Published in final edited form as:

Womens Health Issues. 2008 ; 18(1): 26–34. doi:10.1016/j.whi.2007.08.005.

Ethnic differences in the correlates of mental distress among homeless women¹

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INTRODUCTION

The demographic profile of homelessness in the United States has shifted dramatically in recent decades (Baker, 1994; Rossi, 1990), with women and racial/ethnic minorities comprising an increasing proportion of individuals without stable housing. Limited research has explored women's experiences of homelessness, and even less has focused on racial/ethnic differences in the correlates and health consequences of homelessness among women (North & Smith, 1994).

Of particular concern to those providing services to homeless individuals is the prevalence of mental health problems in this population. Homeless women are significantly more likely than their housed counterparts to experience mental health problems ranging from generalized depression and anxiety to more serious diagnoses such as schizophrenia and post-traumatic stress disorder (Bassuk *et al.*, 1998; Folsom *et al.*, 2005; Robertson & Winkleby, 1996). Homelessness is frequently co-incident with organic mental illness; for example, Folsom *et al.* (2005) found a homelessness rate of 15 percent in a sample of individuals receiving treatment for bipolar disorder, schizophrenia, or major depression. It is likely, however, that an even higher proportion of homeless individuals experience general mental distress or "demoralization" as they struggle to meet their daily needs for food and shelter. This pervasive distress has serious implications for individuals as they attempt to survive and transition out of homelessness (Bassuk *et al.*, 1996; Bogard *et al.*, 1999).

¹This research was supported by a grant from the Agency for Health Care Policy and Research (R01 HS08323); a grant from the National Institute on Drug Abuse (R01 DA14835); and the Robert Wood Johnson Foundation (#26892). Ronald Andersen received support from the UCLA/DREW Project EXPORT, NCMHD, P20MD000148/P20MD000182. Lillian Gelberg received support from the George F. Kneller Professorship and the Robert Wood Johnson Generalist Physician Faculty Scholars Program Award. Ronald Andersen and Lillian Gelberg are members, National Academy of Sciences, Institute of Medicine.

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The social correlates of mental health outcomes in the general population has been thoroughly explored, with a report to the U.S. Surgeon General on the mental health of Americans finding that racial/ethnic minorities in the United States experience serious mental health disorders at rates similar to White Americans (U.S. Department of Health and Human Services, 2001). The interrelationship between race/ethnicity, socioeconomic status, and mental distress has received particular research attention, though findings are far from consistent (Takeuchi & Williams, 2003). Some studies find that race-based differences in perceived mental distress are explained by socioeconomic status is considered, while others find persistent racial differences in distress even after controlling for socioeconomic status (George & Lynch, 2003; Lincoln *et al.*, 2003). Regardless of racial/ethnic background, however, evidence suggests that individuals in impoverished neighborhoods tend to experience heightened depression and anxiety as a consequence of their surroundings (Hill *et al.*, 2005).

Less is known about the prevalence and correlates of mental distress in the homeless population, and reported estimates of mental health disorders among homeless individuals are characterized by several methodological problems. First, because the homeless population is transient by definition, many studies of homeless populations are based on small convenience samples. Studies often sample individuals who have been identified by social service agencies or the courts as needing care for mental health or substance abuse problems, potentially overestimating the prevalence of mental distress in this population. Moreover, history of psychiatric hospitalization is often used as a measure of mental health in this population; however, homeless individuals are often hospitalized (voluntarily or not) for issues misdiagnosed as or co-occurring with psychiatric problems, including substance abuse or assault (Bogard *et al.*, 1999). While psychiatric hospitalization may be a reasonable proxy for severe mental illness, the fact that it is also a measure of access to medical care makes it unsuitable for identifying general mental distress in this population.

In this study we explored ethnic differences in homeless women's mental health using a short inventory of mental distress administered to homeless women in Los Angeles. We address the lack of systematic, theoretically-informed research on ethnic differences in the homeless population using the Gelberg-Andersen Behavioral Model for Vulnerable Populations (Gelberg *et al.*, 2000). This model expands on the traditional predisposing, enabling, and need domains which form the core of the Behavioral Model by including an additional set of factors which are especially salient for vulnerable populations; examples include the duration and severity of homelessness and the existence of competing needs, such as having to find food and shelter on a daily basis. Specifically, we sought to determine 1) if self-reported mental distress differs by ethnicity in this population; 2) whether correlates of mental distress (i.e., predisposing and enabling factors) vary by ethnicity; and 3) how the Behavioral Model for Vulnerable Populations works to predict mental distress among each ethnic group. In addition, we also considered whether the correlates of distress differed for women who were caring for children compared to solitary women. Findings from this paper will be utilized to suggest potential culturally-specific interventions targeted to reduce the mental distress of different ethnic groups of homeless women.

METHODS

Participants

This study used data from the Homeless Women's Health Project, a community-based probability sample of homeless women in Los Angeles County. Women participated in structured, face-to-face survey interviews between January and October 1997 on issues pertaining to health, service utilization, and the experience of homelessness. The study was conducted jointly by [blinded by WHI editors] and was approved by both organizations' Institutional Review Boards.

Women of reproductive age (15 to 44) were selected in a community-based probability survey from 66 sites (50 shelters and 16 meal programs) providing services to homeless individuals in Los Angeles County (details can be found in Stein et al., 2000). Study eligibility was determined through an initial screening for homelessness, defined as having spent any of the past 30 nights in a mission, shelter, church, indoor public place (e.g., an all-night theater), abandoned building, vehicle, on the street or other outdoor public place. Women who were enrolled in a rehabilitation program for homeless individuals and who had also spent at least one night in the past 30 days in one of the above-mentioned locations were eligible for inclusion in the study. All study participants were deemed to be homeless by the above definition at the time of the interview.

Interviewers conducted structured survey interviews with a total of 974 homeless women. Women were paid \$2 for completing the initial screening interview to determine homelessness status and eligible participants were paid an additional \$10 for completion of the full interview, which lasted approximately 50 minutes. The overall response rate for the study was 81 percent.

Measures

The survey instrument was designed to measure both the traditional and vulnerable domains of the Behavioral Model for Vulnerable Populations and was comprised of several well-established measures which have been extensively used within the homeless population. The Behavioral Model explains *Need* in terms of *Predisposing* and *Enabling* Factors, suggesting that individuals' Need (perceived or evaluated health status) is a function of factors that predispose them to good health (demographics, social structure, health history) and factors that enable good health (e.g., social support, health insurance, having a regular source of care, income).

Psychological distress was measured with the Mental Health Index (MHI-5) (Stewart *et al.*, 1988). Using a six-point scale ranging from "all of the time" to "none of the time," participants rated how often in the past month they experienced feeling: nervous; calm and peaceful; downhearted and blue; happy; down in the dumps and unable to be cheered up. Items were reverse coded as needed and transformed to create a scale ranging from 0 (low distress) to 100 (high distress). The reliability and validity of the MHI-5 is well-established (Berwick *et al.*, 1991); Cronbach's alpha in this sample was .81 for African Americans and Hispanics and .84 for Whites. Scores of 34 or higher on the scaled MHI-5 instrument suggest the need for further evaluation of mental health (Rubenstein *et al.*, 1995).

Predisposing factors included respondent's age at the time of the interview, whether they were currently living in a marriage or marriage-like partnership, years of education, and whether they worked full- or part-time during the past month. Social networks were measured by the number of close friends and relatives with whom the participant felt they could talk openly about what was on their mind, while the frequency of social contact was measured by the number of times the participant got together with such friends or relatives during the past month. A measure of having spent any time in prison or jail was also included.

Measures of assault included having been physically or sexually assaulted before age 18 and having been physically or sexually assaulted in the previous 12 months. Diagnostic screeners for lifetime drug or alcohol dependence, developed by Rost and colleagues for use with homeless populations, asked about excessive substance use, increasing substance use to get the desired effect, and emotional or psychological problems resulting from substance use (Rost *et al.*, 1993).

Measures of homelessness included: lifetime years of homelessness; number of times the individual had been homeless in their lifetime; age of first homeless episode; and the modal

housing situation during the past 60 days (i.e., traditional housing; shelter or institution; limited housing, including living in a vehicle, abandoned building, or public space not meant for sleeping such as a bus station; or outdoors).

Enabling factors included having a regular source of medical care, having health insurance, having a case manager to help navigate social and health services, receiving assistance through a general health relief program, and the number of encouragements from family, friends, or health care workers to seek preventive screening and care for four common health problems (range = 0 to 4). Monthly income from all sources (e.g., panhandling, working, food stamps) was totaled and a dichotomous measure of poverty status was created using the 1997 federal poverty guidelines; respondents with monthly income of less than \$657 were considered to be living in poverty. An indicator was constructed to distinguish those women who currently had children living with them. A competing needs index was created by summing four competing needs experienced during the past month, including difficulty finding a place to sleep at night, enough food to eat, a place to wash, or a place to go to the bathroom.

Data Analysis

For this analysis, we limited the sample to individuals from those racial/ethnic groups with sufficient sample size to conduct stratified analyses (African American, Hispanic, and White) and who completed the psychological distress scale, resulting in a sample size of 821. Bivariate associations between ethnicity and all predisposing and enabling characteristics were tested using Chi-square tests for categorical variables and ANOVA for continuous measures with Bonferroni post-hoc tests for multiple comparisons. Multiple linear regression models stratified by ethnicity were then estimated to examine the influence of substantively-related blocks of variables (representing the predisposing and enabling domains of the Behavioral Model) on the MHI-5. We further refined these models by examining mothers and non-mothers separately to illustrate the impact of caring for children. All models were estimated using the survey procedures available in Stata/SE version 9.0 to account for the clustered sampling design and sample weights.

RESULTS

A total of 821 women were included in our analysis (Table 1). 67% of the sample was African American, while 16% were Hispanic and 17% identified as White. White women reported the greatest mental distress (mean = 39.71, SD = 24.35), followed by Hispanics (mean = 36.69, SD = 23.59). African American women reported the lowest overall mental distress scores (mean = 33.39, SD = 22.48); only the difference between African Americans and Whites was statistically significant. 45.6% of the overall sample had a mental distress score of 34 or higher, indicating the need for clinical evaluation (including 51.3% of Whites, 51.0% of Hispanics, and 42.7% of African Americans).

Many predisposing characteristics varied by race/ethnicity (Table 1). White women had been homeless longer on average and experienced more lifetime episodes of homelessness, while African American women were older on average when they first became homeless. Hispanics were much more likely to have stayed at a shelter or institution and less likely to have spent time on the streets over the past 30 days. White women had less access to showers/baths over the past 30 days.

African American women were the oldest on average, while almost half of the Hispanics were under age 30. Hispanics had the lowest average educational attainment (mean = 10.36 years), significantly lower than both African Americans and Whites. Few of the women had worked in the past month, regardless of ethnicity. While approximately half of the African American and White women had spent time in jail or prison, a significantly smaller percentage of

Hispanics had done so. African American women reported more close friends or relatives in the Los Angeles area compared to White women, though there were no ethnic differences in the reported frequency of social contact. There were marked differences in women's experiences of physical and sexual assault, with nearly twice as many White women reporting childhood or recent assault. Substance use also varied by ethnicity, with Hispanics being much less likely to report alcohol or drug abuse; Hispanics were also less likely to have been hospitalized for psychiatric care.

All but two of the variables in the enabling domain – income and encouragements to seek care – varied by ethnicity (Table 2). Whites were much less likely (55%) than African Americans (70%) and Hispanics (68%) to report having a regular source of health care. Hispanics were, generally, most likely to have a case manager and to have health insurance, but were significantly less likely to be covered by a general health relief program. A majority of Hispanic women (62%) were currently caring for children, while only 33% of White women and 42% of African American women were doing so. Hispanic women reported a significantly lower number of competing needs over the past 30 days compared to African Americans and Whites.

Using multiple OLS regression models stratified by race/ethnicity, we estimated the effects of the predisposing and enabling domains of the Behavioral Model for Vulnerable Populations on mental distress (Table 3). The initial model included a block of predisposing variables characterizing the duration and severity of homelessness to highlight the centrality of the housing experience for this population and then to hold this experience constant when examining the effects of other predisposing and enabling characteristics. Only among Hispanics was the experience of homelessness significantly associated with mental distress; as expected, living on the streets over the past 30 days was associated with greater mental distress scores while access to baths or showers was associated with less distress.

A variety of other predisposing variables was associated with mental distress, and these factors varied considerably by race/ethnicity (Table 3, Model 2). Being partnered or married was significantly associated with *greater* mental distress among both African American and White women. History of incarceration was significantly associated with lower levels of mental distress among African Americans (and was marginally significant for Whites). Recent physical assault resulted in higher levels of mental distress for African Americans, while recent sexual assault resulted in higher levels of mental distress for Whites; both effects disappeared once enabling characteristics were included in Model 3 of Table 3. Childhood physical assault was predictive of mental distress among Hispanics even once enabling characteristics were considered, and recent physical assault became a significant predictor of mental distress among Whites once enabling characteristics were controlled. Only among Whites was psychiatric hospitalization significantly associated with greater mental distress.

None of the enabling characteristics were associated with mental distress among Whites (Table 3, Model 3), though the challenge of dealing with competing needs (e.g., for food, shelter) was associated with increased mental distress among both African Americans and Hispanics. For Hispanics, being on a general health relief program was associated with lower mental distress while having a regular source of care was actually associated with greater mental distress. Overall, the proportion of explained variance resulting from the inclusion of all predisposing and enabling factors – both traditional predictors and those specific to vulnerable populations – was moderate and varied by ethnicity, with just under a quarter of the variance in mental distress explained by the Behavioral Model for Vulnerable Populations among African Americans and Hispanics and nearly 35 percent of variance in mental distress explained for Whites.

In considering the impact of homelessness on mental distress, a key distinction is whether individuals are currently solitary or whether they are partnered and/or caring for children (Buckner *et al.*, 1993; Smith & North, 1994). Additional analyses were conducted to explore whether this aspect of the homeless experience resulted in different degrees of mental distress across ethnic categories; specifically, we tested whether the correlates of mental distress varied for women in current partnerships versus single women and for women who were currently caring for children versus those who were not by further stratifying the full models by partnership and parenting status (results not shown).

While the predisposing and enabling factors which comprise the Behavioral Model for Vulnerable Populations do not appear to operate differently for partnered and single women, the experience of caring for children while homeless had a clear impact on mental distress. Distress scores were higher among non-mothers within each ethnic group, though only among Hispanic women was there a significant difference in mental distress scores between women currently caring for children (mean = 33.74, SD = 21.59) and those who were not (mean = 41.68, SD = 25.82).

In addition, estimating the model separately for mothers and non-mothers clarified several of the above-noted relationships between predisposing factors and mental distress. For example, being currently partnered was associated with higher distress scores only among African American women *without* children; among African American mothers being partnered had no relationship to distress, pointing to the buffering effect that caring for children may have for African American women. Among White women caring for children, having close relatives in the Los Angeles area reduced mental distress, while there was no association between the number of close relatives and distress for White non-mothers. Having a regular source of medical care dramatically reduced mental distress among White non-mothers but not among White mothers. For Hispanic women without children, more frequent social contact was associated with reduced distress. However, Hispanic mothers living on the street were predicted to have dramatically higher mental distress scores, while living on the street was not significantly associated with distress for Hispanic women without children. Working was also correlated with distress for Hispanic mothers but not for non-mothers, suggesting that Hispanic women may be particularly susceptible to stress resulting from the difficulties associated with raising children without the benefit of stable housing.

DISCUSSION

The goal of this study was to describe ethnic differences in the correlates of mental distress among homeless women in Los Angeles County. Women in each of the ethnic groups studied reported considerable distress, with White women reporting the highest overall levels of mental distress followed by Hispanics and African Americans. Almost half of the women in our study had a mental distress score suggesting the need for further evaluation and possible clinical intervention.

Many of the predisposing and enabling factors which comprise the Behavioral Model for Vulnerable Populations varied by ethnicity, sometimes in ways that contrast with previous findings on the relationship between race/ethnicity and mental distress in general population studies. For example, differences in access to socioeconomic resources and social support have been identified as key mechanisms through which race/ethnicity relates to depression (Gore & Aseltine, 2003; Wu *et al.*, 2003), though in our sample of homeless women there were no ethnic differences in either income, number of close relatives in Los Angeles, or encouragements to seek care, and these variables were not important predictors of mental distress in any ethnic group. Other studies have posited that the racial/ethnic discrimination experienced by minorities contributes to greater mental distress among minorities compared to Whites

(Franklin-Jackson & Carter, 2007), which our study also contradicts since we found that Whites had greater distress. It may be that in an exceptionally impoverished population such as homeless women, the disadvantage associated with minority status is trumped by the overwhelming vulnerability of being without stable housing; in short, homeless women's lives may be so disconnected from the mainstream institutions and interactions through which racial/ethnic discrimination is commonly experienced that minority status has reduced salience and limited impact on mental distress in this population.

One particularly striking finding is the high level of mental distress associated with being partnered or married for African American women without children and also among White women regardless of parenting status. Existing general population research has demonstrated poorer mental health outcomes associated with marriage for women compared to men (Williams, 2003), and our results suggest that this pattern holds even among extremely disadvantaged populations. While it is impossible to attribute causality to this association, this finding clearly points to the need for careful consideration of the potential consequences of public policies (such as the federally-funded "Healthy Marriage Initiative") aimed at promoting marriage as a means to reduce the number of women in poverty.

In addition to the role that partners may play in homeless women's mental distress, the differing needs of parenting and solitary women also have implications for the provision of services which may improve homeless women's well-being. The stress associated with primary responsibility for children appears to operate as an additional competing need among homeless mothers, in addition to daily struggles for food and shelter. Indeed, there is growing concern that the additional burdens faced by homeless families, including daily struggles to ensure the safety and health of children along with access to schooling and childcare, make it even more difficult for homeless women with children to compete with solitary homeless persons for limited affordable housing and low-skilled jobs (Arangua & Gelberg, 2007).

The role that physical and sexual abuse plays in the lives of homeless women and the consequent mental distress that they experience as a result also cannot be underestimated. More than one third of the sample had been physically or sexually abused during childhood or physically assaulted in the past year, and 13% had been sexually assaulted in the past year. It is no wonder that this victimization was one of the most important predictors of mental distress for homeless women, and among the Hispanic women, their childhood abuse experiences continue to plague them. The interaction between domestic violence and subsequent homelessness must be acknowledged and addressed, and abuse/assault prevention efforts and survivor counseling are needed both on the streets and within shelters.

Our findings also point to the need for careful consideration of the additional needs of Hispanic homeless women. Hispanic women, especially mothers, seem particularly vulnerable to the stress associated with living on the streets. Though untestable in this study, it may be that Hispanic women feel exposed to questioning and possible harassment by police or immigration officials when they are unhoused; this concern may be one reason why doubling-up, in which several families share one dwelling, is more common among Hispanics. Undocumented Hispanic women may also be less likely to seek out services due to fear of deportation or because of language barriers. In cities in which a large portion of the homeless are non-native, which is increasingly the case across the nation, homeless service providers must be clear regarding their policies on providing services to undocumented individuals.

This study faces many of the limitations common to cross-sectional designs. Most importantly, we cannot fully address the causal ordering between predisposing/enabling characteristics, homelessness, and mental health problems. While we have spoken in terms of correlates, a more sophisticated longitudinal design would allow an examination of how moving into and

out of homelessness interacts with mental distress. Our analyses are also limited by women's self-reports of past experiences (a common problem in survey research) and the lack of a subjective measure of perceived racial/ethnic discrimination; such a measure could potentially provide a more nuanced view of how women experience and understand racial/ethnic inequality in their lives.

An additional concern is the generalizability of these findings, both in terms of the age of the data (which were collected in 1997) and the focus on metropolitan Los Angeles. Certainly the specific programs and policies which characterized the homeless services available in Los Angeles in 1997 have evolved over the past 10 years, as a result of shifting policy priorities at both the local and national levels. The number of service providers in Los Angeles receiving grants specifically targeted at improving homeless persons' access to medical care has increased over the past decade, as efforts have been made to ensure that the cities which make up the greater Los Angeles metropolitan area are able to provide care locally for their homeless populations (which currently are estimated to be between 100,000 to 200,000 individuals on any given night). This push comes as a result of political pressure to "decentralize" homeless services away from the traditional Skid Row area in downtown Los Angeles by spreading responsibility for homeless services more equitably around the region. In addition, Los Angeles has implemented a "zero-tolerance" policy regarding children on Skid Row, which has been successful at reducing the number of children living in the most dangerous of situations. At the national level, there has been renewed policy emphasis on reducing chronic homelessness among single adults with disabling conditions, including serious mental illness and substance abuse problems (HUD, 2003). While these policies benefit homeless individuals overall by making services more widely accessible, there is a continuing need for services targeted specifically at homeless women and their families, including increased access to shelters which allow children and even provide child care.

Our study makes a number of contributions to the study of ethnic differences in mental health in this understudied population. Our sample is representative of a large metropolitan population of homeless women and was drawn from a variety of venues in both urban and suburban communities, though estimates suggest that about 10% of the homeless population is not captured by sampling from shelters or free meal programs (Burnam & Koegel, 1988). This careful attention to sampling design reduces a common bias in studies of homeless populations, however, which often overestimate the prevalence of mental health problems by relying solely on health services organizations for participant recruitment or through a failure to down-weight chronically homeless users of homeless community services. Our large sample also provides adequate representation of the three major ethnic groups in the Los Angeles area, moving beyond the traditional White/non-White dichotomy to offer a more detailed understanding of how race/ethnicity may influence mental health by allowing us examine both the correlates and the outcome of interest separately for each group. Ultimately this work may contribute to calls for "culturally competent" assistance for homeless women by drawing attention to the unique and somewhat unexpected ways that race/ethnicity is associated with mental distress in this population of vulnerable women.

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Ethnic differences in the Behavioral Model for Vulnerable Populations among homeless women in Los Angeles: Predisposing Factors

Table 1

	Total Sample	African American	Hispanic	White	AA-W	AA-H	W-H
	% or mean (SD)	% or mean (SD)	% or mean (SD)	% or mean (SD)			
Experience of Homelessness							
Total years homeless, lifetime	2.50 (3.74)	2.56 (3.65)	1.87 (3.31)	2.85 (4.38)	---	---	.092
Episodes of homelessness, lifetime	3.26 (7.04)	3.26 (6.73)	2.10 (3.71)	4.35 (9.89)	---	---	.025
Age at first homeless episode	27.45 (8.62)	28.38 (8.44)	25.27 (8.63)	25.84 (8.71)	.005	.001	---
Modal Housing Situation, past 60 days					---	.017	.035
Traditional housing	20	22	18	19			
Shelter or institution	68	65	78	68			
Limited shelter	4	4	1	3			
Streets	8	9	3	11			
Number of showers/baths, past 30 days	27.18 (6.49)	27.37 (6.35)	27.68 (6.25)	25.99 (7.10)	.070	---	.093
Age at Time of Interview					.018	.001	---
Ages 15–19	3	2	6	4			
Ages 20–29	25	20	42	31			
Ages 30–39	48	51	38	46			
Ages 40–44	24	27	14	19			
Currently married/partnered	22	20	30	24	---	.016	---
Years of education	11.69 (2.24)	11.94 (1.93)	10.36 (2.84)	11.96 (2.31)	---	.001	.001
Working full- or part-time during past month	13	13	12	13	---	---	---
Ever spent time in jail/prison	53	53	34	47	---	.001	.022
Frequency of social contact	3.03 (1.77)	3.06 (1.80)	3.03 (1.70)	2.94 (1.76)	---	---	---
Number of close friends/relatives in LA	5.18 (8.46)	5.59 (9.26)	4.84 (7.47)	3.89 (5.55)	.099	---	---
Assault History							
Physical assault before age 18	40	37	36	57	.001	---	.001
Sexual assault before age 18	30	27	22	50	.001	---	.001
Physical assault during last 12 months	32	29	30	43	.002	---	.024
Sexual assault during last 12 months	13	12	14	17	---	---	---
Substance Abuse and Mental Health							

	Total Sample % or mean (SD)	African American % or mean (SD)	Hispanic % or mean (SD)	White % or mean (SD)	Statistical Sig.		
					AA-W	AA-H	W-H
History of alcohol abuse, lifetime	40	43	28	41	---	.002	.029
History of drug abuse, lifetime	46	48	31	54	---	.001	.001
History of psychiatric hospitalization, lifetime	23	23	18	29	---	---	.041
Women (<i>n</i>)	821	548	131	142			

Note: P-values from ANOVA or chi-square tests of differences between African-Americans (AA), Hispanics (H), and Whites (W)

Ethnic differences in the Behavioral Model for Vulnerable Populations among homeless women in Los Angeles: Enabling Factors

Table 2

	Total Sample % or mean (SD)	African American % or mean (SD)	Hispanic % or mean (SD)	White % or mean (SD)	AA-W	Statistical Sig.	
						AA-H	W-H
Regular source of health care	67	70	68	55	.001	---	.028
Health insurance	54	53	61	48	---	---	.039
Income below poverty level, last 30 days	82	81	81	84	---	---	---
Number of encouragements to seek health care (0-4)	.79 (1.15)	.76 (1.14)	.84 (1.18)	.87 (1.13)	---	---	---
Having a case manager	62	61	73	58	---	.007	.010
On general health relief program	28	32	14	25	---	.001	.010
Currently caring for children	44	42	62	33	.050	.001	.001
Competing needs score, past 30 days (0-4)	1.51 (.80)	1.51 (.82)	1.38 (.68)	1.62 (.81)		.041	
Women (n)	821	548	131	142	---		---

Note: P-values from ANOVA or chi-square tests of differences between African-Americans (AA), Hispanics (H), and Whites (W)

Table 3
Mental health inventory (MHI-5) score: Stratified linear regression models testing the Behavioral Model for Vulnerable Populations

	African American			Hispanic			White		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Predisposing Factors									
Experience of Homelessness									
Total years homeless, lifetime	.15 (.55)	.37 (0.54)	.53 (0.48)	.71 (.63)	-1.22 (0.78)	-.89 (0.66)	.67 (.51)	.52 (0.72)	.59 (0.80)
Episodes of homelessness, lifetime	.37 (.26)	.21 (0.22)	.29 (0.20)	.43 (.59)	.06 (0.52)	-.52 (0.47)	.12 (.26)	.25 (0.14) #	.10 (0.16)
Age at first homeless episode	-.08 (.19)	.29 (0.24)	.34 (0.21)	-.28 (.42)	-.95 (0.43) *	-.79 (0.52)	.50 (.37)	.61 (0.51)	.48 (0.49)
Lived on streets, last 60 days	.04 (.04)	.02 (0.04)	.01 (0.04)	.28 (.14) *	.22 (0.18)	.11 (0.22)	.04 (.09)	.10 (0.09)	.01 (0.08)
Number of showers/baths, past 30 days	-.46 (.30)	-.13 (0.21)	.22 (0.19)	.75 (.34) *	.71 (0.33) *	.66 (0.26) *	-.50 (.39)	-.40 (0.37)	-.41 (0.36)
Age		-.39 (0.28)	-.30 (0.26)		.90 (0.49) #	.92 (0.55)		-.23 (0.65)	-.10 (0.59)
Currently married/partnered		11.81 (3.07) ***	9.95 (2.78) ***		-5.98 (4.49)	-5.43 (3.68)		15.46 (5.82) **	12.02 (6.20) #
Years of education		-1.33 (0.91)	-1.47 (0.78) #		.25 (0.66)	-.72 (0.61)		.48 (1.03)	.01 (0.82)
Working full- or part-time during past month		-2.44 (2.53)	2.21 (2.63)		3.26 (4.32)	6.41 (3.44) #		-13.75 (5.61) *	-11.70 (6.15) #
Ever spent time in prison/jail		-4.86 (2.17) *	-4.19 (2.20) #		-1.21 (5.86)	-5.00 (5.88)		-11.30 (6.32) #	-8.10 (4.73) #
Frequency of social contact		-1.06 (0.75)	-.97 (0.71)		-3.35 (0.88) ***	-2.58 (1.06) **		-1.01 (1.25)	-.66 (1.10)
Number of close relatives in LA		-.11 (0.12)	-.08 (0.11)		-.05 (0.15)	-.03 (0.18)		-.74 (0.44) #	-.45 (0.46)
Assault History									
Physical assault before age 18		5.44 (3.39)	3.56 (2.98) ***		6.71 (3.22) *	9.31 (3.06) **		-2.08 (4.70)	-.89 (5.11)
Sexual assault before age 18		.49 (3.06)	-.52 (2.96)		5.94 (4.89)	1.61 (4.63)		1.41 (3.42)	.99 (3.42)
Physical assault during last 12 months		11.97 (3.54) ***	12.37 (3.22)		4.29 (5.07)	4.92 (4.78)		7.11 (5.22)	6.20 (4.44) *
Sexual assault during last 12 months		5.71 (3.95)	5.10 (3.37)		-.23 (5.14)	-4.13 (4.34)		15.38 (7.31) *	14.78 (7.13)
Substance Abuse and Mental Health									
History of alcohol abuse, lifetime		.62 (2.45)	1.72 (2.27)		1.52 (5.24)	1.56 (5.19)		6.91 (5.69)	4.42 (4.80)
History of drug abuse, lifetime		3.54 (2.82)	3.50 (2.59)		5.04 (4.96)	7.04 (4.46)		6.67 (6.88)	3.15 (5.47)
History of psychiatric hospitalization, lifetime		2.95 (3.03)	3.03 (2.79)		6.20 (4.15)	2.77 (4.48)		15.16 (5.04) **	13.11 (5.31) **
Enabling Factors									

	African American			Hispanic			White		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Regular source of health care			−2.62 (2.58)			7.16 (3.22) *			−7.41 (5.07)
Health insurance			1.82 (2.93)			5.97 (4.47)			5.16 (5.47)
Income below poverty level, last 30 days			4.47 (2.83)			3.49 (4.32)			−1.36 (5.68)
Number of encouragements to seek health care (0–4)			1.06 (0.99)			.47 (1.54)			1.62 (1.82)
Having a case manager			2.60 (2.37)			−5.56 (4.89)			−2.68 (4.92)
On general health relief program			−2.93 (2.92)			−12.18 (5.26) *			7.22 (5.56)
Currently caring for children			2.35 (2.88)			−8.05 (5.51)			−2.29 (5.61)
Competing needs score, past 30 days (barrier) (0–4)			7.47 (1.60) ***			8.45 (2.92) **			5.91 (3.82)
Number of observations	548	548	548	131	131	131	142	142	142
Model significance (F test)	2.58 *	5.30 ***	8.20 ***	2.94 **	4.00 ***	13.32 ***	1.40	8.51 ***	10.57 ***
Adjusted R-squared	.039	.178	.236	.057	.188	.248	.049	.319	.348

p < .10
* p < .05
** p < .01
*** p < .001