

Trauma, Depression, Coping, and Mental Health Service Seeking Among Impoverished Women

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The authors examined the relationship among trauma, coping, depression, and mental health service seeking in a probability sample of sheltered homeless and low-income housed women. Results highlight the diversity of trauma. In a longitudinal analysis, women who lived in shelters or experienced major violence had a twofold increase in their risk of depression over the 6-month follow-up. In a cross-sectional analysis, childhood sexual abuse, living in a shelter, physical violence, childhood physical abuse, and death or injury of a friend or relative predicted avoidant coping and symptoms of depression. Active coping and depression predicted mental health service seeking among traumatized women. Modifying coping strategies may ameliorate some of the negative impact of trauma and potentially enhance mental health service use among at-risk women.

Keywords: trauma, depression, coping, mental health service seeking, homelessness

A growing body of literature documents the high prevalence of traumatic experiences among homeless women (e.g., Browne, 1993; Browne & Bassuk, 1997; D'Ercole & Struening, 1990; Kushel, Evans, Perry, Robertson, & Moss, 2003; Nyamathi, Leake, & Gelberg, 2000). Exposure to traumatic events has been associated with negative mental health outcomes, including depression (Burnam et al., 1988; Coker et al., 2002). Studies have found that, overall, homeless people suffer from depression at substantially higher rates than members of the general population (Koegel, Burnam, & Farr, 1988), with exposure to traumatic events increasing the risk for the disorder (Banyard & Graham-Bermann, 1998; La Gory, Ritchey, & Mullis, 1990; Votta & Manion, 2003; Wong & Piliavin, 2001). It should be noted that most of these studies investigated “negative life events,” rather than “traumas” among homeless people. However, it may be argued that negative life events occurring in the context of homelessness, as well as the condition of homelessness itself, in fact constitute traumatic events (Goodman, Saxe, & Harvey, 1991). The stress induced by the sudden or gradual loss of one’s home, in addition to the daily hassles associated with life on the streets, can be sufficient to result in psychological trauma symptoms.

Most of the evidence linking homeless people’s negative or traumatic life events with depression comes from cross-sectional studies (Banyard & Graham-Bermann, 1998; La Gory et al., 1990; Votta & Manion, 2003). On one hand, Lam and Rosenheck’s (1998) longitudinal study investigated criminal victimization

among homeless persons with severe mental illness but did not find evidence that criminal victimization increased depressive symptoms. Wong and Piliavin (2001), on the other hand, conducted a longitudinal study and found that crime victimization and childhood stressful events (including homelessness and child abuse) predicted depression among homeless persons. The present study expands on these previous findings. It used a rigorous method to track participants from baseline to 6-month follow-up and investigated whether different types of traumatic events measured at baseline increased the risk of clinically significant symptoms of depression at follow-up. It features a sample that has not been investigated with a longitudinal design: indigent women recruited from homeless shelters and low-income housing facilities.

A better understanding of factors that influence the relationship between trauma and depression in homeless women may guide intervention efforts aimed at reducing the negative consequences of trauma exposure. Pearlin et al.’s conceptual model of the stress process (Pearlin, Lieberman, Menaghan, & Mullan, 1981) provides a useful framework for this purpose. It proposes three key resources—mastery, social support, and coping—that may influence mental health outcomes when people encounter stressful events. La Gory, Ritchey, and Mullis (1990) found that mastery, defined as the perception of being in control of one’s life, did not influence the relationship between the negative life events and depression among homeless individuals. Social support, however, affected the relationships between two trauma predictors, longer term homelessness and the use of street environments, and depression. Wong and Piliavin’s (2001) longitudinal study found that adverse childhood events were related to decreased social support, which in turn was related to psychological distress.

To our knowledge, no study has investigated coping, the third key resource in Pearlin et al.’s (1981) model that is hypothesized to influence mental health outcomes in low-income housed and sheltered homeless women. *Coping* is defined as a person’s pattern of responses to stressful situations (Lazarus & Folkman, 1984).

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This research was supported by National Institute on Drug Abuse Grant R01DA11370 (principal investigator, Suzanne L. Wenzel). We thank Judy Perlman, Kirsten Becker, and Crystal Kollross for data collection.

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Successful coping requires approaches that seek to avoid the problem, that is, avoidant coping, as well as those that actively deal with it, that is, active coping (Roth & Cohen, 1986). Avoidant coping may have the short-term benefit of reducing stress and anxiety. It may, however, be counterproductive in the long term because it prevents assimilation and resolution of the trauma. Active coping, although it may increase distress in the short term, allows for appropriate action and eventual resolution of the trauma. This may explain why avoidant coping is more detrimental to mental health than approach-oriented, active strategies (Fondacaro & Moos, 1989; Holahan & Moos, 1987).

Preliminary evidence suggests that coping is related to mental health outcomes in homeless individuals. Votta and Manion (2003) found that a disengaging coping style increased the risk for depression among homeless male adolescents. Littrell and Beck (2001) showed that reliance on active, problem-focused coping strategies was associated with lower levels of depression among African American homeless or insecurely sheltered men. Banyard and Graham-Bermann's (1998) study of homeless and low-income housed mothers revealed that both stressful events and avoidant coping strategies were related to depression. The present study expands on these findings and seeks to explore the role of coping in the relationship between trauma and symptoms of depression in a representative sample of sheltered homeless and low-income housed women.

Trauma and depression among indigent women increase their need for mental health services. However, despite high levels of need, many homeless people do not receive adequate or appropriate physical (Gelberg, 1996) and mental (Breakey et al., 1989) health care. Furthermore, traumatized people in general are unlikely to seek mental health services (e.g., Amaya-Jackson et al., 1999; Jaycox, Marshall, & Schell, in press).

Mental health service seeking among the homeless tends to be related to their level of need (Koegel, Sullivan, Burnam, Morton, & Wenzel, 1999; Wenzel et al., 1995), education, residential stability, having a usual sleeping place, and having health insurance (Wenzel et al., 2001). With regard to traumatized indigent women, it is conceivable that certain psychological variables may be of additional relevance. An avoidant coping style may reduce the likelihood of obtaining mental health services, whereas an active style may enhance it. Hence, this study investigated how active and avoidant coping, along with depression, influence mental health service seeking in indigent women with trauma histories, controlling for other relevant factors.

We used the behavioral model of health services utilization (Aday, Andersen, & Fleming, 1980; Andersen & Newman, 1973), which has guided several previous studies of access to care among homeless individuals (Koegel et al., 1999; Padgett, Struening, & Andrews, 1990; Wenzel et al., 1995) and has been updated for vulnerable populations (Gelberg, Andersen, & Leake, 2000). As applied to vulnerable populations, the three-step model includes the following domains: (a) the person's background characteristics, called *traditional predisposing* factors (e.g., age, marital status, education) and *vulnerable predisposing* factors, including psychological resources (e.g., coping, self-esteem); (b) social factors, called *traditional enabling* factors (e.g., having insurance and a regular source of care) and *vulnerable enabling* factors (e.g., competing needs); and (c) the

level of illness, which includes *traditional need* factors (e.g., diagnosis of a disorder, severity of symptoms) and *vulnerable need* factors (e.g., conditions of particular relevance to vulnerable populations). According to the model, coping is considered a predisposing vulnerability factor; however, studies have not examined its role in mental health service seeking among traumatized indigent women.

Hypotheses

In this study, we use a broad definition of trauma, including potentially traumatizing events such as spending the night in jail or prison and living in a homeless shelter. We hypothesized that experiencing a trauma after baseline would increase the likelihood of clinically significant symptoms of depression at 6-month follow-up (Hypothesis 1). In addition, we considered the role of coping in the relationship between traumatic events and symptoms of depression. Specifically, we predicted that avoidant coping would be positively related to experiencing a trauma and that high levels of avoidant coping would account for some of the relationship between trauma and depression; we also predicted that active coping would be negatively related to experiencing a trauma and that low levels of active coping would account for some of the relationship between trauma and depression (Hypothesis 2). Lastly, we hypothesized that active coping would increase the probability that traumatized women would seek mental health services, whereas avoidant coping would decrease it (Hypothesis 3).

Method

Participants

Participants were 810 women (402 sampled from shelters, 408 sampled from low-income housing) who were sampled as part of a larger study examining experiences of drug use, violence, and HIV risk among impoverished women (Tucker, Wenzel, Elliott, Marshall, & Williamson, 2004; Wenzel et al., 2004). The study area was the central region of Los Angeles County (approximately a 15-mile [24.14-km] radius from downtown Los Angeles). Women were eligible for the study if they were between the ages of 18 and 55, spoke and understood English as their primary language, and did not have significant cognitive impairment.

Procedures

The RAND Human Subjects Protection Committee approved the study's procedures. Individual computer-assisted face-to-face structured interviews, lasting approximately 1.0 to 1.5 hr, were conducted by trained female interviewers at baseline and after a 6-month follow-up interval. Women received \$15 for the interview and provided informed consent prior to their participation. The median length of time between baseline and follow-up interviews was 6.1 months (minimum = 3.3, maximum = 21.0). The overall retention rate was 90%: 87% for women originally found in shelters and 93% for those who were initially housed. The results described in the present article include only women who completed both the baseline and follow-up assessments. Additional details on the overall study's sample design are provided elsewhere (Elliott et al., in press).

Study Design

We defined as *sheltered homeless* those women who were sampled from 51 facilities with a simple majority of homeless residents (persons who would otherwise live in the streets or who sleep in shelters and have no

place of their own to go). Although women were not initially screened for homelessness on an individual basis, 50% of them indicated that they currently did not have a regular place to stay (e.g., own house, apartment, or room, or the home of a family member or friend), and 92% indicated that they had previously stayed in a homeless setting (e.g., mission or homeless shelter, the street) because they had no regular place to stay. We sought a representative sample of women living in the diverse array of temporary lodging options available in Los Angeles County. Thus, the sheltered sample was drawn from homeless emergency shelters, transitional living facilities, single-room occupancy hotels, board-and-care and voucher hotels, detoxification and rehabilitation centers, mental health facilities, and HIV/AIDS transitional homes in the study area. Domestic violence shelters were excluded. Specifically, sheltered women were selected by means of a stratified random sample, with shelters serving as sampling strata. A proportionate-to-size (PPS) stratified random sample would have been overly burdensome on the larger shelters, so small departures were made from PPS and corrected with sampling weights. The response rate was 86% for sheltered women.

We defined as *low-income housed* those women who were sampled from Section 8 private project-based Department of Housing and Urban Development (HUD)-subsidized apartments in the study area. To qualify for Section 8 housing, a person can make no more than 50% of the median income for Los Angeles County. Housed women were drawn from 66 HUD Section 8 apartment buildings, with buildings serving as sampling strata. As was the case for shelters, a PPS stratified random sample would have been overly burdensome on the larger buildings, so small departures were made from PPS and corrected with sampling weights. Once a unit was sampled from a building, one woman resident was randomly sampled within each randomly selected unit. The response rate was 76% for housed women.

Variables for Predictors of Depression Analyses (Hypotheses 1 and 2)

Control Variables

These variables are summarized in Table 1.

Trauma Predictors

We assessed the following traumas: history of homelessness, any major physical violence, any physical violence, any rape, any sexual violence, childhood physical and sexual abuse, time in jail/prison, having a child placed in foster care, being the victim of a serious accident or natural disaster, death of a family member or close friend, and being the victim of robbery or burglary. Living in a homeless shelter, which was a criterion for selecting half of our sample, was also defined as a trauma. The sources of these variables, the time of assessment (baseline or follow-up), and the time frame assessed are displayed in Table 1.

Coping

At baseline, we assessed active coping strategies (i.e., talking to a professional; getting informed about the problem; thinking about what needs to be done; talking to a friend, neighbor, or relative about problems; making a plan of action and following it) and avoidant coping strategies (i.e., making self feel better by eating, smoking, or drinking; hoping for a miracle; taking it out on other people; spending more time alone; sleeping more than usual) with a series of questions adapted from Sherbourne, Hays, Ordway, DiMatteo, and Kravitz (1992). Participants rated on a scale from 1 (*never*) to 5 (*very often*) how frequently they had used each coping strategy during the past 6 months in response to problems. The standard-

Table 1
Hypotheses 1 and 2: Control Variables and Trauma Predictors

Variables	Time of assessment and time frame assessed		Source (if applicable)
	Baseline	Follow-up	
Control variables			
Race/ethnicity (non-Hispanic Black, non-Hispanic/White or other, Black)	Present		
Age (in years)	Present		
Employment status (employed vs. unemployed)	Present		
Education (less than HS, HS, or more than HS)	Present		
Relationship status (married or living with a primary partner or not)	Present		
Trauma predictors			
Living in a homeless shelter	Present	Present	
History of homelessness (months homeless)	Lifetime	Lifetime	
Any major physical violence ^b	Past 12 mos.	Past 6 mos.	All adult sexual and physical violence items ^a derived from Conflict Tactics Scale by Straus et al. (1996); Wenzel et al. (2000)
Any physical violence ^c	Past 12 mos.	Past 6 mos.	
Any rape ^d	Since 18	Past 6 mos.	
Any sexual violence	Since 18	Past 6 mos.	
Childhood physical abuse	Lifetime		Items from Wenzel et al. (2004)
Childhood sexual abuse	Lifetime		Items from Wenzel et al. (2004)
Time in jail or prison	Lifetime	Past 6 mos.	Remaining trauma predictors adapted from Gelberg et al. (1995); Course of Homelessness Study (Koegel & Burnam, 1991; Koegel et al., 1999)
Child in foster care		Lifetime, past 6 mos.	
Serious accident or natural disaster		Lifetime, past 6 mos.	
Death of family member or close friend		Lifetime, past 6 mos.	
Robbed or burglarized		Past 6 mos.	

Note. HS = high school; mos. = months.

^a All items asked in reference to the following groups of perpetrators: primary partners, casual partners, need-based partners, family, friends, acquaintances, strangers. ^b Defined as having been beaten up, kicked, assaulted with knife or gun, punched or hit, etc. ^c Defined as being pushed or shoved, grabbed, slapped, etc. ^d Defined as forced vaginal intercourse, anal intercourse, or oral sex.

ized internal consistency coefficients of the avoidance and approach coping scales were .63 and .61, respectively.

Depression

At baseline, we used screening questions developed by Rost, Burnam, and Smith (1993) to assess whether women had a diagnosis of depression during the past 12 months. Depression at follow-up was assessed with five items from the depression subscale of the Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). We used a subset of the original scale in order to reduce response burden for our participants. These items have been used in previous research in homeless populations (Burnam et al., 1995) and capture the cognitive, behavioral, affective, and motivational components of depression. Participants rated, on a scale ranging from 1 (*never*) to 5 (*very often*), how frequently they had experienced each of the symptoms during the past 7 days. The internal consistency of the subscale was .74 (Cronbach's alpha). Depending on the analysis (see below), we used either the continuous version of the scale or a dichotomized version that is designed to identify individuals with a clinically significant symptom level. We used the dichotomized version of the scale in the analysis pertaining to Hypothesis 1. In this analysis, we measured the presence of clinically significant symptoms of depression at follow-up while controlling for baseline depression. Because baseline depression was assessed with a dichotomous variable (diagnosis of depression in the past 12 months), we decided to use a dichotomous version of the follow-up measure as well. Hopkins Symptoms Checklist scores equal to or greater than 1.75 (out of a possible 4.0) are considered to lie in the clinical range for depression (Sandanger et al., 1998) and suggest the need for treatment (Hansson, Nettelbladt, Borgquist, & Nordstrom, 1994). A score of 1.75 corresponds to a cut-off score of 2 on our 5-point scale. Hence, we

used a mean score greater than or equal to 2 to define clinically significant symptoms of depression.

Variables for Mental Health Service Seeking Analysis (Hypothesis 3)

Mental Health Service Seeking

At follow-up, we asked women whether they had seen a mental health professional (e.g., counselor, psychologist) for emotional problems during the past 6 months. This question was adapted from the Course of Homelessness Study (Koegel & Burnam, 1991).

Predisposing, Enabling, and Need Variables

These variables and their sources, if applicable, are listed in Table 2.

Statistical Methods

Disproportionate sampling techniques and differential response rates at baseline required the use of design and nonresponse weights to represent the target population from the study sample of respondents. All analyses incorporate these weights and use the linearization method to account for the modest design effect that they induce (Skinner, 1989). Given the low attrition rate at 6-month follow-up and that a pool of baseline variables was not predictive of attrition, additional attrition weights would not have improved estimation and thus were not calculated. All analyses utilizing baseline and follow-up data therefore use the same combination of design weights and weights correcting for nonresponse at baseline.

Table 2
Hypothesis 3: Predisposing, Enabling, and Need Variables

Predictors	Time of assessment and time frame assessed		Source (if applicable)
	Baseline	Follow-up	
Predisposing traditional			
Same as control variables in Table 1	Present		
Living in a homeless shelter	Present		
Predisposing vulnerable			
Active and avoidant coping	Past 6 mos.		Sherbourne et al. (1992).
Self-esteem ^a	Present		Rosenberg (1965)
Traditional and vulnerable enabling			
Health insurance	Present		All traditional and vulnerable enabling variables adapted from the Course of Homelessness Study (Koegel & Burnam, 1991) and the HIV Cost and Services Utilization Study (Shapiro et al., 1999)
Assistance from social worker	Past 6 mos.		
Inability to access medical care	Present		
Regular source of health care	Present		
Competing needs (no food, no safe place to stay overnight)	Past 6 mos.		
Traditional and vulnerable need			
Screening diagnosis of depression	Past 12 mos.		Screening items by Rost et al. (1993)
Overall psychological distress ^b	Past month		
PTSD symptoms ^c	Past month		7 items based on Foa et al. (1995)
Quality of life	Present	Present	Item used in HIV Cost and Services Utilization Study (Hays et al., 2000)
Screening diagnosis of panic disorder	Past 12 mos.		Screening items used in RAND/USC Injury Study (Marshall, 1999)
Screening diagnosis of mania/psychosis	Lifetime		Screening items adapted from RAND/UCLA Health Care for Communities Study (Sturm et al., 1999) and Watkins & Wenzel (2000)

Note. mos. = months; PTSD = posttraumatic stress disorder.

^a Standardized internal consistency coefficient: 0.81. ^b Standardized internal consistency coefficient: 0.82. ^c Standardized internal consistency coefficient: 0.89.

Results

Description of the Sample

The mean age of the sample was 34 years ($SD = 9.91$). Because of the small number of Caucasian/White, Native American, Asian/Pacific Islander, and mixed/other participants, we combined these groups in our analyses. Preliminary analyses had shown that the direction of the relationship between the predictors and outcome variables was largely identical for Caucasians/Whites and members of other racial/ethnic groups. Rates of trauma exposure were higher in the sheltered sample compared with the housed sample (e.g., childhood sexual abuse: sheltered 41% vs. housed 21%; childhood physical abuse: sheltered 46% vs. housed 20%) for all of the traumatic events. We decided to investigate the combined sample of sheltered and housed women because the direction of the relationship between traumatic events and depression and coping and depression was the same in both samples. In terms of lifetime trauma exposure, women reported the highest rates of exposure for the death of a close friend or family member (43.13%), incarceration (33.94%), childhood physical abuse (31.01%), and childhood sexual abuse (29.82%). With regard to traumatic events in the past 12 months (assessed at baseline) and the past 6 months (assessed at follow-up), rates were highest for physical violence (22.01% and 15.68%, respectively). More details about the demographic characteristics, rates of trauma exposure, and other study variables are provided in Tables 3 and 4.

Analyses

We conducted separate analyses to investigate our three hypotheses. We used a standard longitudinal analysis to examine Hypothesis 1. For Hypotheses 2 and 3, we used cross-sectional analyses (see below).

Hypothesis 1: Longitudinal Analysis

A standard pretest–posttest analysis examined whether experiencing a trauma increased the risk for clinically significant symptoms of depression among sheltered homeless and low-income housed women. We (a) measured women’s diagnostic status for depression at baseline, (b) inquired about their traumatic experiences in the prior 6 months at follow-up, and (c) reexamined the presence of clinically significant symptoms of depression at the 6-month follow-up.

Bivariate logistic regressions. To obtain a parsimonious multivariate model, we first ran bivariate logistic regressions predicting clinically significant symptoms of depression at follow-up from traumas that occurred in the previous 6 months. Results of the bivariate logistic regressions showed that all of the trauma variables we tested were associated with a possible diagnosis of depression at the 6-month follow-up at $p < .10$ (see Table 5).

Multivariate logistic regression. Because of their association with clinically significant symptoms of depression on a bivariate level, we included all of the trauma predictors, except for two, in the multivariate model. With regard to the two sexual and physical assault predictors for the multivariate model, we selected those that had the larger p values in bivariate analyses (i.e., any rape in past 6 months and any major physical violence in past 6 months). We then ran a multivariate logistic regression, controlling for demographics and baseline diagnosis of depression, to predict clinically

significant symptoms of depression at follow-up (based on our dichotomized depression scale) from traumas that occurred during the interval between baseline and follow-up. Results showed that any major physical violence and living in a homeless shelter were significantly associated with clinically significant symptoms of depression at follow-up (see Table 5). Spending at least one night in jail or prison, getting robbed or burglarized, and any other tragic event (defined as death of a friend or family member, being the victim of an accident or natural disaster, or having a child placed in foster care) were each marginally related to clinically significant symptoms of depression ($p < .10$), whereas any rape was not a significant predictor.¹

Hypothesis 2: Trauma, Depression, and Coping Analysis

We conducted a series of multiple regressions to determine the extent to which active and avoidant coping influence the relationship between trauma and symptoms of depression. In this cross-sectional analysis, we measured coping at baseline and symptoms of depression at follow-up. We used symptoms of depression at follow-up as the outcome in this analysis, instead of baseline depression, to be clear about the time order of events. We asked about traumas that occurred before the follow-up assessment. Some of these traumatic events were measured at baseline and some at follow-up. It is important to note, however, that all of them occurred before the time frame inquired about in the assessment of depression at follow-up (past 7 days). Hence, the possibility of “reverse causality” is eliminated. In addition, the continuous measure of depression used at follow-up also allowed us to run a linear regression. Using baseline depression as the outcome would have required a logistic regression because of the dichotomous assessment of depression at baseline. Under normal circumstances, a linear regression of a continuous outcome is more powerful than a logistic regression of a dichotomization of the same or a similar outcome.

Some of the trauma predictors occurred well before our baseline assessment (e.g., childhood abuse). We did not have specific hypotheses about how such prior traumas and coping mechanisms would change women’s symptoms of depression during the baseline–follow-up interval. Hence, although we used both baseline and follow-up data, we decided not to control for baseline depression in this analysis.

Model selection. We conducted a series of model selection procedures to generate a parsimonious model featuring a set of traumatic events that predict symptoms of depression at follow-up. In bivariate analyses and multivariate regression models, we predicted symptoms of depression at follow-up (as measured by the

¹ Some predictors may have failed to reach significance because of their high associations with each other and/or their low frequency. Only 14 women (1.73%) had been raped during the 6 months between the baseline and follow-up assessments. To examine the associations among the marginally significant and nonsignificant variables, we ran unweighted Fischer’s exact tests and found significant relationships between spending at least one night in jail/prison and any other tragic event ($p < .001$) and between any rape and getting robbed or burglarized ($p < .05$). Weighted chi-square tests confirmed the results of the Fischer’s exact test and revealed additional significant associations among these variables. A joint test in our logistic regression for the three marginally significant predictors and any rape was significant at $p < .05$.

continuous version of our depression scale) from traumatic events. The trauma predictors in the initial multivariate model were at least marginally associated with symptoms of depression at the bivariate level ($p < .20$); only results with $p < .05$ in the final multivariate models were considered statistically significant. For the initial model, we selected the two sexual and physical assault predictors that had the highest correlation with symptoms of depression at the bivariate level, that is, rape since age 18 ($r = .13$, $p < .001$) and physical violence during the past 12 months ($r = .13$, $p < .001$).² To achieve parsimony, in three subsequent mod-

Table 3
Descriptive Statistics of Dichotomous Variables

Demographics and control variables assessed at baseline	%
Education: High school	36.02
Education: More than high school	38.39
Race/ethnicity: Hispanic	23.22
White/other (non-Hispanic) ^a	9.91
Black/African American	61.70
Native American	0.96
Asian/Pacific Islander	1.83
Mixed race/other	2.38
Other demographics and control variables	
Living with primary partner/married	23.84
Employed	48.56
Living in a homeless shelter	40.50
Traumatic experiences assessed at baseline	
Any physical violence (past 12 months)	22.01
Any major physical violence (past 12 months)	16.68
Any sexual violence (since age 18)	22.02
Any rape (since age 18)	21.06
Any childhood physical violence	31.01
Any childhood sexual abuse	29.82
Jail or prison (lifetime)	33.94
Child in foster care (lifetime)	13.74
Accident/natural disaster (lifetime)	21.63
Death/injury of friend/family member (lifetime)	43.13
Traumatic experiences assessed at follow-up	
Any physical violence (past 6 months)	15.68
Any major physical violence (past 6 months)	9.26
Any sexual violence (past 6 months)	1.85
Any rape (past 6 months)	1.73
At least one night in prison (past 6 months)	4.20
Robbed or burglarized (past 6 months)	14.22
Other tragic event (past 6 months) ^b	7.79
Enabling and need variables (mental health service-seeking analysis)	
Health insurance	81.15
Assistance from social worker (past 6 months)	42.38
Inability to access medical care	18.85
Regular source of health care	80.54
Competing needs (past 6 months)	20.81
Screening diagnosis of panic disorder (past 12 months)	29.26
Screening diagnosis of depression (past 12 months)	46.10
Screening diagnosis of mania or psychosis (lifetime)	15.08
Outcome variables assessed at follow-up	
Clinically significant symptoms of depression (HSCL-25)	46.41
Mental health service seeking (past 6 months) ^c	23.38

Note. HSCL-25 = Hopkins Symptoms Checklist 25.

^a Defined as non-Black and non-Hispanic. ^b Defined as injury or death of a friend or family member, victim of accident or natural disaster, having child placed in foster care. ^c Sample restricted to women who experienced a trauma that placed them at risk for experiencing symptoms of depression (i.e., physical violence in past 12 months, childhood physical or sexual abuse, death of a friend or relative, and/or a history of homelessness).

Table 4
Descriptive Statistics of Continuous Variables

Variable	<i>M</i>	<i>SD</i>
Demographic and control variables		
Age	34.21	9.91
Traumatic experiences		
Total number of months homeless (lifetime)	7.60	22.89
Coping		
Avoidant coping	2.70	0.79
Active coping	3.35	0.81
Enabling and need variables (mental health service-seeking analysis) ^a		
Self-esteem	4.38	0.72
PTSD symptoms	0.45	0.63
Overall psychological distress	63.85	21.27
Quality of life ^b	7.14	2.12
Outcome variable		
Depression (HSCL-25) ^b	2.05	0.77

Note. PTSD = posttraumatic stress disorder; HSCL-25 = Hopkins Symptoms Checklist 25.

^a Sample restricted to women who experienced a trauma that placed them at risk for symptoms of depression (i.e., currently living in shelter, physical violence in past 12 months, childhood physical or sexual abuse, injury or death of friend or family member). ^b Assessed at 6-month follow-up; other variables assessed at baseline.

els, we eliminated, one at a time, the predictor variables with the lowest significance levels ($p > .10$). We arrived at a final set of six trauma predictors. Finally, we ran one multivariate model predicting symptoms of depression at follow-up from selected traumas and active coping, and another predicting symptoms of depression at follow-up from the traumas and avoidant coping. Whereas avoidant coping was a significant predictor when tested together with the traumas ($p < .001$), active coping was not ($p > .20$). Hence, we decided to pursue an analysis for avoidant coping only (see Table 6).

Relationship among trauma, avoidant coping, and symptoms of depression. We ran three separate multivariate regression models to examine whether traumatic events were associated with an increase in depression, whether avoidant coping accounted for some of the relationship between trauma and depression, and whether avoidant coping was positively related to experiencing traumatic events. In the first, symptoms of depression were regressed on the traumas; second, depressive symptoms were regressed on the traumas and avoidant coping; and third, avoidant coping was regressed on the traumas (see Table 6).

Childhood sexual abuse, living in a homeless shelter, physical violence in the past 12 months, childhood physical abuse, and death of a close friend or family member were all related to avoidant coping. Although childhood sexual abuse predicted symptoms of depression in the model that did not include avoidant coping as a predictor ($p < .05$), it was no longer significant after we controlled for avoidant coping. Living in a homeless shelter, physical violence in the past 12 months, childhood physical abuse, and death of a close friend or family member also predicted symptoms of depression in the model that did not include avoidant coping. The significance level of these predictors dropped somewhat when avoidant coping was included in the model.

² Bivariate partial Spearman correlations adjusted for demographics.

Table 5
Weighted Logistic Regression Analysis Predicting Clinically Significant Symptoms of Depression at Follow-up from Traumatic Events During Baseline to Follow-Up Interval

Variable	Bivariate logistic regression		Multiple logistic regression			
	Estimate	<i>p</i>	Estimate	<i>p</i>	Odds ratio	(95% CI)
Control variables						
Age ^a	0.18	.0146	0.14	.0908	1.15	(0.98, 1.35)
Education						
High school	-0.57	.0002	-0.63	.0025	0.53	(0.35, 0.81)
More than high school	-0.06	.6784	-0.25	.2288	0.78	(0.52, 1.17)
Race						
Hispanic	-0.10	.5481	-0.16	.4193	0.85	(0.57, 1.26)
White, other (non-Hispanic) ^b	0.26	.1823	-0.40	.0939	0.67	(0.42, 1.07)
Married or living with primary partner	-0.43	.0089	-0.03	.8732	0.97	(0.67, 1.41)
Employed	-0.30	.0372	-0.15	.3579	0.86	(0.63, 1.18)
Screening diagnosis of depression (past 12 months)	1.35	<.0001	1.07	<.0001	2.93	(2.12, 4.04)
Traumatic events during baseline follow-up interval						
Living in a homeless shelter	1.03	<.0001	0.64	.0004	1.90	(1.33, 2.70)
At least one night in prison (past 6 months)	1.88	.0004	1.02	.0784	2.78	(0.89, 8.68)
Any major physical violence (past 6 months)	1.45	<.0001	0.97	.0028	2.64	(1.40, 5.00)
Any rape (past 6 months)	1.92	.0116	1.17	.1667	3.23	(0.61, 17.07)
Robbed or burglarized (past 6 months)	0.83	.0001	0.45	.0662	1.58	(0.97, 2.56)
Other tragic event (past 6 months) ^c	0.58	.0220	0.54	.0620	1.71	(0.97, 3.01)

^a Converted to *z* score (*M* = 0, *SD* = 1). ^b Defined as non-Black and non-Hispanic. ^c Defined as death or injury of a friend or family member, being the victim of accident or natural disaster, having a child placed in foster care.

Hypothesis 3: Mental Health Help-Seeking Analysis

Restriction of sample. We restricted the sample to women who had experienced a traumatic event that put them at risk for experiencing symptoms of depression on the basis of our previous analyses. This subsample included women who had experienced at least one of the following: physical violence during the past 12 months, childhood physical abuse, childhood sexual abuse, death of a friend or relative, and/or a history of homelessness (defined as having spent more than one night homeless). Within this restricted sample of 663 traumatized women (82% of the total sample), 155 (24%) had sought mental health services at follow-up.

Logistic regression predicting mental health service seeking. A logistic regression, controlling for traditional predisposing factors—that is, demographics and housing status (shelter vs. low-income housing)—predicted mental health service seeking at follow-up from the selected predisposing vulnerable, enabling, and need variables (see Table 7). This analysis included only variables that were at least marginally associated with help-seeking in bivariate logistic regressions (i.e., *p* < .20). Linear hypothesis tests showed that variables comprising the predisposing vulnerable block and those comprising the need block significantly predicted mental health service seeking, $\chi^2(3) = 16.21, p < .01$, and $\chi^2(6) = 60.62, p < .001$, respectively. The enabling block was not significant. Within the vulnerable block, only active coping was significant (*p* < .001). Within the need block, diagnosis of depression during the past 12 months (*p* < .05), posttraumatic stress disorder (PTSD) symptoms based on the Posttraumatic Diagnostic Scale (*p* < .01; Foa, Molnar, & Cashman, 1995), low quality of life (*p* < .05), and lifetime diagnosis of mania or psychotic disorder

(*p* < .001) were significant. Overall psychological distress and diagnosis of panic disorder were not significant (*p* < .10).

In Table 7, to more clearly convey the magnitude of significant effects in our multivariate model, we report the changes in the multivariately adjusted probability of the outcome associated with each statistically significant predictor. These results are generated by the method of recycled predictions (Graubard & Korn, 1999), directly from the multivariate model. The changes in probability correspond to a one standard deviation change for continuous predictors and a one-unit change for categorical predictors, with all other predictors held at their natural levels. A one standard deviation increase in active coping was associated with a 3% increase in mental health care utilization (from a base rate of 24%). The highest change in probability was associated with the need variable mania/psychosis (change in probability = 16%).

Discussion

This study investigated the relationship among traumatic events, coping, depression, and mental health service seeking in sheltered homeless and low-income housed women. Results confirm the findings of previous studies (e.g., Bassuk & Rosenberg, 1988; Browne & Bassuk, 1997; D’Ercole & Struening, 1990) that documented the high prevalence of traumatic events and depression among indigent individuals. Our data indicate that the rate of clinically significant symptoms of depression, conservatively estimated, is about 5 times higher in this population than in general community samples of women. Our study also highlights the diversity of trauma in sheltered homeless and low-income housed women’s lives. Lifetime rates are striking for childhood physical

Table 6
*Relationship Among Traumatic Events, Avoidant Coping, and Symptoms of Depression:
 Regression Coefficients From Weighted Analysis*

Outcome variable	Bivariate linear regression Depression	Multiple linear regression		
		Depression ^a ($R^2 = .20$)	Depression ^b ($R^2 = .28$)	Avoidant coping ($R^2 = .22$)
Control variables				
Age ^c	0.09***	0.05†	0.05†	0.00
Education	-0.18**	-0.21**	-0.16*	-0.17**
High school				
More than high school	-0.11†	-0.22**	-0.18**	-0.13†
Ethnicity				
Hispanic	-0.04	-0.02	0.03	-0.17**
White/other (non-Hispanic) ^d	0.18*	-0.12	-0.10	-0.08
Primary partner/married	-0.24***	-0.08	-0.07	-0.05
Employed	-0.17**	-0.05	-0.06	0.01
Traumatic events				
Living in homeless shelter	0.49***	0.28***	0.17**	0.38***
Physical violence past 12 mos.	0.33***	0.17**	0.10	0.22***
Childhood physical violence	0.43***	0.22***	0.16**	0.19**
Childhood sexual abuse	0.35***	0.14*	0.08	0.21***
Death/injury of friend/relative ^e	0.28***	0.20***	0.14**	0.21***
No. of months homeless (life) ^c	0.17***	0.07*	0.05†	0.05
Avoidant coping ^c	0.34***	—	0.24***	—

Note. mos. = months.

^a Model does not include avoidant coping as predictor. ^b Model includes avoidant coping as predictor. ^c Converted to z scores ($M = 0$, $SD = 1$). ^d Defined as Native American, Asian-Pacific Islander, mixed race/other. ^e Assessed at follow-up; other variables assessed at baseline. Dashes indicate variable not applicable. † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

or sexual abuse, rape and other sexual violence, spending time in jail or prison, being the victim of a serious accident or natural disaster, being confronted with the death or serious injury of a friend or relative, having a child placed in foster care, and physical violence. However, although these data are troublesome in their own right, they do not reveal the far-reaching individual and societal consequences of trauma and depression in this population.

Our first hypothesis, predicting that traumatic events occurring during the time interval between baseline and follow-up would increase the risk of a possible diagnosis of depression at follow-up, was supported for major physical violence. Women who were punched or hit, choked, burned or scalded, beaten up, kicked, bitten or scratched, threatened or assaulted with a knife or gun, and/or slammed against a wall in the previous 6 months were more than twice as likely to be clinically depressed at follow-up than women without these experiences. This finding is congruent with a growing literature indicating that persons with injury-related trauma develop significant psychological distress and psychiatric morbidity (e.g., Birmes et al., 2001). In addition, we found that living in a shelter, or unmeasured factors leading women to live in shelters, was associated with a twofold increase in their risk of a possible diagnosis of depression over the 6-month follow-up. This finding supports the argument that the condition of homelessness itself represents an extremely stressful, potentially traumatic condition (Goodman et al., 1991). Because of the low frequency counts and associations among variables, we were unable to conclude that rape, spending at least one night in jail or prison, getting robbed or burglarized, death or injury of a friend or family member, being the victim of accident or natural disaster, and having a child placed in foster care in the previous 6 months increase the risk

of clinically significant depression. However, our supplemental analyses suggest a relationship between at least some of these traumas and depression.

Our second hypothesis, stating that avoidant coping would influence the relationship between traumatic events and symptoms of depression, was supported for childhood sexual abuse, living in a homeless shelter, physical violence in the past 12 months, childhood physical abuse, and death of a close friend or relative. Although this analysis cannot prove causality, it suggests that experiencing a trauma may contribute to an unhealthy, avoidant style of coping, which, in turn, may enhance the risk for experiencing symptoms of depression. The relationship between traumatic events, avoidant coping, and psychopathology has previously been identified in other populations (e.g., for childhood sexual abuse; Merrill, Thomsen, Sinclair, Gold, & Milner, 2001; Shapiro & Levendosky, 1999). However, as prior research has pointed out, other important influences exist beyond avoidant coping, such as attributional style (Gold, 1986), an overall disadvantaged and chaotic way of life (Bifulco, Brown, & Adler, 1991), and attachment style (Shapiro & Levendosky, 1999).

An alternative interpretation of the findings related to Hypothesis 2 is that avoidant coping is not a mechanism underlying the relationship between some traumas and symptoms of depression, but that certain behaviors inherent in avoidant coping are essentially aspects of depression. For example, spending more time alone and sleeping more than usual, both avoidant coping behaviors, are also common symptoms of depression. The fact that the relationship between certain traumas and depression is weakened when avoidant coping is included in the model suggests that

Table 7
 Weighted Logistic Regression Analysis to Determine Use of Mental Health Services in the Past 6 Months (Traumatized Sample)^a

Predictors	Bivariate logistic regression	Multiple logistic regression			
	Odds ratio	Block chi-square (<i>df</i>)	Odds ratio	(95% CI)	Change in probability associated with predictor (from a 24% base rate)
Predisposing traditional		37.36*** (8)			
Age ^b	1.81***		1.58**	(1.20, 2.07)	+2%
Education					
High school	0.57*		0.47*	(0.25, 0.91)	-8%
More than high school	0.77		0.51*	(0.27, 0.98)	-7%
Ethnicity					
Hispanic	0.68		0.79	(0.38, 1.64)	<i>ns</i>
White/other (non-Hispanic) ^c	2.30***		0.92	(0.49, 1.71)	<i>ns</i>
Living with primary partner/married	0.29***		0.45*	(0.21, 0.95)	-7%
Employed	0.29***		0.42**	(0.24, 0.73)	-9%
Shelter	5.14***		1.52	(0.79, 2.93)	<i>ns</i>
Predisposing vulnerable		16.21** (3)			
Self-esteem ^b	0.60***		0.94	(0.70, 1.24)	<i>ns</i>
Avoidant coping ^b	1.86***		0.88	(0.66, 1.18)	<i>ns</i>
Active coping ^b	1.86***		1.85***	(1.37, 2.50)	+3%
Traditional and vulnerable enabling		3.82 (3)			
Competing needs (food, shelter)	2.89***		1.39	(0.76, 2.56)	<i>ns</i>
Inability to access medical care	3.03***		1.07	(0.58, 1.98)	<i>ns</i>
Assistance from social worker	3.31***		1.56	(0.91, 2.68)	<i>ns</i>
Traditional and vulnerable need		60.62*** (6)			
Diagnosis of depression past 12 mos.	6.07***		2.22*	(1.13, 3.34)	+8%
Overall psychological distress ^b	0.42***		0.75†	(0.53, 1.05)	<i>ns</i>
PTSD symptoms ^b	2.21***		1.41**	(1.09, 1.83)	+2%
Quality of life ^{b,d}	0.54***		0.72*	(0.55, 0.95)	-2%
Diagnosis of panic disorder (lifetime)	4.94***		1.60†	(0.92, 2.80)	<i>ns</i>
Mania/psychosis (lifetime)	10.80***		3.48***	(1.84, 6.58)	+16%

Note. PTSD = posttraumatic stress disorder; CI = confidence interval; *ns* = nonsignificant ($p < .05$); mos. = months.
^a Experienced a trauma that placed them at risk for symptoms of depression (i.e., physical violence past 12 months, childhood physical abuse, childhood sexual abuse, injury or death of a friend or relative, and/or a history of homelessness). ^b Converted to *z* scores ($M = 0, SD = 1$). ^c Defined as non-Black and non-Hispanic. ^d Assessed at follow-up; other variables assessed at baseline.
 † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

perhaps the avoidant behavior component of depression is the one that is most strongly influenced by traumatic events.

We found partial support for our third hypothesis. In accordance with our prediction, active coping was a predictor of mental health service seeking among women who had experienced a trauma that placed them at risk for experiencing symptoms of depression. Traumatized women who used a proactive, problem-approaching style of coping were more likely to seek treatment for their psychological problems. However, contrary to our predictions, avoidant coping did not influence mental health service seeking. Compared with other variables examined, active coping turned out to be as important as age, PTSD symptoms, and quality of life in determining mental health service seeking. Level of education, not living with a primary partner and/or being unmarried, unemployment, diagnosis of depression in the past 12 months, and diagnosis of mania or psychosis were associated with higher changes in the probability of seeking mental health services. The finding that a possible psychiatric diagnosis, such as depression, PTSD, panic disorder, mania, or psychosis, predicted mental health service seeking may indicate that individuals with these conditions have the strongest connections to the mental health system. Surprisingly, coping was significantly more important than the enabling variables we examined (e.g., inability to access medical care, assistance from a social worker), which did not predict mental

health service seeking in our multivariate model. However, this finding does not imply that enabling variables are not important among indigent women per se. Instead, this may highlight a certain feature of our subsample, that is, that these traumatized women may have been relatively well connected within the social service system. For example, over 80% of women stated that they had health insurance (mostly through Medi-Cal/Medicaid, a combined federal and state health insurance program for low-income families or individuals, or another public program) and a regular source of health care. More than 40% had received assistance from a social worker during the past 6 months. This may have rendered classic barriers, such as the lack of health insurance and the absence of a regular health care source, less important in determining mental health service use. Given this particular context, women's psychological resources, such as adaptive coping strategies, as well as their level of psychological need, are perhaps more important predictors of mental health service.

Our findings have implications regarding the policies and psychosocial treatments aimed at traumatized homeless women. Because a traumatized woman's coping style may be related to her current mental health, programs targeting this particularly vulnerable subgroup within the larger population of indigent women may be enhanced by the inclusion of training in adaptive coping skills. Modifying coping strategies may ameliorate some of the negative impact of

certain traumatic experiences, such as childhood sexual abuse. Our results also suggest that when certain structural variables are in place (e.g., housing, connection to homeless shelters), skills training in proactive coping skills could potentially enhance mental health service use among at-risk women, particularly among those whose subsistence needs have been met. Increasing the level of a traumatized woman's active coping skills from one standard deviation below average to one standard deviation above average would result in an increase in utilization from 21% to 27%. Enhancing active coping for all women to this extent could potentially increase total mental health service utilization by one quarter.

Overall, our findings emphasize the urgency of preventing child abuse and other traumatic events. Initiatives that decrease trauma exposure may ultimately have a greater impact in terms of reducing psychopathology among homeless and low-income housed women than treating maladaptive coping approaches that contribute to symptoms of depression. Our results also highlight the importance of programs to reduce homelessness. Findings from other studies have suggested that good quality or stable housing may be protective against poor mental health (Evans, Wells, Chan, & Saltzman, 2000) and victimization by physical and sexual violence (Wenzel et al., 2004). Because living in a shelter increased the risk for experiencing symptoms of depression compared with living in low-income housing, providing women with housing may, among other desirable outcomes, be a way to lower the risk for depression. Ideally, strategies for reducing depression should also address the range of additional problems that are common among impoverished women, such as substance use and disorder and HIV risk behavior (Wenzel et al., 2004). This would be consistent with the growing consensus that indigent women have several overlapping needs that should be managed in comprehensive programs (Goldberg, 1995).

Future research could improve the current study by using a more extensive assessment of depression, perhaps by incorporating diagnostic instruments rather than screening tools. In addition, it is important to investigate, in a longitudinal manner, the impact of traumatic events on other mental health symptoms, especially PTSD, other anxiety disorders, and overall adaptive functioning. Furthermore, our sample of Los Angeles County sheltered and low-income housed women presents some limits on the generalizability of our findings. The pattern of findings that emerged in this study may differ for other groups, such as homeless women living on the streets and impoverished women living in other geographical settings.

This study contributes to the literature on trauma among homeless individuals by illustrating the diversity of traumatic experiences in sheltered homeless and low-income housed women's lives. Two important strengths of this study are its use of a longitudinal methodology in some of our analyses and a probability sample of sheltered homeless and low-income housed women. In addition, with its focus on the relationship among trauma, coping, depression, and mental health service seeking, it investigated issues that have so far received only scarce attention in this population.

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Received March 29, 2004

Revision received December 2, 2004

Accepted December 3, 2004 ■