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Health-Related Social Needs Among Emergency Department Patients With HIV

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Abstract

Little research has examined the health-related social needs of emergency department (ED) patients who have HIV. We surveyed a random sample of public hospital ED patients and compared the social needs of patients with and without HIV. Social needs were high among all ED patients, but patients with HIV reported significantly higher levels of food insecurity (65.0%

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AUTHOR CONTRIBUTIONS

KMD, LG, DS, and EG conceived of the study. KMD led data collection for the study, with assistance from RG and IW. KMD conducted the analyses, with assistance from TM. EG interpreted the data and conducted the literature review. EC provided critical content. EG and KMD drafted the article. All authors provided critical feedback. All authors reviewed and approve of the final version.

vs. 50.3%, $p=0.01$) and homelessness or living doubled up (33.8% vs. 21.0%, $p<0.01$) than other patients. Our findings suggest the importance of assessing social needs in ED-based interventions for patients with HIV.

RESUMEN

Pocas investigaciones han examinado las necesidades sociales relacionadas con la salud de los pacientes del departamento de emergencias que tienen VIH. Encuestamos una muestra aleatoria de pacientes del departamento de emergencias de un hospital público y comparamos las necesidades sociales de los pacientes con y sin VIH. Las necesidades sociales eran altas entre todos los pacientes, pero los pacientes con VIH reportaron niveles significativamente más altos de inseguridad alimentaria (65.0% vs. 50.3%, $p = 0.01$) y falta de hogar o vivienda compartida (33.8% vs. 21.0%, $p < 0.01$) que otros pacientes. Nuestros resultados sugieren la importancia de evaluar las necesidades sociales en las intervenciones en departamentos de emergencias para pacientes con VIH.

Keywords

HIV; social determinants of health; homelessness; food insecurity; emergency care

INTRODUCTION

Emergency departments are sometimes considered the “safety net” of the U.S. healthcare system, serving a particularly marginalized patient population (1). National data show that ED use among people with HIV (PWH) is higher than that for the general population (2). PWH may have higher than average ED use because they are sicker than the general population or because they experience personal or structural barriers to other forms of healthcare (2, 3). The ED therefore represents an important site of healthcare access for PWH.

Prior literature has shown that both PWH and ED patients overall have high levels of social needs such as food insecurity and housing instability (1, 4, 5). For example, an estimated 12% of PWH in the U.S. have an unmet housing need (4). Simultaneously, there is an abundance of research demonstrating that social needs, and particularly housing-related needs, are associated with a multitude of negative outcomes for PWH including decreased antiretroviral therapy (ART) adherence, increased forward transmission, lack of sustained viral suppression, and more frequent ED use (4-6). For example, one study found that disparities in viral suppression by housing status were greater than those for gender, race, or ethnicity (7). Another study found that food insecurity was strongly associated with treatment non-adherence among PWH (6).

Despite the importance of considering social needs of PWH and the role of the ED as a common source of care for this population, there has been little research that has specifically examined social needs of ED patients living with HIV. Considering that ED patients and PWH both independently have high rates of social needs, the intersection of these two populations may be a particularly high-need group. Characterizing this specific patient

population may help inform future efforts to better serve them, as some aspects of current ED care for PWH have been shown to be suboptimal. For example, a systematic review examining linkage to care for newly diagnosed PWH in 31 ED-based HIV testing programs found an average success rate of 74% within 90 days, falling short of the goal of 85% set by the National HIV/AIDS Strategy (8). Additionally, two studies examining factors affecting linkage to care – one among PWH in both inpatient and outpatient settings and the other among ED patients who were screened for Hepatitis C virus (HCV) – found that unemployment, substance use, and homelessness were associated with a failure to link to care (9, 10). Although those with HCV represent a different population, there may be overlap among factors associated with successful initial connection to care between both populations. To our knowledge, there is limited other research examining the role of unmet patient social needs in initial linkage to care as well as longer term engagement or re-engagement in care for ED patients with HIV. As a first step toward future research in this area, we examined the prevalence of multiple types of social needs by HIV status in a randomly selected sample of ED patients.

METHODS

We conducted a survey of patients from an urban, public hospital in New York City from November 2016–September 2017, as part of a larger study which has been previously described (11). In brief, patients were eligible if they were 18 years old, spoke English or Spanish, could provide informed consent, were not in prison/police custody, and were medically and psychiatrically stable. Bilingual (English/Spanish) research assistants (RAs) used a random sampling scheme to approach patients. Survey questions were read aloud to study participants and responses were recorded using secure REDCap electronic data capture tools. Participants provided written informed consent and received a \$15 incentive. This paper is a secondary analysis of cross-sectional survey data.

Key Variables

Participants were asked whether a doctor or other healthcare professional had ever told them that they had HIV or AIDS. Participants were asked questions about experience of five social needs in the past 12 months: inability to meet essential expenses, food insecurity, cost barriers to medical care, employment issues, and broadly-defined homelessness. We defined homelessness broadly as answering affirmatively to a question about having stayed on the street, in a shelter, or doubled up with friends or family due to lack of another place to stay. Employment issues were assessed by asking participants if they had any issues or needed help with employment (getting a job or problems with their existing job). The other social needs measures are fully described in a prior publication (11). Given strong associations between housing status and HIV-related outcomes shown in prior research, we also examined additional measures of housing status, including: lifetime history of homelessness; where patients slept the last night (which we categorized as street/unsheltered or shelter [i.e., literal homelessness] vs. other); type of housing for the majority of nights in the past 12 months (from a choice of 10 categories); and self-judged housing stability in the past and next 2 months, using the Veterans Affairs Homeless Screening Clinical Reminder (HSCR).

Analysis

We present descriptive statistics for sociodemographic, health, and social needs variables. For bivariate analyses we used chi-squared (χ^2) tests of independence for categorical variables and t-tests for continuous variables to examine the association of patient HIV status with social needs and other characteristics. As an exploratory analysis, we used multivariable logistic regression to assess the independent association of HIV status with social needs, with methods described in more detail in Supplemental Table I. Analyses were conducted using SAS 9.2 (Cary, NC).

RESULTS

Of 6,097 ED participants approached, 52% were ineligible (n=2,816) or refused to complete eligibility screening questions (n=357). Common reasons for ineligibility included being medically unfit (n=858), too intoxicated to participate (n=496), unable to speak English/Spanish (n=480), or in prison/police custody (n=361). Of 2,924 eligible patients, 2,396 (81.9%) participated in the study. Duplicate records for participants who were identified as having participated more than once (n=84) and those without recorded HIV status (n=11) were removed, leaving a final analytic sample of n=2,301.

Eighty participants (3.5%) reported having HIV. Overall, 43.8% of participants were female. Approximately half (55.2%) identified as Hispanic/Latino, 23.1% as non-Hispanic Black, 12.2% as non-Hispanic White, and 9.5% as other. The mean age of those with and without HIV was 50.9 and 46.0 years, respectively. Participants with and without HIV also differed with respect to race/ethnicity, insurance status, employment status, and sexual orientation (Table I). Frequent ED use was common overall among participants both with and without HIV (42.5% vs. 30.5%, respectively). Participants with HIV reported significantly higher rates of past year physical violence (23.8% vs. 10.2%) and lifetime incarceration (45.0% vs. 23.5%) than those without. Participants overall reported high rates of depression, anxiety, lifetime mental illness diagnosis, and unhealthy alcohol or any drug use — with significantly higher rates among those who also reported having HIV (Table I).

Prevalence of social needs was high among all participants, but those with HIV were significantly more likely to report past 12 month food insecurity (65.0% vs. 50.3%) and homelessness or living doubled up (33.8% vs. 21.0%) than those without HIV. Participants with HIV also reported a higher mean number of social needs than those without (2.0 vs. 1.6). Detailed housing needs and concerns also differed in prevalence between participants with and without HIV. Participants with HIV reported significantly higher rates of lifetime homelessness (47.5% vs. 29.3%). However, rates of current homelessness (spending the last night on the street or in a shelter) and spending the majority of nights in the past 12 months on the street or in a shelter were similar for both groups (Table I). Participants with HIV reported significantly lower rates of living in stable housing in the past two months (68.6% vs. 79.1%) and significantly higher rates of concern about not having stable housing in the next two months (43.8% vs. 30.6%) compared to those who did not have HIV.

In multivariable models including potential confounders (e.g., substance use, mental illness, age), HIV was not independently associated with any of the five social needs

evaluated (inability to meet essential expenses, food insecurity, cost barriers to medical care, employment issues, and homelessness), although there was a trend toward a positive association with food insecurity (aOR 1.42, 95% CI 0.80-2.50) (Supplemental Table I).

DISCUSSION

We found that ED patients in general had high levels of social needs, and that PWH had significantly higher rates of food insecurity and housing related needs, as well as a greater number of social needs, than those without HIV. Our findings are largely consistent with prior literature conducted in non-ED populations demonstrating high prevalence of social needs among PWH (4, 5). While we did not find significant independent associations of HIV status with social needs in multivariable analyses—likely reflecting the complex interplay between social needs and the other non-social need factors that we adjusted for in our model—the bivariate findings of very high levels of social needs among ED patients, and particularly among patients with HIV, is still informative for clinical practice.

ED-based HIV testing programs have generally been found to effectively identify new cases of HIV and are widely utilized, but rates of initial linkage to care nationally have been below the goal of 85% set forth by the National HIV/AIDS Strategy and, additionally, ED patients with known HIV may not be fully engaged in care (3, 8). New York City was one of the first cities to reach the UNAIDS 90-90-90 goal of 90% of people with HIV being aware of their status, 90% of those being on treatment, and 90% of those being virally suppressed. Considering the known associations between social needs and poorer health outcomes, people in the remaining 10-10-10 are likely to have high levels of unmet social needs (4, 6-8). Our findings regarding social needs among PWH in the ED may help guide future research into social needs as a factor in successful linkage and ongoing engagement in HIV care and suggest that social needs variables should be included in future ED-based HIV research.

Consistent with prior studies, our results demonstrated that PWH had higher rates of food insecurity above the already high rates observed among ED patients overall (5). One systematic review and meta-analysis of 8 studies found that food insecurity was significantly associated with greater odds of having lower CD4 counts—an association that persisted after adjusting for recent homelessness, illicit drug use, and problem drinking (5). Another cross-sectional study in Atlanta, Georgia found that food insufficiency was one of the strongest factors associated with treatment non-adherence among PWH and that it was associated with other markers of disease severity, like decreased CD4 counts and increased viral load (6). Together, our findings and past research suggest that it may be particularly important to consider food insecurity when caring for ED patients with HIV.

We also observed that PWH had a significantly greater degree of self-reported housing instability compared to ED patient participants without HIV. This finding is consistent with prior research summarized in a systematic review by Aidala, et al. showing that 12% of PWH in the U.S. have an unmet housing need (4). Among our urban ED population, patients with HIV also had high rates of severe housing need—such as being currently homeless or living doubled up—which is consistent with prior research showing that ED

patients have high levels of homelessness and housing instability (1). Prior literature has shown that housing instability is associated with increased ED visits, increased overall healthcare utilization, decreased ART adherence, and more forward transmission among PWH (4). Conversely, provision of supportive housing for PWH has been found to result in significantly lower median viral loads (12). Considering that ED patients with HIV have particularly high levels of housing-related needs, the ED may represent an important site to identify high-risk patients and deliver housing-related interventions to improve outcomes for PWH. When examining detailed housing needs, we found that PWH had significantly higher prevalence of being homeless or doubled up within the past 12 months, but prevalence of more narrowly defined homelessness (living on the streets or in a shelter) was similar for both groups. This finding may reflect housing services available through HASA (HIV/AIDS Services Administration) specifically for people living with HIV in NYC, which can help people exit homelessness more quickly. Future research and interventions should include the “hidden homeless” group of people living doubled up with friends or family, in addition to literal sheltered and unsheltered homelessness.

The high rates of patient social needs observed in this study begs the question of what EDs can do to attempt to address their patients’ social needs. A growing “Social Emergency Medicine” movement has sparked interest in identifying ED patients’ social needs and providing referrals to community resources (13, 14). Some EDs have implemented “help desk” models in which trained volunteers assist patients with community resource referrals and public benefit applications (15). Others have embedded expert “housing navigators” in the ED to assist patients with homelessness and other complex housing needs. More research is needed on the effectiveness of such programs, including their effects on downstream health outcomes such as engagement in HIV care and CD4 counts.

Limitations

First, we conducted a cross-sectional study at a single public hospital in New York City that serves patients with high levels of social needs. Social needs may be less common in other settings, though prior research has demonstrated that patients from a wide range of EDs (e.g., suburban vs. urban) do have high prevalence of a variety of social needs (1). On the other hand, compared to other localities across the U.S., New York City has a relatively robust set of social services, particularly for PWH (who are eligible for additional social services through the HASA program). Therefore, it is possible that studies conducted in other localities would find higher levels of patient social needs. Second, our sample of PWH was relatively small, which may have limited our ability to detect statistically significant differences in multivariable analyses and to evaluate potential effect mediation or moderating factors. In addition, we did not conduct HIV testing and therefore relied solely on self-reported HIV status. As a result, it is possible that some patients in the “without HIV” group actually had undiagnosed HIV, though we expect that the absolute number of patients with undiagnosed HIV in our study was relatively small. Third, since this is a cross-sectional study, we cannot suggest causality for the relationships we have described. For example, higher rates of substance use and mental health issues observed among study participants with HIV could have contributed to the prevalence of social needs, independent of HIV itself. These relationships could be explored in future research.

CONCLUSIONS

We found that ED patients generally had high levels of social needs, and that PWH had significantly higher rates of some social needs compared to other patients, most notably housing instability and food insecurity. Needs of this population that can be used to inform future research, such as examining the role and impact of assessing and addressing patient social needs as part of the HIV care continuum for ED patients.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table I.

Emergency department participant characteristics by self-reported HIV status

	Without HIV ^a Percent n=2221	With HIV ^a Percent n=80	X ² or t value	p-value
Basic Characteristics				
Age, mean (SD)	46.0 (16.1)	50.9 (14.8)	-2.64	<.01
Female	44.3	29.5	6.71	<.01
Race/ethnicity			8.80	0.03
Hispanic/Latino	55.5	45.6		
Non-Hispanic Black	22.6	36.7		
Non-Hispanic White	12.2	11.4		
Other	9.6	6.3		
Insurance			36.39	<.01
Uninsured	27.6	6.3		
Medicaid and/or Medicare	50.9	85.0		
Private / Other	21.5	8.8		
Employment			21.31	<.01
Working full-time	46.5	23.8		
Unemployed	23.5	23.8		
Unable to work	19.2	33.8		
Retired	10.9	18.8		
Education			2.20	0.33
Less than high school diploma	36.4	30.0		
High school graduate/GED	25.8	32.5		
Some college or higher	37.8	37.5		
Sexual orientation			167.42	<.01
Gay or lesbian	2.1	26.6		
Straight/not gay	94.4	65.8		
Bisexual	3.0	6.3		
Something else	0.5	1.3		
Frequent ED use ^a	30.5	42.5	5.21	0.02
Physical violence, past 12 months ^b	10.2	23.8	15.05	<.01
Jail or prison, lifetime	23.5	45.0	19.37	<.01
Health				
Depression (PHQ-2) ^c	22.7	37.5	9.54	<.01
Anxiety (GAD-2) ^c	30.5	43.0	5.60	0.02
Mental illness diagnosis (lifetime) ^d	37.9	48.8	3.88	0.049
Unhealthy alcohol use, past 12 months ^e	32.1	43.8	4.80	0.03
Any drug use, past 12 months ^f	20.9	46.3	29.17	<.01
Social Needs, past 12 months				

	Without HIV ^a Percent n=2221	With HIV ^a Percent n=80	X ² or t value	p-value
Inability to meet essential expenses	40.7	45.6	0.75	0.39
Food insecurity	50.3	65.0	6.63	0.01
Cost barriers to medical care	24.5	27.5	0.38	0.54
Employment issues	23.7	27.9	0.73	0.39
Homeless/doubled up	21.0	33.8	7.47	<.01
Number of social needs			13.96	0.02
0	30.6	20.5		
1	22.5	14.1		
2	19.7	28.2		
3	14.1	24.4		
4	9.6	7.7		
5	3.5	5.1		
Average number of social needs, mean (SD)	1.6 (1.5)	2.0 (1.4)	-2.36	0.02
Detailed Housing Needs				
Last night in street or shelter	13.7	15.0	0.11	0.74
Place spent majority of nights, past 12 months			45.01	<.01
Own apartment – subsidized	18.9	30.0		
Own apartment – not subsidized	55.1	28.8		
Someone else’s apartment	10.8	17.5		
Hotel, SRO, or boarding home	0.5	5.0		
Halfway house, residential treatment	0.5	1.3		
Transitional housing	0.5	1.3		
Institution	1.4	2.5		
Homeless shelter	7.4	11.3		
Outdoors/street	4.3	2.5		
Detoxification	0.6	0		
Lived in stable housing, past 2 months ^g	79.1	68.6	4.92	0.03
Worried about stable housing, next 2 months ^h	30.6	43.8	6.24	0.01
Homeless in lifetime	29.3	47.5	12.19	<.01

Percentages among those who answered each question. Refusals/missing less than 2.3% for all questions.

^aFrequent ED use defined as 4 self-reported ED visits in the past year including the current visit.

^bResponded affirmatively to “In the past 12 months, was there ever a time when someone hit you with something, beat you up, burned or scalded you on purpose, or threatened or hurt you with a knife, gun, or some other weapon?”

^cPHQ-2 and GAD-2 are validated 2 item screeners for depression and anxiety, respectively.

^dSelf-report of diagnosis of at least 1 of 8 of the following mental health problems: depression, anxiety, panic attacks, schizophrenia, bipolar disorder, PTSD, borderline personality, or other mental health disorder.

^eUnhealthy alcohol use via single-item screener with a positive response recorded if a participant reports 1 episode of binge drinking (5 drinks in a day for men and 4 for women) in the past year (Smith PC, J Gen Intern Med, 2009).

^fAny drug use via single-item screener with a positive response recorded if a participant reported use of any drug (including marijuana or prescription medications for nonprescribed reasons) 1 time in the past year (Smith PC, J Gen Intern Med, 2010).

^gResponded affirmatively to “In the past two months have you been living in stable housing that you own, rent, or stay in as part of a household?” This question is a component of the Veterans Affairs (VA) Homeless Screening Clinical Reminder (HSCR) utilized within the VA healthcare system (Montgomery AE, Am J Public Health, 2013).

^hResponded affirmatively to “Are you worried or concerned that in the next two months you may NOT have stable housing that you own, rent, or stay in as part of a household?” This question is a component of the Veterans Affairs (VA) Homeless Screening Clinical Reminder (HSCR) utilized within the VA healthcare system (Montgomery AE, Am J Public Health, 2013).

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