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Social Determinants of Health and Unmet Needs for Services Among Young Adults With HIV: Medical Monitoring Project, 2018–2021

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Abstract

Background: Persons aged 13–24 years are a priority population in the National HIV/AIDS Strategy. Young adults with HIV have poorer health outcomes—including not being retained in care, antiretroviral nonadherence, and not being virally suppressed—than other persons with HIV.

Setting: Centers for Disease Control and Prevention’s Medical Monitoring Project data collected June 2018 through May 2022.

Methods: We compared demographic characteristics, social determinants of health, and mental health between persons aged 18–24 years with HIV versus persons aged ≥25 years with HIV. Among those aged 18–24 years, we analyzed total and unmet needs for ancillary services, defined as those that support care engagement, viral suppression, and overall health and well-being among people with HIV.

Results: Persons aged 18–24 years were more likely to have a household income, 100% of the federal poverty level (48% vs. 39%), and experience unstable housing or homelessness (37% vs. 18%) or hunger/food insecurity (29% vs. 18%) than those aged ≥25 years. Persons aged 18–24 years had higher median HIV stigma scores (40 vs. 29) and were more likely to experience symptoms of generalized anxiety disorder (21% vs. 15%) than those aged ≥25 years. Of persons aged 18–24 years, 96% had a need for ≥1 ancillary service, of whom 56% had ≥1 unmet need; unmet needs were highest for subsistence services (53%) and non-HIV medical services (41%).

Conclusions: Addressing unmet needs for subsistence and non-HIV medical services could help reduce disparities in social determinants of health and mental health that drive inequities in health outcomes among persons with HIV aged 18–24 years.

Keywords

HIV; ancillary services; unmet need; young adults

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INTRODUCTION

The National HIV/AIDS Strategy (NHAS) was developed to focus efforts and resources to End the HIV Epidemic in the United States and ensure that people with HIV (PWH) live long and healthy lives.¹ As a part of those efforts, NHAS recognizes the role that social determinants of health (SDOH)² and mental health^{3,4} play in driving health inequities and decreasing quality of life (QoL) among PWH, particularly among certain populations disproportionately affected by HIV, including youth aged 13–24 years.^{5–7} In CDC National HIV Surveillance System (NHSS) data, persons aged 13–24 years accounted for 19% or 7099 of the 37,981 new HIV diagnoses in 2022.⁸ Recent data from the CDC’s Medical Monitoring Project (MMP), an HIV surveillance system that provides nationally representative estimates, show that compared with persons aged ≥30 years with HIV, persons aged 18–29 years may have lower levels of antiretroviral therapy (ART) prescription and sustained viral suppression.⁹ NHAS prioritizes monitoring HIV stigma and indicators of QoL—including related to physical health, mental or emotional health, and subsistence factors—to ensure that PWH have good health and well-being. These indicators are monitored using data from the CDC’s MMP, which provides estimates of demographic characteristics, SDOH, clinical outcomes, mental health, and barriers to care and viral suppression among PWH.^{6,9}

Ancillary services for PWH are defined as those that comprehensively support their HIV care engagement, viral suppression, and overall health and well-being, and can address certain barriers to care, including related to SDOH.^{9–12} Ancillary services can include HIV support services (eg, HIV case management), non-HIV medical services (eg, dental care, mental health care), and subsistence services (eg, food or shelter assistance).

Sufficient access to ancillary services is essential for ensuring that persons with HIV can maintain good health and well-being. Many PWH have unmet needs for ancillary services and these unmet needs are associated with adverse outcomes.¹² Examining needs for ancillary services—including unmet needs—could help in prioritizing resources and improve QoL for PWH aged 18–24 years. Furthermore, because of their substantial role in driving inequities in health outcomes among PWH, understanding disparities in SDOH and mental health outcomes experienced by persons aged 18–24 years could help direct public health action to improve health and well-being in this important population. Addressing barriers to HIV care engagement and viral suppression, including related to SDOH, could be instrumental in directing national and local efforts to improve outcomes among young adults with HIV. Recent nationally representative estimates of these disparities are needed but are lacking. In this analysis, we assessed differences in demographic characteristics, SDOH, and mental health outcomes between PWH younger (aged 18–24 years) versus older (aged ≥25 years) and examined the prevalence of unmet needs for ancillary services among PWH aged 18–24 years.

METHODS

MMP is a population-based surveillance system that produces annual, cross-sectional, nationally representative estimates of demographic characteristics, SDOH, barriers to care, viral suppression, and clinical outcomes among persons with diagnosed HIV in the United States. Detailed MMP methods have been previously published.¹³ In brief, during the 2018–2021 data cycles, MMP used a 2-stage complex sample survey design. During the first stage, 16 states and 1 territory were sampled from all US states, the District of Columbia, and Puerto Rico with probabilities proportional to size based on AIDS prevalence at the end of 2002. The selected jurisdictions included California (including the separately funded jurisdictions of Los Angeles County and San Francisco), Delaware, Florida, Georgia, Illinois (including Chicago), Indiana, Michigan, Mississippi, New Jersey, New York (including New York City), North Carolina, Oregon, Pennsylvania (including Philadelphia), Puerto Rico, Texas (including Houston), Virginia, and Washington. During the second stage, simple random samples of persons aged ≥ 18 years with diagnosed HIV were selected from each jurisdiction from NHSS, a census of persons with diagnosed HIV in the United States. The response rate for jurisdictions was 100% and ranged from 40% to 45% by cycle year at the respondent level.

Data were collected during June of each cycle year through May of the following year through phone or face-to-face interviews, and clinical data from medical records were abstracted at the most frequent source of HIV care reported by respondents during the previous 2 years.⁹ This analysis only included data from the interview. MMP is conducted as part of routine HIV surveillance and is, therefore, considered non-research. Participating jurisdictions obtained IRB approval as needed. All respondents provided informed consent.

Measures

Comparison of Demographic Characteristics, SDOH, and Mental Health Between Persons with HIV Aged 18–24 Years Versus ≥ 25 Years: For this analysis we dichotomized age into 2 groups: PWH aged 18–24 years and PWH ≥ 25 years at the time of the interview. Demographic characteristics included in this study were race/ethnicity [American Indian/Alaska Native, Asian, Non-Hispanic Black/African American, Hispanic/Latino (Hispanic/Latino could be of any race), Native Hawaiian/Other Pacific Islander, Non-Hispanic White, Multiracial], current gender identity (cisgender male, cisgender female, transgender), and sexual behavior or orientation [people were classified as men who have sex with men (MSM), women who only have sex with men (WSM), and men who only have sex with women (MSW) based on sexual behavior among the sexually active and reported sexual orientation among the nonsexually active; all people not classified as MSM, WSM, or MSW were grouped into the “other” category]. We included select SDOH² related to economic stability (unstable housing or homelessness [yes/no: homelessness was defined as living on the street, in a shelter, in a single room occupancy hotel, or in a car; unstably housed was defined as moving in with others because of financial issues, moving > 2 times, or being evicted], hunger or food insecurity [yes/no: defined as going without food because of lack of money during the past 12 months], current employment status [employed, unemployed or unable to work, student, retired], and household income with

respect to the US Department of Health and Human Services poverty guidelines¹⁴ [$<100\%$ of the federal poverty level (FPL), $100\%–138\%$ FPL, $139\%–399\%$ FPL, $\geq 400\%$ FPL], educational attainment [less than high school, high school or equivalent, greater than high school], health-related factors {health care coverage [any private, public only, excluding Ryan White HIV/AIDS program (RWHAP) or AIDS Drug Assistance Program (ADAP) only, no coverage or Ryan White/ADAP only]}, self-rated health (poor or fair vs. good, very good, excellent), and disability [yes/no: defined as responding yes to any of the following conditions—deaf or difficulty hearing, blind or serious difficulty seeing, physical/mental/emotional condition, difficulty walking or climbing stairs, difficulty dressing or bathing, or difficulty running errands alone], and social and community context [recent incarceration (yes/no: defined as incarcerated >24 hours in the past 12 months), physical violence by an intimate partner or forced sex (yes/no: defined as being slapped, punched, shoved, kicked, choked or otherwise physically hurt or being threatened or forced to have vaginal, anal, or oral sex when they did not want to), and HIV stigma]. HIV stigma was assessed using a 10-item scale ranging from 0 (no stigma) to 100 (high stigma) that measures 4 dimensions of HIV stigma: personalized stigma during the past 12 months, current disclosure concerns, current negative self-image, and current perceived public attitudes about persons with HIV.¹⁵ All measures were based on the past 12 months unless otherwise noted. Data on self-reported mental health outcomes were also included. Symptoms of major or other depression (major or other depression, no depression) during the past 2 weeks were assessed using the Patient Health Questionnaire-8.¹⁶ Symptoms of generalized anxiety disorder (moderate/severe anxiety symptoms, mild/no anxiety) during the past 2 weeks were assessed using the Generalized Anxiety Disorder Scale-7.¹⁷

Needs for Ancillary Services Among Persons Aged 18–24 Years With

Diagnosed HIV: Respondents were asked about their needs for a variety of HIV ancillary services, including HIV support services (ie, case management services, medication through ADAP, ART adherence support services, HIV peer group support, and patient navigation services), non-HIV medical care services (ie, dental care, mental health services, drug or alcohol counseling or treatment, and domestic violence services), and subsistence services [ie, Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) services, transportation assistance, shelter or housing assistance, and meal or food services]. For each service, respondents were first asked whether they received the service during the past 12 months; among those who did not receive it, respondents were asked whether they needed the service during the past 12 months. Total need was defined as receiving, or needing but not receiving, a particular service. Unmet need was defined as needing, but not receiving, a particular service among those persons who reported needing the service (ie, responding “no” to unmet need among those responding “yes” to total need).

Statistical Analysis

Data were weighted based on probabilities of selection, adjusted for person nonresponse, and poststratified to population totals based on data from NHSS by age, race/ethnicity, and sex.¹³ We assessed the distribution of demographic characteristics and SDOH among persons aged 18–24 years versus persons aged ≥ 25 years. Weighted percentages and 95%

confidence intervals (CIs) were reported for all variables except HIV stigma, which we present using median scores and 95% CIs. For categorical variables, prevalence ratios (PRs) with predicted marginal means and 95% CIs were calculated to compare differences between persons aged 18–24 years with diagnosed HIV and those ≥25 years with diagnosed HIV ($P < 0.05$). Nonoverlapping CIs were used to assess difference in median HIV stigma scores between groups. Finally, among persons aged 18–24 years with diagnosed HIV, we assessed the percentage of persons who experienced any need for ancillary services; of those with a need for a service, unmet needs were assessed. Data were analyzed using SAS 9.4 (SAS Institute Inc, Cary, NC) and SAS-callable SUDAAN, version 11.0.3 (RTI International) for all analyses.

RESULTS

Comparison of Demographic Characteristics, SDOH, and Mental Health Between Persons With HIV Aged 18–24 Years Versus ≥25 Years

Persons with HIV aged 18–24 years were more likely than those aged ≥25 years to identify as being non-Hispanic Black/African American (58% vs. 41%; PR 1.41, 95% CI: 1.26 to 1.58). Persons aged 18–24 years were more likely than those ≥25 years to report male-to-male sexual contact or identify as a man who has sex with men (63% vs. 51%; PR 1.23, 95% CI: 1.09 to 1.40) or other sexual behavior or orientation (8% vs. 5%; PR 1.70, 95% CI: 1.02 to 2.85) (Table 1).

Compared with PWH aged ≥25 years, PWH aged 18–24 years were more likely to experience unstable housing or homelessness (37% vs. 18%; PR 2.00, 95% CI: 1.69 to 2.37), hunger/food insecurity (29% vs. 18%; PR 1.64, 95% CI: 1.34 to 2.01), have a household income <100% of the FPL (48% vs. 39%; PR 1.21, 95% CI: 1.03 to 1.41), or have only a high school education or equivalent (40% vs. 26%; PR 1.56, 95% CI: 1.30 to 1.87); they were less likely to be unemployed or unable to work (31% vs. 41%; PR 0.75, 95% CI: 0.61 to 0.93). Compared with PWH aged ≥25 years, those aged 18–24 years were more likely to be uninsured or receive RWHAP assistance only (17% vs. 10%; PR 1.70, 95% CI: 1.23 to 2.34). However, they were more likely to report good, very good, or excellent self-rated health (87% vs. 70%; PR 1.24, 95% CI: 1.18 to 1.31) than persons aged ≥25 years. Compared with those aged ≥25 years, persons aged 18–24 years were more likely to have been recently incarcerated (8% vs. 4%; PR 2.19, 95% CI: 1.43 to 3.36) or have experienced physical violence from an intimate partner or forced sex in the past 12 months (14% vs. 5%; PR 2.80, 95% CI: 1.92 to 4.07). In addition, the median HIV stigma score was higher among persons aged 18–24 years than those aged ≥25 years (40 vs. 29). Persons with HIV aged 18–24 years were more likely than those aged ≥25 years to experience symptoms of moderate or severe generalized anxiety disorder in the past 2 weeks (21% vs. 15%; PR 1.40, 95% CI: 1.04 to 1.86) (Table 1).

Needs for Ancillary Services Among Persons Aged 18–24 years With Diagnosed HIV

Nearly all (96%; 95% CI: 92.4% to 99.3%) PWH aged 18–24 years had a need for ≥1 ancillary service, and more than three-quarters (77%; 95% CI: 70.4% to 82.5%) had needs for ≥3 ancillary services during the past 12 months (not in tables or figures).

Overall, 85% needed ≥ 1 HIV support service, of whom 15% had an unmet need; 86% needed ≥ 1 non-HIV medical care service, of whom 41% had an unmet need; 64% needed ≥ 1 subsistence service, of whom 53% had an unmet need (Figure). The greatest total need was for dental care (74%) and HIV case management services (63%; Table 2). The greatest unmet needs for non-HIV medical care services were for dental care (37%) and mental health services (26%; Table 3). Unmet needs for all subsistence services were high: 55% for shelter or housing services, 43% for meal or food services, 37% for SNAP/WIC services, and 37% for transportation assistance.

DISCUSSION

We demonstrated that young adults with diagnosed HIV experience numerous challenges related to socioeconomic disadvantage and showed that, compared with persons ≥ 25 years, persons aged 18–24 years were more likely to experience challenges related to both socioeconomic disadvantage and social community context, including unstable housing or homelessness, hunger/food insecurity, poverty, lack of insurance, and HIV stigma. In addition, PWH aged 18–24 years were more likely to report symptoms of anxiety than those aged ≥ 25 years. PWH aged 18–24 years also had high needs for ancillary services, many of which were unmet—particularly related to subsistence, dental care, and mental health. More than three-quarters of PWH aged 18–24 years had ≥ 3 unmet needs; more unmet needs can be associated with HIV clinical outcomes demonstrating the compound impact of these factors on health outcomes.¹⁸ Evidence shows that cumulative exposure to socioeconomic disadvantage can also affect HIV care outcomes in a dose–response fashion, exemplifying the importance of comprehensive screening of subsistence factors within the medical system.⁵ In addition, poor subsistence may be detrimental to physical health,¹⁹ demonstrating the importance of addressing these needs. Cholli et al¹⁹ found that lower “good or better” self-rated health was associated with poor subsistence, including unstable housing or homelessness and hunger or food insecurity, than persons with HIV who self-rated their health higher. Adequate access to ancillary services may help ensure people are able to address their needs related to subsistence. However, barriers to accessing these services are important to ascertain and should be assessed wherever possible. Although we did not assess reasons for unmet needs among PWH aged 18–24 years in this analysis, previously published MMP data among persons who inject drugs¹² and persons experiencing homelessness²⁰ have found lack of knowledge of services was a substantial barrier to subsistence services. For instance, screening for housing, food, and transportation needs could be incorporated into comprehensive physical and mental health examinations. Recognizing the needs for subsistence services can address barriers to care, improve overall QoL, and well-being for the priority population of PWH aged 18–24 years.

In this analysis, 17% of young adults with HIV had no insurance coverage or were receiving RWHAP assistance. More than half reported needing medicine through ADAP. RWHAP provides comprehensive services for low-income persons with HIV for medical care, medications, and ancillary or support services.²¹ Although more young adults have health insurance coverage after the Affordable Care Act was established in 2010,²² some persons aged 18–24 with HIV remain uninsured or underinsured.²³

Food insecurity, another consequence of low income, is associated with poor ART adherence and poor HIV outcomes among persons with HIV.^{24,25} Reeder and colleagues²⁵ found more than half of young adults with HIV surveyed experienced unmet subsistence needs, including food insecurity, housing instability, and difficulty finding places to wash and use the bathroom. Moreover, these authors found food insecurity was associated with lower ART adherence among these youth. In our survey, approximately one-third of persons with HIV aged 18–24 years reported hunger or food insecurity and 43% of those with a need for meal or food services reported an unmet need for these services. Although entitlement programs such as SNAP and WIC provide subsidies for some food items, approximately 2 in 5 adults with HIV aged 18–24 years who reported a need for SNAP or WIC had an unmet need for these services. Better understanding of barriers, such as lack of awareness, bureaucratic logistics, transportation, or other deterrents to eligibility and access to SNAP and WIC, particularly among PWH aged 18–24 years, is needed to alleviate this unmet need. Lack of adequate food and nourishment can adversely affect HIV outcomes, QoL, and overall mental and physical health for persons with HIV.

Persons aged 18–24 comprise 7.3% of the population of people experiencing homelessness.²⁶ Young adults are often undercounted in estimates of persons experiencing homelessness because they may stay in locations that do not meet US Department of Housing and Urban Development definitions of homelessness or because they are staying with friends or family (“couch surfing”) or are otherwise unstably housed.²⁶ Unstable housing, independent of homelessness, can lead to poor HIV outcomes.²⁷ Previous MMP analysis found that people with diagnosed HIV who experienced homelessness or unstable housing were less likely to be retained in care, less likely to be ART dose adherent, and less likely to be virally suppressed than people who were stably housed.²⁷ We found more than one-third of persons with HIV aged 18–24 years had experienced unstable housing or homelessness in the past year. Furthermore, of those who reported a need for shelter or housing services, more than half had an unmet need. Unmet needs for housing among young adults could be ameliorated with increased supportive housing services.²⁸ Young adults are often in the position of needing housing services but lacking the resources to achieve stable housing primarily because of financial considerations. Moreover, young adults in need of housing services may be unaccompanied for the first time, without financial or social support, and unaware of policies, procedures, or requirements to attain stable housing. Programs such as Housing Opportunities for Persons with AIDS, a federal program to provide housing services to low-income PWH, could be accessed.²⁹ Although Housing Opportunities for Persons with AIDS funds are often limited in certain geographic locations, combined with RWHAP funding³⁰ and other sources of housing support, such as Medicaid programs that address health-related social needs,³¹ they can provide housing assistance, when available in local areas.²⁰ Braiding these funding sources among various federal and community partners ensures a holistic approach to addressing the needs of young adults with HIV related to subsistence and overall health and well-being.

In our study, median stigma score was greater among persons aged 18–24 years with HIV than among persons aged ≥25 years with HIV. Other authors have examined multiple, complex levels of stigma among young adults with HIV that affect their personal, interpersonal, clinic, and community interactions.³² These authors found that stigma affected

barriers to engagement in care such as delays in seeking care, isolation, fear of disclosure of HIV status, discrimination from family and friends, as well as negative experiences with clinic staff. Programs that provide antidiscrimination training for health care and other service providers can raise awareness and decrease HIV stigma.^{33,34} Furthermore, directing interventions toward the various types of stigma (eg, enacted, anticipated, and internalized) experienced by persons aged 18–24 years with HIV will facilitate ending stigma among this population.³⁵ NHAS goals include eliminating stigma and discrimination to reduce inequalities and improve QoL for PWH.¹ Stigma can affect access to services resulting in greater needs.³⁶ Programs such as RWHAP can provide integrated services for young adults to help alleviate barriers to care, improve QoL and clinical outcomes, and decrease HIV transmission.³⁷

PWH aged 18–24 years were more likely to experience symptoms of generalized anxiety disorder than those aged ≥25 years. Experiences of poor mental health have also been associated with poor ART adherence and low viral suppression.^{3,4,38} Bucek et al's³⁸ prospective cohort study among perinatally HIV-infected adolescents and young adults found psychiatric disorders to be associated with missed ART doses and viral loads >1000 copies/mL at least 12 months after baseline interview. In our analysis, >40% of young adults needed mental health services and one-quarter expressed an unmet need for mental health services among those with a need, emphasizing the need for understanding of barriers to care and provision of comprehensive care services through programs, such as RWHAP, that use a whole person approach.³⁹ Annual mental health screenings are recommended for PWH⁴⁰ and these can be integrated with HIV and other medical care to improve engagement in care and support overall health and QoL.

These findings support recommendations such as those identified in the Society for Adolescent Health and Medicine position paper that includes 3 recommendations for improving HIV care outcomes among adolescents and young adults: provision of differentiated and integrated HIV services (eg, mental health or reproductive health services), structural changes (eg, early disclosure to young adolescents with perinatally acquired HIV, economic support, transition to adult care preparedness, elimination of legal barriers to HIV testing and treatment for minors, and elimination of discriminatory laws against individuals living with HIV and individuals who are sexually or gender diverse), and inclusion of young adults “in the conceptualization, design, implementation, monitoring, and evaluation of HIV services designed for them”.⁴¹ Interventions designed for young adults have been shown to improve HIV engagement in care and HIV outcomes. For example, mobile health (mHealth) interventions such as E-VOLUTION⁴² can provide reminders through text messages and engagement with case managers to facilitate linkage to care. In addition, our results emphasize the need for collaboration between HIV providers and community-based organizations who provide subsistence services, such as housing, food, and transportation services to address the unmet needs of persons aged 18–24 years with HIV and to improve HIV outcomes.

Limitations

This analysis is subject to limitations. For instance, it is possible that some PWH aged 18–24 years faced barriers severe enough to exclude participation in MMP, thus limiting generalizability of findings to all PWH aged 18–24 years. The median age of 51 years in the ≥ 25 -year-old age group reflects the aging cohort of people with diagnosed HIV. Dichotomizing the data by age may have masked some differences by age; however, MMP data have been analyzed by age group in previous publications.^{6,9} Furthermore, some estimates for unmet needs for ancillary services were unstable and needed to be suppressed; however, unstable estimates for these measures indicated that the prevalence of unmet needs for these measures may have been low. The data are self-reported and, thus, are subject to recall and social desirability bias. Data were cross-sectional, and associations do not imply causality. MMP response rates were suboptimal, and the response rate in MMP dropped from 45% in the 2019 cycle to 40% in the 2020 cycle, due, in part, to the COVID-19 pandemic. However, data were adjusted for nonresponse and poststratified to totals from the NHSS by age, race/ethnicity, and sex at birth to reduce nonresponse bias.⁴³

CONCLUSIONS

Compared with PWH aged ≥ 25 years, persons aged 18–24 years were more likely to experience challenges with SDOH related to socioeconomic disadvantage, health insurance, and social and community context, and symptoms of generalized anxiety disorder. Persons with HIV aged 18–24 years had high levels of unmet needs related to subsistence, dental care, and mental health services, which—if addressed—could help alleviate disparities related to SDOH and mental health conditions that may be barriers to care and viral suppression, QoL, and overall health and well-being. Persons with HIV aged 18–24 years face challenges unique to their age group and unmet needs for many services including non-HIV medical services and subsistence services that exacerbate these challenges. Addressing unmet needs of young adults with HIV could improve their QoL and overall physical and mental health and is essential for achieving NHAS goals for this priority population.

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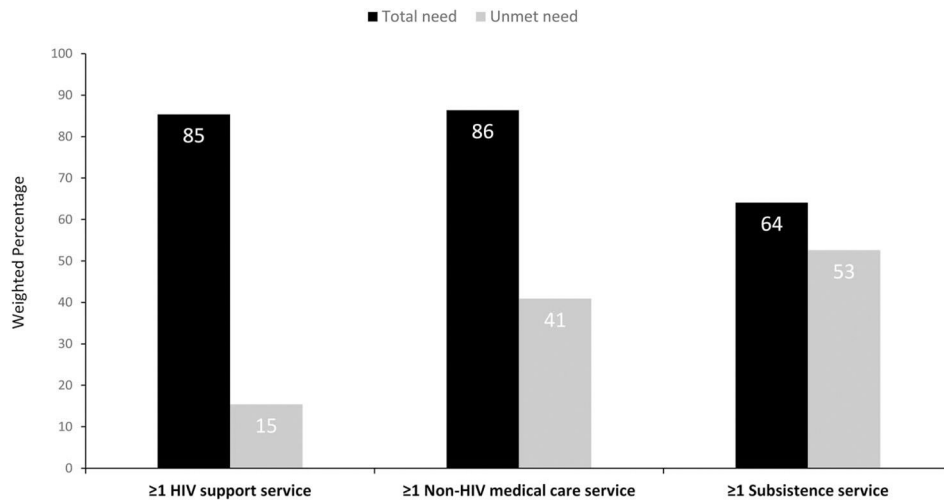


FIGURE 1.

Total and unmet needs for ancillary services related to HIV support, non-HIV medical care, and subsistence services among adults with diagnosed HIV aged 18–24 years—Medical Monitoring Project, United States, 2018–2021 data cycles. HIV support services include case management services, medication through ADAP, ART adherence support services, HIV peer group support, patient navigation services, non-HIV medical care services include dental care, mental health services, drug or alcohol counseling or treatment, domestic violence services, and subsistence services include SNAP or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) services, transportation assistance, meal or food services, shelter or housing assistance. Total need was defined as receiving, or needing but not receiving, a particular service. Unmet need was defined as needing, but not receiving, a particular service among those persons who reported needing the service.

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TABLE 1.

Differences in Demographic Characteristics, SDOH, and Mental Health Outcomes Between Adults With Diagnosed HIV Aged 18–24 years vs. ≥25 Years
—Medical Monitoring Project, United States, 2018–2021 Data Cycles

	Adults with HIV Aged 18–24 yrs			Adults with HIV Aged ≥25 yrs			Measures of Association	
	n ^a	Col % (95% CI) ^b	n ^a	Col % (95% CI) ^b	Prevalence Ratio	P		
Total (row %)	303	2.1 (1.7 to 2.4)	15,552	97.9 (97.6 to 98.3)				
Demographic characteristics								
Age (median)	303	22.3 (22.0 to 22.5)	15,552	50.7 (50.3 to 51.1)				
Race/ethnicity								
American Indian/Alaska Native	—	—	85	0.7 (0.4 to 0.9)	—	—		
Asian	—	—	161	1.2 (1.0 to 1.4)	—	—		
Non-Hispanic Black/African American	178	58.0 (50.3 to 65.7)	6350	41.1 (36.6 to 45.5)	1.41 (1.26 to 1.58)	<0.001		
Hispanic/Latino ^c	78	25.1 (18.0 to 32.2)	3604	23.1 (19.3 to 26.9)	1.09 (0.85 to 1.38)	0.516		
Native Hawaiian/other Pacific Islander	—	—	28	0.2 (0.1 to 0.3)	—	—		
Non-Hispanic White	26	9.2 (5.7 to 12.7)	4592	29.1 (26.3 to 31.9)	0.32 (0.22 to 0.46)	<0.001		
Multiracial ^d	—	—	730	4.7 (4.0 to 5.3)	—	—		
Current gender identity								
Cisgender men ^e	229	72.7 (66.1 to 79.4)	11,327	74.8 (73.4 to 76.3)	0.97 (0.88 to 1.07)	0.547		
Cisgender women ^e	57	21.1 (14.9 to 27.3)	3893	23.2 (21.8 to 24.6)	0.91 (0.67 to 1.24)	0.550		
Transgender ^e	—	—	319	2.0 (1.8 to 2.2)	—	—		
Sexual behavior or orientation ^f								
Men who have sex with men	195	62.7 (55.7 to 69.8)	7753	50.8 (48.9 to 52.8)	1.23 (1.09 to 1.40)	0.003		
Men who have sex with women	31	8.0 (4.9 to 11.1)	3271	21.8 (20.8 to 22.8)	0.37 (0.25 to 0.54)	<0.001		
Women who have sex with men	57	21.0 (14.8 to 27.2)	3782	22.5 (21.1 to 23.9)	0.93 (0.68 to 1.27)	0.653		
Other	20	8.3 (4.2 to 12.3)	745	4.9 (4.4 to 5.3)	1.70 (1.02 to 2.85)	0.047		
Social determinants of health								
Economic stability								
Unstable housing or homelessness, past 12 mo ^g								
Yes	114	36.7 (30.4 to 42.9)	2828	18.3 (17.5 to 19.2)	2.00 (1.69 to 2.37)	<0.001		
No	189	63.3 (57.1 to 69.6)	12,657	81.7 (80.8 to 82.5)	0.78 (0.70 to 0.85)	<0.001		

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	Adults with HIV Aged 18–24 yrs		Adults with HIV Aged ≥25 yrs		Measures of Association	
	n ^a	Col % (95% CI) ^b	n ^a	Col % (95% CI) ^b	Prevalence Ratio	P
Hunger or food insecurity, past 12 mo ^b						
Yes	96	28.9 (23.2 to 34.6)	2686	17.6 (16.9 to 18.4)	1.64 (1.34 to 2.01)	<0.001
No	206	71.1 (65.4 to 76.8)	12,800	82.4 (81.6 to 83.1)	0.86 (0.80 to 0.94)	<0.001
Employment status, time of interview						
Employed ⁱ	163	53.6 (46.9 to 60.3)	7304	48.3 (47.4 to 49.3)	1.11 (0.98 to 1.25)	0.119
Unemployed or unable to work	96	30.6 (24.4 to 36.8)	6337	40.6 (39.3 to 41.9)	0.75 (0.61 to 0.93)	0.004
Student	43	15.8 (10.2 to 21.4)	144	1.0 (0.8 to 1.2)	16.06 (10.73 to 24.03)	<0.001
Retired	0	—	1682	10.1 (9.3 to 10.8)	—	—
Household income with respect to federal poverty guidelines, past 12 mo ^j						
<100% FPL	121	47.5 (40.1 to 54.8)	5685	39.3 (37.5 to 41.2)	1.21 (1.03 to 1.41)	0.029
100%–138% FPL	23	9.9 (4.9 to 14.9)	1680	12.2 (11.5 to 12.9)	0.81 (0.49 to 1.35)	0.413
139%–399% FPL	89	36.4 (29.6 to 43.3)	4829	34.9 (33.7 to 36.1)	1.04 (0.86 to 1.27)	0.678
≥400% FPL	—	—	1957	13.5 (12.5 to 14.6)	—	—
Education						
Educational attainment						
<High school	34	11.6 (7.3 to 15.9)	2502	15.7 (14.7 to 16.7)	0.74 (0.51 to 1.07)	0.102
High school or equivalent	126	40.4 (33.1 to 47.8)	4003	25.9 (24.9 to 26.8)	1.56 (1.30 to 1.87)	<0.001
>High school	143	48.0 (41.2 to 54.8)	8984	58.4 (57.0 to 59.8)	0.82 (0.71 to 0.95)	0.003
Health-related factors						
Health insurance or coverage, past 12 mo						
Any private insurance	98	34.1 (26.7 to 41.5)	5727	37.5 (36.1 to 38.9)	0.91 (0.74 to 1.12)	0.368
Public insurance only, excluding RWHP/ADAP only	150	48.5 (39.7 to 57.3)	8259	52.3 (50.2 to 54.3)	0.93 (0.79 to 1.10)	0.361
No coverage or RWHP/ADAP only	49	17.4 (12.2 to 22.6)	1329	10.2 (8.8 to 11.6)	1.70 (1.23 to 2.34)	0.002
Good or better self-rated health, time of interview ^k						
Yes	260	87.2 (82.8 to 91.6)	10,731	70.2 (69.4 to 71.1)	1.24 (1.18 to 1.31)	<0.001
No	42	12.8 (8.4 to 17.2)	4733	29.8 (28.9 to 30.6)	0.43 (0.31 to 0.60)	<0.001
Any disability ^l						
Yes	85	27.8 (21.7 to 34.0)	6708	42.0 (40.8 to 43.2)	0.66 (0.53 to 0.83)	<0.001
No	218	72.2 (66.0 to 78.3)	8773	58.0 (56.8 to 59.2)	1.24 (1.14 to 1.36)	<0.001

	Adults with HIV Aged 18–24 yrs		Adults with HIV Aged ≥25 yrs		Measures of Association	
	n ^a	Col % (95% CI) ^b	n ^a	Col % (95% CI) ^b	Prevalence Ratio	P
Social and community context						
Incarcerated, past 12 mo						
Yes	23	8.0 (4.5 to 11.5)	506	3.6 (3.2 to 4.1)	2.19 (1.43 to 3.36)	<0.001
No	280	92.0 (88.5 to 95.5)	14,985	96.4 (95.9 to 96.8)	0.95 (0.92 to 0.99)	<0.001
Physical violence by an intimate partner or forced sex, lifetime ^m						
Yes	91	33.5 (27.0 to 39.9)	4967	32.9 (31.4 to 34.5)	1.02 (0.83 to 1.24)	0.872
No	205	66.5 (60.1 to 73.0)	10,246	67.1 (65.5 to 68.6)	0.99 (0.90 to 1.10)	0.872
Physical violence by an intimate partner or forced sex, past 12 mo ^m						
Yes	33	13.7 (8.7 to 18.7)	705	4.9 (4.4 to 5.3)	2.80 (1.92 to 4.07)	<0.001
No	261	86.3 (81.3 to 91.3)	14,445	95.1 (94.7 to 95.6)	0.91 (0.86 to 0.96)	<0.001
Median stigma score, past 12 mo ⁿ	293	40.0 (35.2 to 44.7)	14,665	29.4 (28.9 to 30.0)		
Mental health						
Symptoms of depression, past 2 wks ^o						
Major or other depression	53	16.7 (11.8 to 21.6)	2457	15.7 (14.9 to 16.5)	1.06 (0.79 to 1.43)	0.679
No depression	247	83.3 (78.4 to 88.2)	12,834	84.3 (83.5 to 85.1)	0.99 (0.93 to 1.05)	0.679
Symptoms of generalized anxiety disorder, past 2 wks ^p						
Moderate/severe anxiety	54	20.9 (15.1 to 26.6)	2293	15.0 (13.9 to 16.0)	1.40 (1.04 to 1.86)	0.029
Mild/no anxiety	247	79.1 (73.4 to 84.9)	13,043	85.0 (84.0 to 86.1)	0.93 (0.86 to 1.00)	0.029

Note: SDOH, social determinant of health; CI, confidence interval; RWHAP, Ryan White HIV/AIDS Program; ADAP, AIDS Drug Assistance Program; FPL, Federal Poverty Level; all variables were self-reported and measured over the past 12 months, unless otherwise noted.

Estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30 may be unstable and therefore are suppressed. Any estimates for measures of association and/or statistical testing derived from one or more suppressed estimates may also be unstable.

^aNumbers are unweighted.

^bPercentages and corresponding CIs are weighted percentages.

^cHispanics or Latinos can be of any race. Participants were classified in only 1 race/ethnicity category.

^dIncludes those identifying as multiple races.

^ePersons were classified as cisgender if sex at birth and gender reported by the person were the same. Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose “transgender” in response to the question about self-identified gender.

^f Persons were classified as MSM, WSM, and MSW based on sexual behavior among sexually active persons and reported sexual orientation among nonsexually active persons; all people not classified as MSM, WSM, or MSW were grouped into the “other” category.

^g Unstable housing or homelessness is defined as experiencing unstable housing (ie, moving in with others because of financial issues, moving 2 or more times, or being evicted) or homelessness (ie, living on the street, in a shelter, in a single-room–occupancy hotel, or in a car) at any time during the past 12 months.

^h Hunger/food insecurity is defined as going without food because of lack of money during the past 12 months.

ⁱ Employed included employed for wages, self-employed, or homemaker.

^j US Department of Health and Human Services poverty guidelines were used, based on people’s annual household income from all sources during the past 12 months. For more information: <https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines/frequently-asked-questions-related-poverty-guidelines-poverty>.

^k Good or better self-rated health defined as rating one’s health as good, very good, or excellent (as opposed to poor or fair) at the time of interview.

^l Disability includes physical, mental, and emotional disabilities.

^m Defined as being slapped, punched, shoved, kicked, choked or otherwise physically hurt or being threatened with harm or forced to have vaginal, anal, or oral sex when they did not want to.

ⁿ Median HIV stigma score defined as the weighted median score on a 10-item scale ranging from 0 (no stigma) to 100 (high stigma) that measures 4 dimensions of HIV stigma: personalized stigma during the past 12 months, current disclosure concerns, current negative self-image, and current perceived public attitudes about people living with HIV, measured among persons aged ≥18 years with diagnosed HIV infection living in the United States and Puerto Rico. Nonoverlapping CIs were used to assess difference in median HIV stigma scores between groups.

^o Responses to the items on PHQ-8 were used to define “major depression” and “other depression” according to criteria from the DSM-IV. To meet the criteria for “major depression,” a respondent must have experienced 5 or more symptoms at least “more than half the days,” and 1 of the symptoms must be anhedonia or feelings of hopelessness. For “other depression,” a respondent must have experienced 2 to 4 symptoms at least “more than half the days,” and 1 of the symptoms must be anhedonia or feelings of hopelessness.

^p Responses to the GAD-7 were used to define “mild anxiety,” “moderate anxiety,” and “severe anxiety” according to criteria from the DSM-IV. “Severe anxiety” was defined as having a score of ≥15; “moderate anxiety” was defined as having a score of 10–14; and “mild anxiety” was defined as having a score of 5–9.

TABLE 2.

Total Need for Specific Ancillary Services Among Adults With Diagnosed HIV Aged 18–24 Years—Medical Monitoring Project, United States, 2018–2021 Data Cycles

	n*	Total Need	
		Col	% (95% CI) [†]
HIV support service			
HIV case management services			
Yes	194	63.2	(55.4 to 71.0)
No	100	36.8	(29.0 to 44.6)
Medicine through ADAP			
Yes	161	55.5	(47.9 to 63.1)
No	124	44.5	(36.9 to 52.1)
Professional help remembering to take HIV medicines on time or correctly (adherence support services)			
Yes	149	46.7	(40.2 to 53.2)
No	150	53.3	(46.8 to 59.8)
HIV peer group support			
Yes	62	20.1	(15.0 to 25.1)
No	235	79.9	(74.9 to 85.0)
Patient navigation services			
Yes	60	18.4	(13.5 to 23.2)
No	240	81.6	(76.8 to 86.5)
Non-HIV medical care services			
Dental care			
Yes	230	74.1	(68.1 to 80.2)
No	69	25.9	(19.8 to 31.9)
Mental health services			
Yes	125	41.6	(35.3 to 48.0)
No	173	58.4	(52.0 to 64.7)
Drug or alcohol counseling or treatment			
Yes	21	6.8	(3.3 to 10.4)
No	278	93.2	(89.6 to 96.7)

	Total Need	
	n [*]	Col % (95% CI) [†]
Domestic violence services		
Yes	—	—
No	291	97.4 (94.6 to 100.0)
Subsistence services		
SNAP or WIC		
Yes	149	49.5 (42.7 to 56.3)
No	150	50.5 (43.7 to 57.3)
Transportation assistance		
Yes	109	37.2 (30.8 to 43.6)
No	191	62.8 (56.4 to 69.2)
Shelter or housing services		
Yes	77	26.9 (19.9 to 33.9)
No	222	73.1 (66.1 to 80.1)
Meal or food services [‡]		
Yes	77	25.6 (18.7 to 32.4)
No	222	74.4 (67.6 to 81.3)

Note: CI, confidence interval; ADAP, AIDS Drug Assistance Program; SNAP, Supplemental Nutrition Assistance Program; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children; all variables were self-reported and measured over the past 12 months, unless otherwise noted. Estimates with a coefficient of variation ≥ 0.30 and those based on a denominator sample size <30 may be unstable and therefore are suppressed. Any estimates for measures of association and/or statistical testing derived from one or more suppressed estimates may also be unstable. Total need was defined as receiving, or needing but not receiving, a particular service.

^{*} Numbers are unweighted.

[†] Percentages and corresponding CIs are weighted percentages.

[‡] Includes services such as soup kitchens, food pantries, food banks, church dinners, or food delivery services.

TABLE 3.

Unmet Need for Specific Ancillary Services Among Adults With Diagnosed HIV Aged 18–24 Years—Medical Monitoring Project, United States, 2018–2021 Data Cycles

	n*	Unmet Need	
		Col	% (95% CI) [†]
HIV support service			
HIV case management services			
Yes	—	—	—
No	178	88.2	(81.3 to 95.2)
Medicine through ADAP			
Yes	—	—	—
No	152	92.4	(86.3 to 98.5)
Professional help remembering to take HIV medicines on time or correctly (adherence support services)			
Yes	—	—	—
No	146	98.3	(96.3 to 100.0)
HIV peer group support			
Yes	—	—	—
No	49	78.5	(65.6 to 91.3)
Patient navigation services			
Yes	—	—	—
No	53	88.3	(78.9 to 97.8)
Non-HIV medical care services			
Dental care			
Yes	82	36.9	(29.5 to 44.4)
No	148	63.1	(55.6 to 70.5)
Mental health services			
Yes	33	26.3	(17.1 to 35.5)
No	92	73.7	(64.5 to 82.9)
Drug or alcohol counseling or treatment			
Yes	—	—	—
No	—	—	—

	n [*]	Unmet Need	
		Col	% (95% CI) [†]
Domestic violence services			
Yes	—	—	—
No	—	—	—
Subsistence services			
SNAP or WIC			
Yes	57	37.3	(26.7 to 47.8)
No	92	62.7	(52.2 to 73.3)
Transportation assistance			
Yes	36	36.7	(25.1 to 48.3)
No	73	63.3	(51.7 to 74.9)
Shelter or housing services			
Yes	42	55.2	(40.9 to 69.4)
No	35	44.8	(30.6 to 59.1)
Meal or food services [‡]			
Yes	31	42.8	(28.7 to 57.0)
No	46	57.2	(43.0 to 71.3)

Note: CI, confidence interval; ADAP, AIDS Drug Assistance Program; SNAP, Supplemental Nutrition Assistance Program; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children; all variables were self-reported and measured over the past 12 months, unless otherwise noted. Estimates with a coefficient of variation ≥ 0.30 and those based on a denominator sample size <30 may be unstable and therefore are suppressed. Any estimates for measures of association and/or statistical testing derived from one or more suppressed estimates may also be unstable. Unmet need was defined as needing, but not receiving, a particular service among those persons who reported needing the service (i.e., responding 'no' to unmet need among those responding 'yes' to total need).

^{*} Numbers are unweighted.

[†] Percentages and corresponding CIs are weighted percentages.

[‡] Includes services such as soup kitchens, food pantries, food banks, church dinners, or food delivery services.