Association between health status and homeless chronicity among individuals attending community-based organizations in San Juan, Puerto Rico

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ABSTRACT

Background: Homeless populations have disclosed in many studies their particular needs of health care services, histories of hospitalization, chronic health conditions and mental illnesses. This study assessed the physical and mental health status across residential status of individuals attending community-based organizations (CBOs) in San Juan, Puerto Rico (PR). **Methods:** We performed a cross-sectional survey of 100 individuals aged 21-82 years enrolled in two CBOs that offer services to homeless in San Juan, PR. Face-to-face interviews collected information on socio-demographics, substance use, and access to medical care. The SF-36 health survey was administered to assess health status providing eight norm-based subscales, a Physical Component Summary (PCS) and a Mental Component Summary (MCS). Scores at or below the median were defined as poor physical or mental health status. Multiple logistic regression models were used to evaluate the association between health status and homeless chronicity. Models for PCS and MCS were generated separately and adjusted prevalence odds ratios (POR) were calculated. **Results:** Residential status was distributed as follows: 56.0% on-the-street homeless, 9.0% transitionally-housed and 35.0% housed. Mean PCS and MCS scores were 49.6±11.8 and 42.2±14.4, respectively. MCS unadjusted POR for on-the-street and transitionally homeless individuals were 2.88 (95% CI: 1.22-6.77) compared to housed individuals. PCS unadjusted POR for on-the-street and transitionally homeless individuals were 1.58 (95% CI: 0.56-4.43) compared to housed individuals. After adjusting for polydrug use and CBO as a random intercept, on-the-street and transitionally homeless were 2.57 (95% CI: 1.07-6.17) times more likely to have a poor mental health status than housed individuals. After adjusting for HIV, anxiety disorder and CBO as a random intercept, on-the-street and transitionally homeless were 1.27 (95% CI: 0.52-3.11) times more likely to have a poor physical health status than housed individuals. **Conclusions:** These findings underscore the need for more aggressive prevention and treatment programs targeting homeless adults in San Juan, PR.

BACKGROUND

Public health faces the tremendous challenge of homelessness. Not only is this situation alone complex, but very likely to interconnect with other problems like physical and mental health conditions, drug use and other negative health-related outcomes. Puerto Rico suffers from the unsolved and increasing issue of homelessness, being San Juan shelter of 27% of all the population in the island. More epidemiological data targeting the needs of homeless individuals are constantly at need for the planning of more effective interventions and innovative public policies.

STUDY AIMS

- To describe the population under study according to their socio-demographical characteristics, health related factors, drug use practices and access to health care.
- To assess the physical and mental health status by residential status using the 36-item short form health survey (SF-36).
- To estimate the magnitude of the association between health status and homeless chronicity adjusting for potential confounders such as socio-demographic characteristics, health related factors, drug use practices and access to health care.

METHODS

- **Study population**:
  Individuals were selected from two CBOs that offer services to homeless in San Juan, Puerto Rico. A convenience sample of 100 individuals was selected using the following criteria: (1) older than 21 years of age (2) currently participating at a program that offer services to homeless in San Juan and (3) cognitively able to provide informed consent.
- **Study design**:
  Cross-sectional study
- **Data collection**:
  Face-to-face interviews collected information on socio-demographic characteristics, health status, access to medical care and drug use practices. Residential status was defined as transitionally housed (living with friends, family or others) and on-the-street homeless (living on the street or in a shelter).

RESULTS

Table 1: Socio-demographic characteristics and residential status of study population.

		Overall (n = 100)	
		n	%
CBO			
La Fondita de Jesús		55	55.0
Las Duchas		45	45.0
Sex			
Male		93	93.0
Female		7	7.0
Age in years			
21 - 40		31	31.0
41 - 60		60	60.0
61 - 82		9	9.0
Mean±SD	46.0±11.3		
Education			
Less than high school		38	38.0
Completed high school		25	25.0
More than high school		37	37.0
Some college		13	13.0
Associate's degree		15	15.0
Bachelor's degree or more		9	9.0
Source of income*			
Welfare		62	62.0
Odds jobs on the streets		52	52.0
Salary		33	33.0
Residential Status			
On-the-street homeless		56	56.0
Transitionally housed		9	9.0
Housed		35	35.0
Self-perception of homelessness			
On-the-street homeless		49	87.5
Transitionally housed		5	55.6
Housed		10	28.6
Longest time lived on the streets			
≤ 3 years		63	69.2
4 - 6 years		18	19.8
≥ 7 years		10	11.0

* Categories are not mutually exclusive
SD Standard Deviation

Table 2: History of drug use in the past 12 months by study participants.

	Overall (n = 100)	
	n	%
Drug users	54	54.0
Polydrug users	34	63.0
Types of drugs used*		
Marijuana	31	57.4
Crack	26	48.1
Cocaine†	19	35.2
Heroine†	13	24.1
Analgesics / sedatives	11	20.4
Speedball‡	10	18.5
Amphetamines	1	1.9

* Categories are not mutually exclusive
† Inhaled and smoked only
‡ Injected mix of cocaine and heroine

Table 3: Access to health care factors of study population.

	Overall (n = 100)	
	n	%
Health insurance		
None	23	23.0
Public	73	73.0
Private	4	4.0
Unable to access health care services	36	36.0
Usual source of health care		
Outpatient department	48	48.0
Emergency room	28	28.0
Physician's office	16	16.0
CBOs	6	6.0
Received drug or alcohol treatment	54	54.0
Perception of health		
Excellent	17	17.0
Good	36	36.0
Fair	37	37.0
Poor	10	10.0

* Community health clinic specialized in homeless health care

Figure 1: Number of self-reported diagnosed health conditions and percent of people who received treatment among study participants (n = 100).

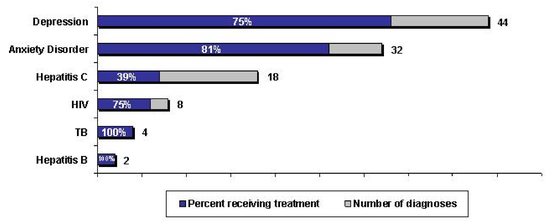


Figure 2: SF-36 subscales norm-based mean scores of study participants compared to a general US population (n = 100).

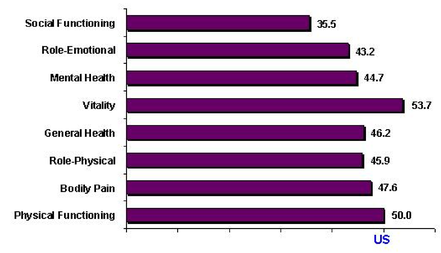


Table 4: Adjusted POR estimation to assess the association of SF-36 mental health score (MCS) at or below the median and residential status.

	Unadjusted†			Adjusted‡		
	POR	95% CI	P	POR	95% CI	P
Housed*	1.00			1.00		
On-the-street and transitionally homeless	2.88	1.22 – 6.77	0.02	2.57	1.07 – 6.17	0.04

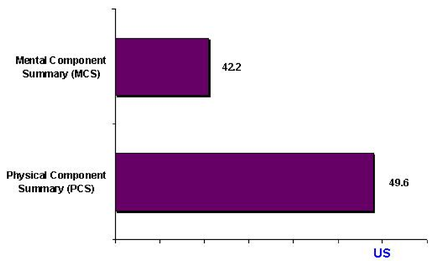
† POR controlling for interviewing site as random intercept
‡ Adjusted for polydrug use and interviewing site (random intercept)
* Reference category
MCS reference category: above the median

Table 5: Adjusted POR estimation to assess the association of SF-36 physical health score (PCS) at or below the median and residential status.

	Unadjusted†			Adjusted‡		
	POR	95% CI	P	POR	95% CI	P
Housed*	1.00			1.00		
On-the-street and transitionally homeless	1.58	0.56 – 4.43	0.39	1.27	0.52 – 3.11	0.60

† POR controlling for interviewing site as random intercept
‡ Adjusted for HIV, anxiety disorder and interviewing site (random intercept)
* Reference category
PCS reference category: above the median

Figure 3: SF-36 summary measure norm-based mean scores of study participants compared to a general US population (n = 100).



METHODS

- **Instrument:**
  To assess physical and mental health status, the SF-36 health survey version 1.0 was administered. This questionnaire generate eight subscales: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional and mental health. In addition, a Physical Component Summary (PCS) and a Mental Component Summary (MCS) were constructed. Scores ranged from 0 to 100 and were standardized using general US population data; higher scores being indicative of better health status.
- **Statistical analysis**:
  The SF-36 scores were dichotomized using their median values. Therefore, scores at or below the median were defined as poor physical or mental health status.

  Simple logistic regressions were used to evaluate the variables that were statistically associated ($p<0.05$) to MCS and PCS.

  To evaluate the association between the SF-36 scores and residential status, two multiple logistic regression models with random intercept were generated. The random intercept was chosen to control the effect of the interviewing site. Adjusted prevalence odds ratios were calculated to estimate the magnitude of the associations between health status and homeless chronicity.

CONCLUSIONS

- Transitionally housed had the lowest MCS mean score (32.6±16.6) and on-the-street homeless the lowest PCS mean score (48.0±12.6).
- After adjusting for polydrug use and interviewing site, on-the-street and transitionally homeless individuals were 2.57 (95% CI: 1.07-6.17) more likely to score at or below the median in the MCS scale than housed individuals. In contrast, our study showed that after adjusting for self-reported HIV, anxiety disorder, and interviewing site, on-the-street and transitionally homeless individuals were 1.27 (95% CI: 0.52-3.11) times more likely to score at or below the median in the PCS scale than housed individuals; however, this result was not statistically significant.
- The results presented in this study support the hypothesis that the mental health status among on-the-street and transitionally homeless is worst than the mental health status of housed individuals.
- The prevalence of self-reported psychiatric conditions and substance use was considerable, and an increasing need for more specialized programs tailored to the needs of people experiencing homelessness in San Juan is tremendously needed.
- Consistent with the recommendations of the National Health Care for the Homeless Council (2009), expanding and strengthening the health care programs that respond to and prevent homelessness in San Juan will minimize its impact on their communities.

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