



The Impact of Ancillary HIV Services in Improving Retention in Care and How They Can Be Prioritized and Allocated to Maximize Outcomes

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ABSTRACT

Background: Community programs play a vital role in providing ancillary HIV services, including prevention, treatment, and support. This scoping review aims to synthesize evidence on the impact of ancillary services on retention in care and identify strategies to prioritize and allocate resources effectively. **Methods:** A comprehensive search of peer-reviewed literature published in the last decade was conducted. Fifteen studies were selected based on predetermined inclusion criteria, and data were extracted and analyzed to identify key themes and findings. **Results:** Community programs offering a range of services, including HIV testing and counseling, ART provision and follow-up, nutrition support, psychosocial support, and financial support, were found to positively impact care retention. These programs increased access to ART, improved adherence, enhanced treatment outcomes, and reduced loss to follow-up. A patient-centered approach to chronic disease care was also identified as an effective strategy to empower patients to manage their condition. **Conclusion:** This scoping review highlights the importance of community programs in improving retention in care and treatment outcomes for individuals living with HIV. Decentralizing HIV services through community-based initiatives is a promising strategy to increase access to essential health services. Policymakers, managers, and healthcare providers should recognize the value of community programs and work to enhance and support their role in the response to the HIV epidemic.

Keywords: Ancillary HIV services, retention in care, impact, outcomes.

INTRODUCTION

Ancillary HIV care services are defined as support services that complement primary HIV care, which, for example, include case management, peer support groups, and non-HIV-related medical care like dental, vision, mental health, and substance abuse treatment. Additionally, essential services like food assistance, transportation, and housing support also play a crucial role in helping people living with HIV (PLHIV) stay engaged in care and achieve viral suppression (DeGroote et al., 2016; Centers for Disease Control and Prevention (CDC), 2020a; Dasgupta et al., 2022).

Providing additional support services like childcare, mental health care, and substance abuse treatment can significantly improve HIV care outcomes by addressing patients' broader needs. Similarly, prioritizing and appropriately allocating these ancillary services can help address care barriers and improve clinical outcomes. This comprehensive approach can lead to better health results and increased patient satisfaction, and ultimately, it can help PLHIV stay engaged in their care. (CDC, 2020a; Dasgupta et al., 2022).

Recognizing the importance of ancillary services in comprehensive HIV management, countries around the world, including Nigeria, are gradually incorporating them into routine HIV care.

Nevertheless, PLHIV still face gaps in ancillary support services such as mental health care, substance abuse treatment, and other forms of ancillary care, which are crucial for their overall well-being and quality of life. (DeGroot et al., 2016; CDC, 2020a; Dasgupta et al., 2022). Therefore, it is imperative for HIV programs to develop strategies that will facilitate access to ancillary support services.

There are several ancillary services that programs can leverage to improve the care continuum in HIV programs, therefore, ensuring that these services are prioritized and appropriately allocated can guarantee maximum HIV care outcomes where PLHIV remain engaged and retained maximally in the HIV care continuum. Given that adhering to HIV care and treatment plans facilitates viral load (VL) suppression, thereby improving overall PLHIV's health and quality of life and reducing viral transmission, ancillary services are therefore necessary to achieve adherence to HIV care and treatment plans. Consequently, this review is crucial and aims to identify the most effective ways to leverage ancillary support services and develop strategies for prioritizing and allocating them to achieve the greatest possible benefit and HIV care outcomes.

Use of Ancillary Services in HIV Care Retention

Continuous medical care and monitoring, also known as staying in care or care continuum, is crucial for PLHIV after their initial diagnosis, ensuring they receive ongoing treatment and support to manage their condition effectively. It involves consistent visits to a healthcare provider, starting antiretroviral therapy (ART), and attending follow-up appointments (Spach, 2024). Good retention leads to effective virus suppression and better overall health. By consistently engaging in care and adhering to treatment, PLHIV can achieve viral suppression (undetectable viral load), improve CD4 cell count (boosted immune system), reduce the risk of disease progression, lower the risk of transmission to others, minimize acute healthcare utilization (i.e. emergency rooms) improve overall health and well-being and increase life expectancy and quality of life (Dasgupta et al., 2022).

'Retention in HIV care' is seen as continuous engagement from diagnosis in a package of prevention, treatment, support and care services (WHO, 2012). Messeri et al (2002) proposed that "'Retention in care' implies remaining connected to medical care, once entered." It begins from the moment of the initial engagement in care, when a person with HIV is linked successfully to services, to assessment for eligibility, initiation on ART and retention in lifelong ART care (WHO, 2012). In other studies and reports, it sometimes includes the period from diagnosis to successful linkage to care; patients alive and on ART at the same facility or those formally transferred out to another ART unit and thus assumed to be on therapy (Cheever, 2007; Massaquoi et al., 2009). In Resource Limited Setting, retained patients have been defined as "patients known to be alive and receiving highly active ART at the end of a follow-up period" (Rosen et al., 2007). It is defined as the percentage of patients who remain in care and do not end their care at some interval of time after a scheduled appointment. (Geng et al., 2011). The actual interval, however, is not clearly established and has been set as 14 days (Hochgesang et al., 2006), 30 days (Bisson et al., 2008), 90 days (Bassett et al., 2009), 6 months (Geng et al., 2008), or 1 year (Muwanga et al., 2008).

Several studies have attempted to understand the determinants of retention through identifying factors associated with retention. From findings of these studies, factors such as cost

of transportation to clinic (Geng et al., 2010; Rabkin et al., 2010), poverty (Ochieng-Ooko et al., 2010; Weiser et al., 2010), social support, stigma, and disclosure (Wringe et al., 2009; Ware et al., 2010) were identified as among the major barriers in the HIV care retention. Certain program strategies, however, have been shown to be associated with greater retention in care. Given the aforementioned structural barriers such as transportation issues, programs that deliver care in a decentralized way or provide home-based care may improve retention in care (Etienne et al., 2010), underscoring the impact of ancillary services in HIV care retention.

In Nigeria, HIV treatment coverage increased significantly from 50% in 2015 to 90% in 2021 (Geng et al., 2011), which indicates the need for innovations that will improve retention in care; and innovations in the form of ancillary services are likely to yield sustained impact. Initiating many people on treatment without optimal retention may be more dangerous than not initiating them. This is because poor retention will facilitate resistance to available antiretrovirals thereby spreading resistant HIV strains that may be difficult to treat (Geng et al., 2011).

METHODOLOGY

Literature Search Strategy

The review is aimed at providing an overview of scientific evidence of how ancillary services have been used in enhancing retention in HIV care as well as how such services are prioritized and allocated in maximizing retention in HIV care. To identify the significance of ancillary services in HIV care retention, a scoping review of published works in the last two decades following the JBI (Joanna Briggs Institute) guidelines that included components of Population, Intervention, Comparison, Outcome and Study design (PICO) was undertaken. As scoping reviews are an invaluable form of evidence synthesis that addresses a particular research question, the focus of this review, therefore, is to gather available evidence on the significance of ancillary services in HIV care retention, and to identify appropriate ways and means through which these services are prioritized and appropriated for maximum public health impact essential to informing policy, practice, and research.

The review followed a five-step procedure that involved articulating a research question, identifying relevant studies, selecting studies, charting the data, and summarizing the findings. The review was guided by the question: *How can ancillary services can be used to enhance retention in HIV care and how should they be prioritized and allocated to maximize impact?*

The literature search was conducted using PubMed/MEDLINE, Google Scholar, Science Direct and Academia. Search terms included “Ancillary services and HIV care retention” OR “Mental health services and HIV care retention” OR “Substance abuse services and HIV care retention” OR “Childcare services and HIV care retention” OR “Home visit and HIV retention” OR “nutrition support and HIV retention” OR psychosocial support and HIV retention” OR support group and HIV retention” necessary to identifying research articles and policy documents on the significance of ancillary services provision in HIV care retention. Additionally, the reference lists of reviewed publications were checked for other relevant reports and papers.

Therefore, in this study we reviewed the impact of mental health services, substance abuse services, childcare services, nutritional support services, psychosocial supports services, economic empowerment support services in HIV care retention as they are strengths-based

case management services that encourage clients to recognize and use their own internal abilities to access resources and solve problems which have offered strong evidence for retention in care (Higa et al., 2012).

Selection Criteria

Taking into cognizance the dearth of literature on the roles and or significance of ancillary services provision in HIV care retention, the review included studies applying a wide range of research designs. Both quantitative and qualitative research papers on the selected topic were included as varied perspectives on a similar topic are somewhat augmentative. Only papers that were published in the English language, published in the last 2 decades across the globe were included in this study.

The review prioritized a broad perspective when identifying how ancillary services can be used to enhance retention in HIV care. For inclusion, the studies had to comprise (1) definitive HIV ancillary service provision among HIV patients (childcare services, mental health, and substance abuse treatment programs, transportation, nutritional support etc), (2) with defined goal of improving retention in HIV care and (3) the service(s) fulfilled these goals in an organized manner that showed improved retention in care of HIV patients, additionally all studies that reported any type of outcome measure related to HIV care retention were included. These broad criteria were chosen to capture all available evidence on the roles of ancillary services in HIV care retention.

Thus, ancillary service provisions that lacked a clear HIV care retention component were excluded from this study.

Study Selection

According to the JBI guidelines, the review first excluded all duplicates from 22 selected records. Following this, a review of the titles of the identified research papers and reports (19 titles on ancillary services and HIV care retention) was carried out, and the differences were resolved. Of the remaining articles and reports (19 abstracts), the abstracts were assessed. In the final step, full-length papers (15 papers) were included according to the criteria of content (providing relevant information on the provision of ancillary services and how such services are provided and retention in HIV care (appropriateness of study design, data collection methods, sampling strategy, and analytic approach as well as a sufficient description of the context according with the methodological requirements of a scoping review as specified by Peters et al. (2020)). This resulted in 15 full-text articles describing how ancillary services are provided and the impact of such service provision on HIV care retention, as shown in Figure 1

ANALYSIS

A thematic content analysis was conducted to concisely summarize how ancillary services are provided for retention in HIV care and how such services are prioritized and allocated for maximum public health impact, as shown in Table 1.

Identification of studies via databases and other methods

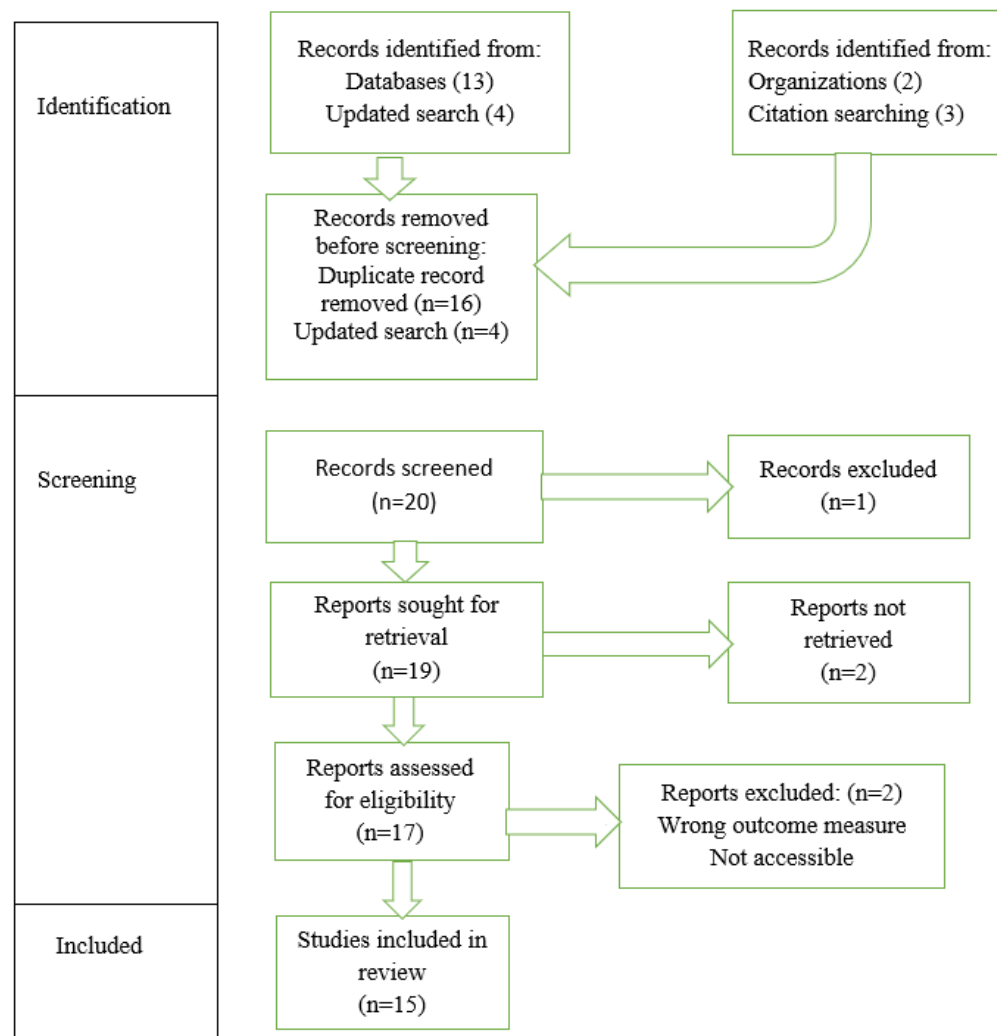


Fig 1: Flow chart of the study selection process.

RESULT

Table 1: Related studies on how ancillary services can be used to enhance retention in care

Year	Authors	Location	Method	Population	Intervention/role	Outcomes and Key Findings
2009	Chin <i>et al</i>	USA	A thorough, longitudinal study examining the outcomes and impact of 23 HIV-related social service programs in the New York metropolitan area over an extended period using Multivariate linear	HIV-positive participants.	Assessing how HIV social services influence key milestones, such as quitting substance use, starting treatment (ART), and securing stable housing, and exploring how achieving these milestones affects overall well-being and quality of life (QOL).	Individuals who made positive changes in their lives, such as stopping drug use, starting antiretroviral therapy (ART), or securing stable housing, experienced significant improvements in their quality of life (QOL). This highlights the critical role of achieving these intermediate goals in enhancing QOL. Moreover, it underscores the vital importance of social services in supporting these achievements, demonstrating that they are essential components of HIV care,

			regression modelling.			rather than just supplementary. The findings also validate the effectiveness of QOL measures, showing that they respond predictably to changes in intermediate outcomes.
2015	Yehia et al.	USA	Semi structured interview using a modified grounded theory approach.	HIV-infected individuals	Qualitative description of barriers and facilitators associated with retention in HIV care.	The main obstacles to staying in HIV care were depression, poor health, and conflicting life priorities. Additionally, those who didn't stay in care often cited costly and unreliable transportation, stigma, and inadequate insurance as barriers. On the other hand, individuals who stayed in care commonly mentioned two key factors that helped them: social support and patient-friendly clinic services, such as transportation assistance, convenient scheduling, and positive relationships with healthcare providers. To improve retention in care, the study suggests developing care models that address social and financial challenges, integrate mental health and substance abuse treatment, and offer patient-friendly services.
2016	DeGroote et al	USA	Face-to-face or telephone interviews during June 2013– May 2015 according to the self-identified needs and concerns expressed by individuals who participated in the MMP survey	Men who have sex with men (MSM) receiving outpatient HIV medical care during 2013–2015.	Identifying the unaddressed needs for additional support services among MSM who are already accessing HIV medical care on an outpatient basis between 2013–2015.	The greatest unmet needs for individuals living with HIV were for non-HIV related medical services, particularly dental and eye care. Additionally, many required support services like food, transportation, and housing to maintain their HIV treatment and care. These unmet needs were most pronounced among young, black, and Latino men who have sex with men (MSM). To address this, health departments, community organizations, and healthcare providers should work together to increase access to these essential services, especially for young, black, and Latino MSM, by raising awareness and providing guidance on how to access them.
2016	Aliyu et al.	Nigeria	Parallel cluster-randomized control trial	HIV-infected women (and their infants) presenting for ANC or	Clinic pairs were randomly assigned to intervention or standard care (control). Standard	Mothers in the intervention group were more likely to initiate ART. Mother and infant pairs in the intervention group were likely to be retained in

				delivery who had unknown HIV status at presentation; history of antiretroviral prophylaxis or treatment, but not receiving these at presentation; or known HIV status but had never received treatment	of care include health information, opt-out HIV testing, infant feeding counseling, referral for CD4 cell counts and treatment, home-based services, antiretroviral prophylaxis, and early infant diagnosis. The intervention package added task shifting, point-of-care CD4 testing, integrated mother and infant service provision, and male partner and community engagement.	care at 6 weeks and 12 weeks postpartum.
2017	Sam-Agudu <i>et al</i>	Nigeria	A prospective cohort study	HIV-positive mothers and exposed infant pairs (MIPs)	Comparing the rate of retention-in-care among PMTCT clients who are supported by formally-trained supervised mentor mothers versus clients who receive standard-of-care, informal peer support.	Exposure to mentor mother support was associated with higher odds of timely early infant diagnosis presentation among infant diagnosis presentation among infants, compared with routine peer support.
2018	Saag <i>et al.</i>	USA	Retrospective analysis	PLWH initiating outpatient HIV health care at a university-affiliated HIV clinic	Association between mental health (MH) service utilization and retention in HIV care	Average linkage contacts ranged from 0 □ 10 for the first six months (M □ /2.43, SD □ /2.09). Average counseling contacts for the first six months ranged from 0 □ 43 (M □ /6.44, SD □ /7.78). Ancillary service z-scores ranged from □ /1.80 □ 8.32 (M □ /0, SD □ /1.93). The distribution of gap scores for the second six months (outcome) indicated that 32% made appointments in each quarter and an additional 45% were seen at least once in the six-month window. There was a trend for older youth. Average linkage contacts ranged from 0 □ 10 for the first six months (M □

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						in care longer. Therefore, to reach the US goal of keeping 90% of PLWH in care, healthcare providers should consider offering mental health services as part of a comprehensive approach to improve retention, especially for those newly entering care.
2018	Hartzler <i>et al</i>	USA	Longitudinal observation of HIV+ adults link to care	HIV+ adults linked to care at seven sites	Utilizing a large, multiregional Center for AIDS Research Network of Integrated Clinical Systems (CNICS) cohort to examine influence of SUDs on two-year care retention at seven HIV care sites	Findings demonstrate substance-specific effects of marijuana use disorder (UD) associated with lower retention and age-modification of each effect on care discontinuity, with substance use disorders (SUDs) serving as a risk factor among 18–29-year-olds and protective factor among 60+ year-olds. The study concluded that expanded therapy application in HIV settings to promote greater care continuity among SUD patients appears entirely appropriate in addition to case management as form of health service intervention that facilitate compliance with HIV treatment tasks (i.e., consistent clinic attendance, antiretroviral medication adherence, use of strategies to reduce transmission risk) that promote care continuity. Thus, the current study findings suggest that, even in well-resourced HIV care settings, there remains room to improve care continuity—particularly among young adults with an SUD. This may occur via implementation of empirically supported behavior therapies, case management, or a blending of the two.
2018	Ike <i>et al</i>	Nigeria	Retrospective Study	Men who have Sex with Men attending a Community Health Centre, Yaba Lagos, Nigeria	Testing/care/treatment	The study revealed that the majority of the participants (83%) were retained in HIV care. Most of the respondents (85%) with age bracket of ≤ 25 years were retained in care. All the respondents with Master level of education (100%) were retained in care. Half of the participants , approximately 50% and 30% of the respondents attributed distance and full-time job

						respectively as major barriers for not being retained in care. Around 43% and 22.5% of the respondents testified that friendly clinic services and secured environment respectively accounted for their retention in care.
2019	Umeokonkwo <i>et al</i>	Nigeria	Comparative cross-sectional study	Adult patients receiving antiretroviral treatment in secondary level hospitals, Anambra state	Retention was assessed using 3-month visit consistency method and the proportion of patients who had good retention and those who had good adherence were compared across public and private hospitals using chi-square test.	Retention in care was high and comparable among the different hospital types and HIV disclosure status was an important factor relating to retention in care. However, in the public hospital, only disclosure determined good retention, whereas spending on transport and residing in a rural area determined poor retention.
2019	Monroe <i>et al</i>	USA	A randomized controlled trial (RCT)	people with HIV (PWH) with no prior HIV care	A study using a randomized controlled trial design to test an intervention aimed at improving retention in HIV care, which gathered data on the ancillary services required by participants and identified which of these needs were currently going unfulfilled.	The study revealed that 69% of participants had at least one reported need, with no correlation found between need status and initial CD4 counts. Psychiatric health issues and substance use were strong predictors of need, while Black individuals faced higher odds of basic resource needs like housing instability and transportation limitations. The findings highlight the prevalence of ancillary service needs among those newly entering HIV care, with vulnerable subgroups being disproportionately affected.
2021	Muwanguzi <i>et al</i>	Uganda	A cross-sectional study	Youths aged 15–24 years who were receiving care in a HIV clinic and who had been in care for at least 1 year before the study	Chi-square test and multivariable logistic regression analysis were used to determine the factors associated with retention in HIV care	Youths aged 15–24 years are still poorly retained in HIV care in rural southwestern Uganda despite huge efforts. Being male, having perinatally acquired HIV and married or in a relationship are associated with retention in HIV care. The study recommends interventions which focus on improving social and emotional (component of mental health care) support through the creation and enhancement of peer support projects and friendly services.
2021	Offie <i>et al</i>	Nigeria	Exploratory qualitative research	Men having sex with men	Descriptive data analysis of facilitators and barriers to	The study identified friendly clinic service, having positive relationships with clinic staff, friendly and secured

					retention in HIV care among MSM	environment as the major facilitators to retention in HIV care while implicating distance and self-denial as major barriers to retention in HIV care among respondents.
2022	Voisin <i>et al</i>	Chicago, USA	Qualitative analysis (Semi-structured, in-depth interviews)	Young Black Men who have Sex with Men	Assessment of the impact of COVID-19 on their HIV care and ancillary service access.	The study found both positive and negative impacts of COVID-19 on HIV care. On the negative side, the pandemic caused disruptions in accessing HIV care and support services, and increased concerns about police and racial tensions in Chicago after George Floyd's murder, which may have affected retention in care. On the positive side, the pandemic allowed for more reflection and social connection, leading to improved self-care and retention in care, and some enhancements in medical care receipt. Overall, while COVID-19 reduced in-person HIV care visits, the shift to telemedicine enabled more efficient use of online services for administrative tasks, allowing for more meaningful in-person interactions.
2022	Dasgupta <i>et al</i>	USA	Using CDC Medical Monitoring Project, data were collected through interview and medical record abstraction of adults with HIV in the United State from 2015–2018.	U.S. adults with HIV	A national surveillance system that collects annual, cross-sectional data on social determinants of health and behavioral and clinical characteristics among adults with HIV in the United States.	More than half of adults with HIV (54.3%) had at least one unmet need for additional support services, such as mental health care or substance abuse treatment. Significant proportions also had unmet needs for HIV support services (18.3%), non-HIV medical care (30.8%), and basic necessities like food and housing (28.2%). To address these disparities and improve outcomes, the study suggests expanding access to comprehensive care, fostering collaborations between healthcare providers, and tailoring services to individual needs.
2024	Verinumbe <i>et al</i>	Nigeria	A secondary analysis of the PLHIV stigma index 2.0	Nigerian adults with HIV	A socio-behavioural survey implemented by PLHIV led-organizations to assess the relationship between group membership and internalized stigma	PLHIV engaged in HIV peer support groups were less likely to report both low/moderate and high levels of internalized stigma compared to those not engaged. Stigma mitigation strategies to increase peer support present a critical tool in decreasing sustained HIV

						treatment gaps among PLHIV in Nigeria
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THEMATIC ANALYSIS OF RESEARCH FINDINGS

The included articles in the final analysis reported on the recommendations and means for providing ancillary services for HIV care retention around the globe, with almost all the papers within the last fifteen years. All the included studies highlighted the different approaches to how ancillary services can be provided to enhance care retention in HIV management. Five studies suggested that combining ancillary services (such as mental health support, substance abuse treatment, and housing assistance) with evidence-based HIV interventions (like antiretroviral therapy and HIV testing) into a comprehensive care package would be an effective approach. (Chin et al., 2009; Saag et al., 2018; Monroe et al., 2019; Muwanguzi et al., 2021; Dasgupta et al., 2022). More so, studies suggested that there should be expanded therapy application in HIV settings to promote greater care continuity among SUD patients appears entirely appropriate in addition to case management as a form of health service intervention that facilitates compliance with HIV treatment tasks (i.e., consistent clinic attendance, antiretroviral medication adherence, use of strategies to reduce transmission risk and stigma) that promote care continuity (Hartzler et al., 2018; Ike et al., 2018; Verinumbe et al., 2024). Few studies also indicated the importance of awareness in promoting access to ancillary services, especially among young HIV patients (DeGroote et al., 2016; Voisin, 2021). Finally, the summarized result also referenced care models where facilitators to engagement in HIV included the presence of social support, patient-friendly clinic services (transportation, co-location of services, scheduling/reminders), and positive relationships with providers and clinic staff (Yahie et al., 2015; Aliyu et al., 2016; Sam-Agudu et al., 2017; Ike et al., 2018; Omeokonkwo et al., 2019; Offie et al., 2021; Voisin et al., 2021; Verinumbe et al., 2024).

Integration of Ancillary Service Provision with HIV Evidenced-Based Intervention as a Care Bundle

Five out of the total of 10 selected studies that assessed ancillary services (e.g., childcare services, mental health, and substance abuse treatment programs) provision in enhancing retention in HIV care and how they are prioritized and allocated for such an achievement emphasized the integration of ancillary service provision with HIV evidenced-based intervention as a care bundle (Chin et al., 2009; Saag et al., 2018; Monroe et al., 2019; Muwanguzi et al., 2021; Dasgupta et al., 2022). Studies by Saag et al. (2018) and Monroe et al. (2019) showed that ancillary service utilization visits were associated with increased retention in care such that even in the absence of documented MH and SUD comorbidities, improved retention in care was observed with increasing ancillary service utilization, especially MH. Hence, to achieve the strategy goal of retention in care for PLWH, ancillary service utilization should be considered along with other evidence-based interventions, especially for PLWH newly engaged in care. In this way, ancillary service provision is a means of achieving intermediate outcomes in improving QOL, as social services are not merely ancillary in HIV care but rather crucial for achieving both intermediate outcomes and the final outcome of improved QOL (Chin et al., 2009).

Awareness of HIV Ancillary Services for Improved HIV Care Utilization

Three of the articles on the provision of ancillary services for retention in HIV care showed awareness of ancillary service provision improving access and utilization, thereby facilitating

retention in HIV care (DeGroot et al., 2018; Umeokonkwo et al., 2019; Viosin et al., 2022). DeGroot et al (2018) and Umeokonkwo *et al.* (2019) showed that dental care, eye or vision care, food or nutrition, transportation assistance, and shelter or housing that help persons living with HIV stay in medical care and adhere to HIV treatment were the most prevalent unmet needs for PLWH partly due to lack of awareness of the availability and provision of these services as the continuum of HIV care. By improving awareness of ancillary services for their utilization along with HIV care, the mixed disruptions in linkage to and receipt of HIV care can be avoided, and the ability to reflect and socially connect, contributing to heightened self-care and retention in care among PLWH can be facilitated (Voisin et al., 2022).

Advocating Care Models Where Facilitators to Engagement in HIV Care Include the Presence of Social Support, Patient-Friendly Clinic Services

An important focus in the provision of ancillary services for retention in HIV care is the advocacy for a patient-centered care model that prioritizes convenient and supportive clinic services, such as easy transportation, one-stop shopping for multiple services, flexible scheduling, and reminders, as well as fostering positive and empathetic relationships with healthcare providers and clinic staff (Yahie et al., 2015; Aliyu et al., 2016; Ike et al., 2018; Omeokonkwo et al., 2019; Voisin et al., 2021; Verinumbe et al., 2024). As shown by Yahie et al (2015), the study compared patients who faced transportation challenges to those who didn't and found that transportation issues were a significant obstacle for some patients. In contrast, those who remained in care reported minimal problems getting to appointments and services. They concluded that patients who didn't stay in care encountered more obstacles, especially social and structural ones, than those who remained. Therefore, creating care models that tackle social and financial challenges, incorporate mental health and substance abuse treatment, and provide patient-friendly services is crucial for keeping individuals with HIV engaged in care.

From the foregoing, therefore, ancillary services – childcare services (on-site childcare, parenting support), mental health, transportation, social support, and substance abuse treatment programs – are noted to improve retention in HIV care by addressing the social, emotional, and physical needs of people living with HIV, making it possible for them to stay engaged in care.

DISCUSSION

Studies have shown that adhering to HIV care and treatment plans not only improves individual health but also reduces the likelihood of transmitting the virus to others through viral suppression. The significant focus to achieving this is determining how ancillary services can be used to enhance retention in HIV care and how they should be prioritized and allocated to maximize public health impact. Different approaches included integration of ancillary service provision with HIV evidenced-based intervention as a care bundle, improved awareness of HIV ancillary services for improved HIV care utilization, advocating care models where facilitators to engagement in HIV care include the presence of social support, patient-friendly clinic services and expanded therapy application in HIV settings to promote greater care continuity among PLWH especially those with co-existing SUD.

The prioritization and allocation of ancillary staff play a crucial role in improving outcomes in HIV/AIDS care because ancillary staff, including counselors, social workers and community

health workers, are essential in providing comprehensive care to individuals living with HIV/AIDS (Dasgupta, et al., 2022).

Counselors provide essential support and guidance to individuals living with HIV/AIDS, helping them cope with the emotional and psychological aspects of the disease (Bemelmans, et al., 2016). While the social workers address the social determinants of health such as housing problems, substance use, domestic violence, etc. (Natale, et al., 2025), community health workers create awareness about HIV/AIDS by providing health education and linking individuals to care services (Busza, et al., 2018).

The allocation of ancillary staff to HIV/AIDS clinics ensures that patients receive comprehensive care, including ART, counseling, and support services (Dasgupta, et al., 2022). Beyond the clinic, allocating staff to community-based organizations enables them to provide outreach services, promote HIV/AIDS awareness, and link individuals to care services (Sabin, et al., 2019). Additionally, allocating ancillary staff to rural and underserved areas helps to create awareness about HIV testing and linkage to care for HIV/AIDS care services.

90% of the papers selected for this study were published within the last 10 years, underscoring the increasing relevance of and attention to this topic in HIV care research. All selected studies reported the importance of ancillary service provision for an integrated approach in HIV care that foster care retention. First of all, several studies emphasized the integration of ancillary service provision with HIV evidenced-based intervention as a care bundle (Chin et al., 2009; Saag et al., 2018; Monroe et al., 2019; Muwanguzi et al., 2021; Dasgupta et al., 2022). In addition, improved awareness of HIV ancillary services is shown to facilitate HIV care utilization, an intermediate outcome for retention in care ((DeGroote et al., 2018; Viosin et al., 2022). Thirdly, several studies demonstrated that care models where facilitators of engagement in HIV care include the presence of social support and patient-friendly clinic services are significant approaches for HIV care retention (Yahie et al., 2015; Ike et al., 2018; Umeokonkwo et al., 2019; Voisin et al., 2021).

This aligns with earlier findings of Naar-King et al (2007) in a prospective study that tested the connection between receiving additional support services (such as case management, advocacy, and counseling) over a period of six months and retention of youth in HIV care in the subsequent six months using medical records of youth (16-25 years) enrolled in a comprehensive HIV care program at a university-affiliated medical center in USA where the youth program provided medical and support services all in one place. The study found that when young people used more support services (like counseling) in the first six months, they were more likely to stay on track with their care in the next six months. Counseling was the most important factor. This suggests that continuing to invest in support services is crucial for helping young people with HIV stay in care. Research has also shown that recognizing service integration as integrating clinical services with ancillary services through multidisciplinary professionals present a one-stop-shopping approach is most beneficial for people living with HIV/AIDS especially for among high-risk populations (; McNeil et al., 2014; Sprague & Simon, 2014; Holtzman et al., 2015; Altice et al., 2011; Curry & Ham, 2010)

Based on the above discussions, remaining in care is a vital part of HIV treatment and is necessary for managing the infection successfully. This review adds to the existing literature by

crystallizing evidence and ways in which ancillary services can be used to enhance retention in HIV care and how they should be prioritized and allocated to maximize public health.

CONCLUSION

This scoping review builds on prior research, which describes approaches in which ancillary services can be used to enhance retention in HIV care and how they should be prioritized and allocated to maximize public health. Through the recognition of the critical roles that counselors, social workers and community health workers play in providing care and support to individuals living with HIV/AIDS, healthcare providers can ensure that patients receive the comprehensive care they need to manage their condition effectively. The strategic allocation of ancillary staff to key areas, including HIV/AIDS clinics, community-based organizations, and rural and underserved areas, is also crucial in addressing the shortage of healthcare providers and ensuring that individuals in these areas have access to HIV/AIDS care services. By prioritizing and allocating ancillary staff effectively, healthcare providers can improve outcomes in HIV/AIDS care and support individuals living with HIV/AIDS in achieving optimal health and well-being.

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