads*, the integrated employment and HIV prevention program, also has a component of microenterprising, identified as the Micro-Enterprise (ME) Circle. The purpose is to reduce the impact of poverty on African American women living with HIV by increasing financial independence. Participants are encouraged to engage in marketplace activities, such as selling their crafts at national conferences. Many participants reported positive vocational outcomes including skill development and participation in the Micro-Enterprising Circle [38].

4.3 Peer employment model

The integration of peer educators/providers in HIV prevention and care services has demonstrated positive outcomes and has been adapted in many countries [51]. A peer employment model has also been developed in recent years to empower PLHIV to be involved in employment within the HIV services workforce. Peers are defined as people who have shared similar lived experiences (i.e. men who have sex with men, people who inject drugs, sex workers), and/or community members [52]. White et al. [53] defined peer health education (PHE) as "teaching or sharing of health information, attitudes, values, and behaviors by members of the group who are similar." Peer interventions and education have been utilized in the prevention and treatment of mental health disorders, addictions, and chronic health conditions. Peer educators have been incorporated into HIV care and prevention programs since the start of the epidemic [54]. HIV peer workers provide a variety

of services including health education, psychosocial support, community outreach, linkage to and support in medical appointments, and treatment adherence. The rationale of peer interventions and education is that peers can provide appropriate norms and people are more likely to emulate a behavior if their model is a realistic figure for self-comparison. Peers can also reach out to and develop access to PLHIV communities in ways that other professionals cannot. Peer training and workforce development has become more formalized as state and national certifications have been created in the U.S. In 2012, Georgia was the first state to bill for health and wellness services delivered by peer workers with additional states following with development of peer certification processes in 2014. Peer certification is fairly new in the field of HIV services. New York State began an HIV, HEP C, and harm reduction peer certification in [55]. Peer-delivered services in health and wellness programs have been eligible for Medicaid reimbursement in the states with peer certifications. This has led to the professionalization and expansion of the HIV peer workforce. Peer training and certification programs contribute to development of a broader, more representative HIV workforce better equipped to provide culturally responsive services, and can help expand vocational development and employment opportunities for PLHIV.

5. Implications for policy, research, and service providers and employers

Advances in HIV medicine and increased access to treatment have expanded both the possibility and need for PLHIV to engage in the workforce in every part of the world. Despite these biomedical advancements, addressing the employment needs of PLHIV and examining the impact of employment as a SDH is relatively new and has significant implications for policy, research, and service delivery.

5.1 Policy implications

The International Labour Organization (ILO) issued Recommendation 200, calling for national policies and programs on HIV and employment that facilitate workforce development, sustainable enterprises, and increased work earning strategies [56]. In response to this call, exploring the degree to which existing health care, workforce, and other social policies, as well as statutes and regulations, impact employment inclusion is critical. Policy changes such as reduced eligibility for public benefits for PLHIV need to be assessed to ensure that decreased access to programs supporting income, housing, and health care does not lead to increased engagement in work that negatively impacts access to and engagement in HIV care, ability to maintain viral suppression and quality of life. Global and country-level research studies in Kenya and Zambia indicate that PLHIV experience a high level of workplace discrimination, such as exclusion in the hiring process or the workplace, forced disclosure of HIV status, and employment termination [57]. A study in Singapore also reveals that the success of obtaining and sustaining employment is contingent upon maintaining confidentiality of HIV status [58]. Ensuring that disclosure of HIV status and participation in HIV testing is voluntary will reduce workplace discrimination. Policy coordination across sectors including public disability benefits, health care and insurance, employers, workforce development and vocational rehabilitation are needed. Peters [59] recommends the strategic coordination of policies across government programs that work to remove redundancy in programs or services and to close existing service gaps. Working together, policymakers, service providers, and PLHIV can outline and enact optimal policy changes related to program eligibility, income supports, and vocational opportunities for

PLHIV. People living with HIV who can work and want to work should not live-in fear of losing access to life-saving health care, treatment, or supportive services.

5.2 Research implications

Unfortunately, many policy decisions related to restriction of public benefits and eligibility for employment services are implemented with limited research examining the role of employment as a SDH. For example, there are limited studies that provide a better understanding of the unique needs of populations most impacted by HIV and that examine the impacts of variations in the quality of work settings and job demands on HIV care and prevention outcomes. More research is needed to fully understand the role of employment services, employment status and work conditions on reducing health disparities and increasing health and economic equity. Much research investigating the impact of work and health disparities on PLHIV has been limited to considering dichotomous outcomes: employed versus unemployed. This limitation is largely due to the absence of data related to employment in the majority of available datasets. There is a need for researchers and stakeholders to identify existing and new datasets and statistical models to better understand a) the mechanisms and pathways by which vocational development and employment services, and employment status, function as determinants of health; and b) the impact of work transitions on retention in care, treatment adherence, health outcomes, and on quality of life and well-being [60]. Integrating measures that would allow application of the client-focused considering work model to examine job characteristics, stages of considering work, and associations between each domain of influence is needed to better assess outcomes related to employment status, job retention, career advancement needs, and health, quality of life, and well-being outcomes. This framework could also be further developed and applied to program evaluation of vocational interventions internationally. Empirical studies looking at the outcomes of vocational rehabilitation, workforce development, and other employment-related services, as well as the associations with health, prevention, and quality of life outcomes are needed. In response to this need, the ILO supports research on the relationship between employment and HIV care and prevention outcomes to better understand the role that employment plays in the lives of PLHIV [1].

5.3 Implications for service providers and employers

Rather than maintaining a narrow focus on biomedical interventions, service providers need to incorporate a culturally responsive, trauma-informed, holistic approach that includes both reducing barriers that limit vocational development and employment opportunities and tailoring services to the complex interpersonal and social needs of those most impacted by HIV. Given the variation in employment challenges and HIV health and economic outcomes across different populations most impacted by HIV, vocational development and employment information and services for people living with or at greater vulnerability to HIV need to be integrated throughout HIV care and prevention services beginning at intake [60]. Service providers with a focus on HIV care and prevention are especially likely to prioritize awareness and elimination of HIV stigma, and could provide resources needed to support individuals' ability to make fully informed vocational development and employment decisions with focus on legal rights and protections, health and economic well-being, quality of life, and access to opportunities. To facilitate peer workforce development, standards, policies, and procedures for peer provider training, hiring and employment, fair compensation, mentorships, and professional

development need to be established [60]. Furthermore, as PLHIV experience transitions into, within, and out of employment, service providers need to anticipate, assess, and address the impact of these transitions on health (engagement in care and viral suppression) and well-being. Career decisions of people living with HIV are often impacted by the threat of losing needed public benefits if work earnings impact ongoing access to healthcare, housing, food, and other critical safety net provisions for people with disabilities or chronic health conditions. As health improves, benefits counseling and advisement is an essential service for PLHIV who would like to work without the risk of losing supports necessary to ensure greater health and economic equity [60].

Disability policies must balance the potentially conflicting needs to provide assistance for those who could not work, as well as incentives for those who can work in a way that meets their essential needs [61].

Research in Malawi indicates that addressing HIV-related stigma in the workplace is critical to improving labor force participation. Sprague et al. [57] proposed the employment continuum framework, which addresses HIV stigma and workplace discrimination at various workforce entry points. Other recommendations include promotion of equity and inclusion in hiring practices, including establishing organizational policies that ensure non-discrimination and safety.

6. Conclusion

Advances in HIV research have increased the availability and distribution of antiviral therapy and have drastically changed the course of the HIV epidemic. People diagnosed with HIV who begin care and treatment early can now expect to live a normal lifespan, despite higher rates of co-morbidities than their HIV-negative peers [62]. These advances provide an opportunity for policymakers, service providers, and researchers, together with PLHIV and other stakeholders, to rethink the health and social services provided to this population. The public health approach has changed from caring for the dying in the 1980s to integrating health and social services that holistically support the health and well-being of people living with HIV. Today, we need to expand services to go beyond the medical model to include vocational and educational supports and provide supportive services for people living with and at greater vulnerability to HIV transmission. Vocational opportunity and employment supports are prevention and treatment interventions and can be adopted and implemented in existing community-based organizations and clinics that serve the health and social service needs of PLHIV and those at greater vulnerability to HIV. We now need policymakers and other stakeholders to recognize the need to develop evidence-informed policies to address the growing vocational needs of this population.

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Conflict of interest

The authors declare no conflict of interest.

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