Published in final edited form as:

AIDS Behav. 2018 July ; 22(Suppl 1): 65–69. doi:10.1007/s10461-018-2096-3.

HIV Risk and Gender in Jamaica's Homeless Population

Nicola Skyers¹, Sharlene Jarrett², Willi McFarland², Dahlia Cole³, and Uki Atkinson³

¹HIV/STI/Tb Unit, Ministry of Health, Jamaica

²University of California at San Francisco

³National Council on Drug Abuse, Jamaica

Abstract

Rigorous HIV-related data among Jamaica's homeless population is limited. A cross-sectional survey using a venue-based sampling approach was conducted to derive HIV prevalence and associated risk factors in 2015. Three hundred and twenty-three homeless persons from St. James, St. Ann, Kingston and St. Andrew (the main urban centers) participated. HIV prevalence was 13.8% with a difference in gender (males, 11.6%, females, 26.7%, $p=0.007$). Sex work, multiple partnerships, incarceration, non-injecting drug use, and female rape were common among the participants. Long term, multi-layered, HIV-specific, female-focused interventions are required for the population along with additional female-centric research.

Keywords

HIV; homeless; gender; Jamaica

Introduction

At the end of 2016, there were an estimated 30,000 people living with HIV (PLHIV) in Jamaica, with national prevalence at 1.7% (1). Groups with higher HIV prevalence in Jamaica include men who have sex with men (32.3%), transgender women (25.6%), and female sex workers (2.9%) (2–4). HIV is mainly sexually transmitted, with intravenous drug use reported by only 0.2% of newly diagnosed PLHIV in 2015; 95% of PLHIV reported heterosexual contact, and 9% of newly diagnosed males reported homosexual contact (4). Homeless persons may also be a population with higher prevalence of HIV. Previous programmatic data suggest high prevalence of HIV among homeless persons in Kingston, the capital city of Jamaica, and the neighboring urbanized parish of St. Andrew (12.9% in 2014) (4). Studies in Latin America and the Caribbean suggest that mental illness, crack and cocaine use, multiple partnerships, inadequate condom use, sexually transmitted infections

Correspondence to: Nicola Skyers, Ministry of Health, 10-16 Grenada Crescent, Kingston 5, Jamaica, 1-876-633-8214, 1876-633-6537, skyersn@moh.gov.jm.

Conflict of interest: None

Compliance with Ethical Standards:

Ethical Approval: The survey was implemented as part of public health surveillance through the course of HIV prevention program activities. Institutional Review Board review was not required.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

and sex work are common in the homeless population (5–8) and may give rise to high prevalence of HIV.

This study was conducted to better understand HIV disease burden among the homeless population in Jamaica by measuring HIV prevalence and identifying associated risk factors from a diverse sample. Reliable data on the prevalence of HIV and related behavioral, social and environmental risk factors are needed to effectively design HIV/AIDS policies and interventions for Jamaica's homeless population.

Methods

This analysis uses data from behavioral surveillance activities conducted by the National Council on Drug Abuse in March 2015. A cross-sectional survey was conducted among homeless persons in four (Kingston, St. Andrew, St. James and St. Ann) of the fourteen parishes in Jamaica over a three-week period.

Sampling design

The survey used a modified time-location sampling approach based on standard procedures for behavioral surveillance through intercepting participants at diverse venues (9). The sampling frame comprised a list of 117 sites that was created in a national “point-in-time” survey that enumerated persons residing in shelters and street sites in two cities and 102 towns in Jamaica (10). The enumeration identified 1,057 persons (913 males; 144 females) as affected by homelessness in two cities and 57 towns in Jamaica. Staff from the agencies responsible for implementing outreach activities among homeless populations reviewed the sites identified in the national survey and verified that they were currently active, provided classification (e.g., street, shelter, free food program), high ‘attendance’ periods (weekdays, weekends, night time, etc.), and estimated population size for each site at different time periods. We selected four parishes that included major urban areas and key tourism centers and represent 66.6% ($n=704$) of the homeless population identified in the enumeration activity.

Nineteen sites were randomly selected from the four parishes to achieve a target sample size of 420 homeless persons. The sample size was based on having a reasonable precision ($\pm 5\%$) for key indicators including HIV prevalence, assuming a refusal rate up to 15%. Participants received an incentive package of self-care items and non-perishable food.

Eligibility criteria and recruitment

Eligibility criteria were (1) presence at the site during data collection, (2) 18 years of age or older, and (3) night-time residence on street or in homeless shelter. Persons present at the sites were approached and screened by the interviewers. Data were collected in St. James and St. Ann parishes over three days and in Kingston and St. Andrew over five days. Each person was offered a rapid HIV test following national guidelines for outreach testing.

Statistical methods

Analyses were done on SPSS version 21. The Chi square or Fisher's Exact test was used for differences in proportions.

Ethical considerations

The survey was implemented by the National Council on Drug Abuse as part of public health surveillance through the course of HIV prevention program activities. Institutional Review Board review was not required. Respondents provided informed consent and no identifying information was included in the dataset used for analysis.

Results

A total of 566 homeless persons were counted and approached across the nineteen selected locations during survey implementation. Of these, 323 (278 males; 45 females) consented to participate in the study, which yielded a participation rate of 57.1%; the majority of participants were 40 years of age or older (76.2%) (Table I). Most participants were recruited from Kingston and St. Andrew (68.4%) and were from street sites (45.2%). Half (50.5%) had been homeless for six years or more and most were unemployed (90.1%). The majority (89.0%) were not educated beyond high school. Females were better educated than males; 49.1% of males were not educated beyond the primary/junior high level compared to 31.1% of females ($p=0.007$). Most participants were single (86.5%).

Among participants, 312 (96.6%) consented to HIV testing. HIV prevalence was 13.8%, with a higher percentage of females (26.7%) than males (11.6%) being HIV-positive ($p = 0.007$). Of the 43 participants (31 males, 12 females) who tested positive, 25 (58.1%) already knew they were HIV-infected. Of these 25 persons, 20 (80%) reported having ever been treated for HIV and 14 (56%) reported still being in care.

Males reported higher rates of multiple partnerships (27.3%) than females (17.8%) in the last three months ($p = 0.018$). There were no significant differences between males and females in trading sex for any reason (e.g., for cash or other needs). Among homeless males, 46.6% reported trading sex for cash and 4.2% of homeless males reported homosexual contact during these transactions. Fewer males, 12.4%, reported trading sex for drugs and 6.4% reported trading sex for food/shelter/other goods; 0.6% and 1.5% reported homosexual contact, respectively.

Reported condom use at last sex was not different between the sexes (66.0% among males and 73.8% among females, $p = 0.319$). More males (46.6%) reported previously diagnosed STIs than females (27.9%, $p = 0.004$) whereas more females (33.3%) reported instances of rape than males (7.0%, $p < 0.001$). Males were more likely to have spent more than a night in jail/prison than females (males 72.7%, females 45.5%, $p < 0.001$).

There were no significant gender differences in drug use, whether ever or in the last month. Marijuana was the most commonly used drug (65.9%), followed by crack (18.6%) and cocaine (7.4%). Only 1.9% reported using marijuana mixed with crack and 0.6% reported

heroin use. Alcohol and tobacco were the substances most commonly used by the participants at 64.4% and 68.1%, respectively.

With in the sample of homeless participants, other than female sex, there were no significant risk factors for HIV infection.

Discussion

Our study corroborates the high prevalence of HIV among the homeless population in urban Jamaica which was close to the previous estimate from programmatic data (12.9%, 2014). We also found females had significantly higher rates of infection than males. Over one in four homeless females were HIV-positive, and one in three homeless females had never tested for HIV. Although the number of females in the current survey was small, the HIV prevalence in this study suggests they may be among Jamaica's top three most affected populations, along with men who have sex with men and transgender women.

Our study also found high rates of HIV transmission risk factors, including sex work and multiple partnerships, in keeping with other publications regarding homeless populations in Latin America and the Caribbean (5–8). Social vulnerabilities, such as incarceration and (non-injecting) drug use, and rape among homeless females, were also high. The high HIV transmission risk factors, social vulnerabilities among Jamaica's homeless population, combined with the biological risk of female sex for HIV transmission, are likely contributors to the higher HIV burden observed among Jamaica's homeless females (11, 12).

Our study leaves room for more research into the drivers of HIV risk in Jamaica's homeless population. The findings suggest that there is the possibility of unidentified risks; the results could well be reflective of the complexities of HIV risk in this population and strengthen the argument for more research and targeted interventions.

A key potential limitation in this study was participation bias, due in part to the low participation rate (57%) of those intercepted at the venues. A strength over previous data is that venues were randomly sampled and participants systematically recruited, limiting both selection and participation biases. The sampling included access to the majority of the documented homeless population. Another limitation is the small number of females who participated in the study. Nonetheless, our recruitment reflects the male predominance in the homeless population. Moreover, the effect of HIV prevalence seen, despite the small sample size, suggests the likelihood of a large HIV prevalence among homeless females.

Conclusion

Our survey documents that Jamaica's homeless population is at high risk for HIV infection, with females at particularly higher risk compared to males. Interventions are needed for the entire population; however a more tailored approach is needed for females because of the higher HIV prevalence among them. A larger sample of homeless females needs to be studied to better define their HIV risk; a qualitative component would be beneficial in order to provide data about the meaning and context regarding gender and HIV risk in Jamaica's homeless population. A combination of HIV prevention interventions is required given the

biological and environmental dimensions of their risk. Long term, multi-layered, HIV-specific, gender-focused interventions have proven most effective (13, 14).

Acknowledgments

Funding: This study received support through the Global Fund for AIDS, Tuberculosis and Malaria (GFATM) to the Ministry of Health, Jamaica. The lead author (Nicola Skyers) received support from the University of California, San Francisco from the following grant from the U.S. National Institutes of Health (NIH): International Traineeships in AIDS Prevention Studies (ITAPS, R25MH064712). The content is solely the responsibility of the authors and does not necessarily represent the official views of the GFATM or NIH.

References

1. UNAIDS. HIV Estimates 2016 Jamaica. 2017.
2. Figueroa JP, Cooper CJ, Edwards JK, Byfield L, Eastman S, Hobbs MM, et al. Understanding the high prevalence of HIV and other sexually transmitted infections among socio-economically vulnerable men who have sex with men in Jamaica. *PloS one*. 2015;10(2):e0117686. [PubMed: 25659122]
3. Logie CH, Lacombe-Duncan A, Wang Y, Jones N, Levermore K, Neil A, et al. Prevalence and Correlates of HIV Infection and HIV Testing Among Transgender Women in Jamaica. *AIDS patient care and STDs*. 2016;30(9):416–24. [PubMed: 27610463]
4. Ministry of Health J. HIV Epidemiological Profile 2015, Facts and Figures. moh.gov.jm: MOH, Jamaica, Unit HST; 2015.
5. Barrow G, Clare-Pascoe N, Bahadur A, Atkinson U, Browne C, Clarke TR, et al. A review of the HIV-infected homeless sub-population at the Centre for HIV/AIDS Research, Education and Services, Department of Medicine, University Hospital of the West Indies. *The West Indian medical journal*. 2013;62(4):337–40. [PubMed: 24756595]
6. Day M, Devieux JG, Reid SD, Jones DJ, Meharris J, Malow RM. Risk behaviours and healthcare needs of homeless drug users in Saint Lucia and Trinidad. *The ABNF journal : official journal of the Association of Black Nursing Faculty in Higher Education, Inc*. 2004;15(6):121–6.
7. Grangeiro A, Holcman MM, Onaga ET, Alencar HD, Placco AL, Teixeira PR. [Prevalence and vulnerability of homeless people to HIV infection in Sao Paulo, Brazil]. *Revista de saude publica*. 2012;46(4):674–84. [PubMed: 22715004]
8. Reid SD. Drug use, sexual behaviour and HIV risk of the homeless in Port-of-Spain, Trinidad. *The West Indian medical journal*. 1999;48(2):57–60. [PubMed: 10492603]
9. UCSF. Sample protocol for an integrated bio-behavioral survey (IBBS) for men who have sex with men (MSM) using time location sampling (TLS). UCSF Global Health Sciences <https://globalhealthsciences.ucsf.edu/sites/globalhealthsciences.ucsf.edu/files/ibbs-tls-protocol.pdf>. Accessed 26 July 2017.
10. SUPERVISION TBO. A Status Report on Homelessness in Jamaica An All Parish The Board of Supervision (for the Relief of the Poor in Jamaica) Homelessness Survey, Ministry of Local Government and Community Development; 2012 p. 40.
11. Cederbaum JA, Wenzel SL, Gilbert ML, Chereji E. The HIV risk reduction needs of homeless women in Los Angeles. *Women's health issues : official publication of the Jacobs Institute of Women's Health*. 2013;23(3):e167–72.
12. Logan JL, Frye A, Pursell HO, Anderson-Nathe M, Scholl JE, Korthuis PT. Correlates of HIV risk behaviors among homeless and unstably housed young adults. *Public health reports (Washington, DC : 1974)*. 2013;128(3):153–60.
13. Grieb SM, Davey-Rothwell M, Latkin CA. Housing stability, residential transience, and HIV testing among low-income urban African Americans. *AIDS education and prevention : official publication of the International Society for AIDS Education*. 2013;25(5):430–44. [PubMed: 24059880]

14. Meyer JP, Zelenev A, Wickersham JA, Williams CT, Teixeira PA, Altice FL. Gender disparities in HIV treatment outcomes following release from jail: results from a multicenter study. *American journal of public health*. 2014;104(3):434–41. [PubMed: 24432878]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Demographic characteristics and HIV-related risk variables, homeless males and females, Jamaica, 2015

Table 1.

Variables	Total (N=323)	Males (N=278)	Females (N=45)	p-value
N (%)	N (%)	N (%)	N (%)	
Age groups (years)				0.896
24	16 (5.0)	14 (5.0)	2 (4.4)	
25 – 39	61 (18.9)	51 (18.3)	10 (22.2)	
40 – 59	164 (50.8)	143 (51.4)	21 (46.7)	
60	82 (25.4)	70 (25.2)	12 (26.7)	
Parish				0.954
Kingston and St. Andrew	221 (68.4)	190 (68.3)	31 (68.9)	
St. James	62 (19.2)	54 (19.4)	8 (17.8)	
St. Ann	40 (12.4)	34 (12.2)	6 (13.3)	
Type of site				0.614
Free Food Program	68 (21.1)	60 (21.6)	8 (17.8)	
Shelter	109 (33.7)	91 (32.7)	18 (40.0)	
Street	146 (45.2)	127 (45.7)	19 (42.2)	
Years on street				0.165
< 1	35 (10.8)	28 (10.1)	7 (15.6)	
1 – 5	125 (38.7)	104 (37.4)	21 (46.7)	
6	163 (50.5)	146 (52.5)	17 (37.8)	
Employment status				0.737
Student	2 (0.6)	2 (0.7)	0 (0.0)	
Unemployed	283 (90.1)	243 (90.0)	40 (90.9)	
Employed	29 (9.2)	25 (9.3)	4 (9.1)	
Highest level of education				0.007
No formal education	19 (6.3)	17 (6.7)	2 (4.4)	
Primary/Junior High	120 (40.0)	108 (42.4)	12 (26.7)	
Secondary High	128 (42.7)	99 (38.8)	29 (64.4)	
Technical/Vocational	17 (5.7)	17 (6.7)	0 (0.0)	
College/University	16 (5.3)	14 (5.5)	2 (4.4)	

Variables	Total (N=323)		Males (N=278)		Females (N=45)		p-value
	N (%)		N (%)		N (%)		
Marital status							
Single	244 (86.5)		208 (86.7)		36 (85.7)		0.825
Common law	21 (7.4)		18 (7.5)		3 (7.1)		
Married	10 (3.5)		8 (3.3)		2 (4.8)		
Divorced	4 (1.4)		3 (1.3)		1 (2.4)		
Widowed	3 (1.1)		3 (1.3)		0 (0.0)		
HIV status							
Positive	43 (13.8)		31 (11.6)		12 (26.7)		0.007
Negative	269 (86.2)		236 (88.4)		33 (73.3)		
HIV testing							
Never	103 (33.3)		89 (33.3)		14 (33.3)		0.320
Yes, less than 12 months	136 (44.0)		114 (42.7)		22 (52.4)		
Yes, more than 12 months	70 (22.7)		64 (24.0)		6 (14.3)		
Know HIV status							
Yes	188 (60.1)		159 (59.1)		29 (65.9)		0.304
No	125 (39.9)		110 (40.9)		15 (34.1)		
Number of partners in last 3 months							
0	174 (53.9)		153 (55.0)		21 (46.7)		0.018
1	65 (20.1)		49 (17.6)		16 (35.6)		
2	84 (26.0)		76(27.3)		8 (17.8)		
Ever traded sex for money							
Yes, homosexual contact	13 (4.2)		11 (4.2)		2 (4.4)		0.161
Yes, heterosexual contact	126 (40.8)		112 (42.4)		14 (31.1)		
No	170 (55.0)		141 (53.4)		29 (64.4)		
Ever traded sex for drugs							
Yes, homosexual contact	1 (0.5)		1 (0.6)		0 (0.0)		0.514
Yes, heterosexual contact	25 (12.8)		19 (11.8)		6 (17.1)		
No	170 (86.7)		141 (87.6)		29 (82.9)		
Ever traded sex for food/shelter/other goods							
Yes, homosexual contact	21 (6.5)		4 (1.5)		0 (0.0)		0.495

Variables	Total (N=323)		Males (N=278)		Females (N=45)		p-value
	N (%)	N (%)	N (%)	N (%)			
Yes, heterosexual contact	16 (5.0)	13 (4.9)	3 (7.1)				
No	285 (88.5)	246 (93.5)	39 (92.9)				
Condom use at last sex						0.319	
Yes	190 (67.1)	159 (66.0)	31 (73.8)				
No	93 (32.9)	82 (34.0)	11 (26.2)				
Ever had an STI						0.004	
Yes	137 (44.1)	125 (46.6)	12 (27.9)				
No	165 (53.1)	138 (51.5)	27 (62.8)				
Don't know	9 (2.9)	5 (1.9)	4 (9.3)				
Ever raped						<0.001	
Yes	33 (10.9)	18 (7.0)	15 (33.3)				
No	269 (89.1)	239 (93.0)	30 (67.7)				
In prison/jail for more than a night						<0.001	
Yes	217 (68.9)	197 (72.7)	20 (45.5)				
No	98 (31.1)	74 (27.3)	24 (54.5)				
Drug Use , ever						0.068	
Marijuana	213 (65.9)	191 (68.7)	22 (48.9)				
Crack	60 (18.6)	52 (18.7)	8 (17.8)				
Cocaine	24 (7.4)	21 (7.6)	3 (6.7)				
Marijuana/Crack	6 (1.9)	6 (2.2)	0 (0.0)				
Heroin	2 (0.6)	2 (0.7)	0 (0.0)				
No	56 (17.3)	44 (15.8)	12 (26.7)				
Drug Use in last month						0.110	
Yes	233 (86.6)	209 (87.8)	24 (77.4)				
No	36 (13.4)	29 (12.2)	7 (22.6)				

P-value based on Chi-square or Fisher's exact test; categories do not always add to totals due to missing values