

Prevalence and Risk Factors associated with Homelessness among Drug Users in Puerto Rico

Juan Carlos Reyes, MS, EdD*; Melissa Welch-Lazoritz, PhD†; Laura Zayas Martinez, BS*; Bilal Khan, PhD‡; Kirk Dombrowski, PhD†

Objective: This study aimed to determine the association between years of drug injection and homelessness among drug users in rural Puerto Rico.

Methods: Respondent-driven sampling methods allowed us to obtain a sample of 315 intravenous drug users (IDUs) in rural Puerto Rico. Information about sociodemographic characteristics, drug use patterns, homelessness and risk behaviors was obtained through structured interviews. HIV and HCV statuses were assessed via rapid antibody tests. Frequency distributions were used to describe the study sample. Bivariate analysis and multivariate logistic regressions were used to assess covariates of homelessness. The study received IRB approval through the University of Nebraska-Lincoln and the University of Puerto Rico.

Results: Almost 91% of the study participants were males. The mean age was 41.7 years and the majority of the participants had not completed high school (47.6%). The prevalence of current homelessness was 21.9%. After controlling for sociodemographic characteristics, homelessness was strongly associated with the number of years of injection drug use. The odds of being homeless for IDUs with 21 years or more of drug injection was almost 3 times higher than were the odds of being homeless for IDUs with fewer than 10 years of injection (OR = 2.58 95%; CI=1.21,5.48).

Conclusion: In rural Puerto Rico, the prevalence of current homelessness in IDUs was 21.7%. In the sample, 6.0% were HIV positive and 78.4% were HCV positive. Our results highlight the necessity of increasing accessibility to substance abuse treatment and establishing additional needle-exchange programs (currently, there is only 1) in rural Puerto Rico. [*P R Health Sci J* 2019;38:54-59]

Key words: Homelessness, Risk factors, Drug users

Injection drug use is an important topic in public health because it is a risk factor not only for premature mortality but also for Human immunodeficiency virus (HIV) and hepatitis C virus (HCV) infection; it also poses a significant threat to public health, affecting, both directly and indirectly, a large proportion of the population (1). The networks formed by the users of such drugs potentially serve as hidden reservoirs of infection, thus representing a danger to the populations that interact or are otherwise involved with those networks (2). According to the World Health Organization (3) the global population of people who inject drugs is approximately 13 million; of them, 1.7 million have been infected with HIV. Approximately 10% of the HIV infections that occur globally are linked to injected drug use (3). People who inject drugs are also affected by HCV, which has an estimated global prevalence of 67% (3). Furthermore, worldwide there are approximately 2.2 million people with HIV-HCV co-infections, more than half of which occur in people who inject drugs (3).

In 2013, according to the Centers for Disease Control and Prevention (CDC), 7% (3,096) of the estimated 47,352

diagnosed HIV infections in the United States were attributable to injection drug use; men accounted for 63% (1,942) and women accounted for 37% (1,154) of all injection drug use associated HIV infections (4). Another 3% (1,270) of all the estimated cases of HIV infections were among men who engaged in both injection drug use and male-to-male sexual contact (4). In Puerto Rico, the rates of injection drug use associated HIV infections are even higher. According to the Puerto Rico HIV surveillance summary (5), the cumulative HIV cases diagnosed as of August 31, 2016, comprising adults and adolescents, totaled

*University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico; †University of Nebraska, United States of America; ‡City University of New York, United States of America;

The author/s has/have no conflict/s of interest to disclose. This work was supported by the National Institute on Drug Abuse of the National Institutes of Health (grant number R01DA037117).

Address correspondence to: Juan Carlos Reyes, MS, EdD, Professor and Director, Department of Biostatistics and Epidemiology, School of Public Health, University of Puerto Rico Medical Sciences Campus, San Juan, PR. Email: juan.reyes5@upr.edu

26. Duncan I, Curtis R, Reyes JC, Abadie R, Khan B, Dombrowski K. Hepatitis C serosorting among people who inject drugs in rural Puerto Rico. *Prev Med Rep* 2017; 6:38-43.
27. Aidala A, Cross JE, Stall R, Harre D, Sumartojo E. Housing status and HIV risk behaviors: implications for prevention and policy. *AIDS Behav* 2005;9:251-265.
28. Song JY, Safaeian M, Strathdee SA, Vlahov D, Celentano DD. The prevalence of homelessness among injection drug users with and without HIV infection. *J Urban Health* 2000;77:678-687.
29. Topp L, Iversen J, Baldry E, Maher L, on behalf of the Collaboration of Australian NSPs. Housing Instability among People Who Inject Drugs: Results from the Australian Needle and Syringe Program Survey. *J Urban Health* 2013;90:699-716.
30. Salem BE, Ma-Pham J. Understanding Health Needs and Perspectives of Middle Age and Older Women Experiencing Homelessness. *Public Health Nurs* 2015;32:634-644.
31. Fairbairn N, Small W, Shannon K, Wood E, Kerr T. Seeking refuge from violence in street-based drug scenes: Women's experiences in North America's first supervised injection facility. *Soc Sci Med* 2008;67:817-823.
32. Abadie R, Welch-Lazoritz M, Khan B, Dombrowski K. Social Determinants of HIV/HCV Co-Infection: A Case Study from People Who Inject Drugs in Rural Puerto Rico. *Addict Behav Rep* 2017; 5: 29-32.
33. Welch-Lazoritz M, Habecker P, Dombrowski K, Rivera Villegas A, Davila CA, Rolón Colón Y, Miranda De León S. Differential Access to Syringe Exchange and Other Prevention Activities among People Who Inject Drugs in Rural and Urban Areas of Puerto Rico. *Int J Drug Policy* 2017; 43:16-22.