

Factors Associated With Mental Health Service Use in Urban, Impoverished, Trauma-Exposed Adults

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This study utilized the Expanded Behavioral Model of Health Service Use Among Vulnerable Populations to investigate disparities in mental health care use among a community sample of urban, impoverished, trauma-exposed adults. Self-report questionnaires were completed by 135 adults with a lifetime history of traumatic stress exposure. Results suggested approximately 20% of the sample were receiving mental health services, and these individuals were primarily getting services at outpatient mental health facilities. Social support, positive attitudes toward treatment seeking, and occupational disability were significantly associated with current mental health service use. Logistic regression analyses indicated that after controlling for significant covariates, occupational disability was the only need variable that predicted current mental health service utilization (OR = 1.25, 95% CI = 1.08 to 1.45, $p < .01$). Improving attitudes toward treatment seeking as well as identifying occupational difficulties may be important avenues for improving willingness to seek care and decreasing disparities in care for trauma-exposed adults. Implications for mental health policy and practice are discussed.

Keywords: mental health service use, disparities, poverty, trauma-exposed, community

Disadvantaged inner city residents are at high risk for exposure to traumatic events and are susceptible to trauma-related mental health difficulties such as posttraumatic stress disorder (PTSD), depression, and generalized anxiety disorder (Alim, Charney, & Mellman, 2006; Brewin, Andrews, & Valentine, 2000; Ghafoori, Barragan, Tohidian, & Palinkas, 2012; Gillespie et al., 2009; Kelly, Merrill, Shumway, Alvidrez, & Boccillari, 2010). Traumatized individuals in general are unlikely to seek mental health services (e.g., Amaya-Jackson et al., 1999; Jaycox, Marshall, & Schell, 2004), and this is particularly true for impoverished residents of urban, economically disadvantaged areas (Gary, 2005; Roberts, Watlington, Nett, & Batten, 2010; Chow, Jaffee, & Snowden, 2003). Although a growing body of research has investigated disparities in mental health care utilization following a traumatic event, few studies have focused on impoverished community samples, and the literature has produced inconsistent results (Gavrilovic, Schutzwahl, Fazel, & Priebe, 2005). Kilbourne, Switzer, Hyman, Crowley-Matoka, and Fine (2006) stated that health disparities should include vulnerable populations, and for the purposes of this research, this is defined as a group that has faced discrimination as a result of underlying differences in social status that may lead to potential gaps in mental health care. The

aim of the current study is to replicate and extend prior research by investigating determinants of mental health service use in a culturally and racially diverse vulnerable group: urban, impoverished, trauma-exposed adults.

The Expanded Behavioral Model of Health Service Use Among Vulnerable Populations (EBMVP; Gelberg, Andersen, & Leake, 2000) may facilitate our understanding of mental-health-seeking behavior of vulnerable groups and provides a conceptual framework for the study presented in this application. Vulnerable populations include immigrants, those with mental health diagnoses, victims of violence, or impoverished persons (Aday, Lee, Spears, & Chung, 1993). The original Behavioral Model, which has been widely used for investigating service use, represents mental health care utilization as the end product of complex interactions among *traditional* predisposing (e.g., age, gender, race/ethnicity, education), enabling (e.g., health insurance, income, social support), and need characteristics (e.g., symptom severity level, level of functional impairment) (Anderson, 1995). The EBMVP distinguishes between *traditional* and *vulnerable* predisposing, enabling, and need factors. The premise of this model is that obtaining mental health services may have low priority when people experience other stressors of life and daily living (Gelberg et al., 2000). The EBMVP considers certain groups of individuals as particularly vulnerable; therefore, it takes into account *vulnerable* factors that may influence service use. The vulnerable domains are characterized as follows: predisposing vulnerable domain includes years in United States, attitudes regarding mental health resources, and victimization and trauma history; the enabling vulnerable domain includes receipt of public benefits; the need vulnerable domain is similar to the traditional need domain and includes perceived mental health status, occupational disability, social disability, and family disability (Gelberg et al., 2000).

While several studies indicate the most important factor associated with mental health service use is a higher level of perceived

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need, predisposing and enabling variables may also influence who actually seeks and receives treatment (Fikretoglu, Brunet, Schmitz, Guay, & Pedlar, 2006; Koenen, Goodwin, Struening, Hellman, & Guardino, 2003; Fontana & Rosenheck, 1995; Sayer, Clothier, Spont, & Nelson, 2007). Some studies suggest that individuals who are White, female, have a higher education level, or who have increased social support report higher mental health service utilization (Boscarino, Adams, & Figley, 2004; Elhai, Patrick, Anderson, Simons, & Frueh, 2006; Gavrilovic et al., 2005; Jaycox et al., 2004; Lewis et al., 2005; Ortega, Chavez, Inkelas, & Canino, 2007; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011; Ullman & Brecklin, 2002). Individuals who have experienced more traumas or assaultive trauma have been found to be more likely to seek mental health care than those who report nonassaultive traumas, regardless of gender or ethnicity (Sorenson & Siegel, 1992). PTSD, depression, and anxiety have been found to be associated with higher mental health service use in trauma-exposed groups (Elhai & Simons, 2007; Lewis et al., 2005; Rayburn et al., 2005). Functional impairments, such as impairments in occupational, social, and family life, are common among individuals with traumatic stress exposure (Westphal et al., 2011), and may be an important determinant of mental health service use. A few studies to date have reported increased functional impairment and use of health services by trauma victim populations (Freedy, Resnick, Kilpatrick, Dansky, & Tidwell, 1994; Golding, 1994; Kimerling & Calhoun, 1994). However, these studies did not assess the relationship between functional impairment and current mental health service use. What remains unclear is whether increased need influences mental health service use in impoverished individuals independent of important predisposing and enabling factors.

Another factor that has received little attention but may be important with respect to understanding why vulnerable trauma survivors do or do not seek out needed mental health services is attitudes toward seeking mental health treatment. In the wider body of mental health service research, more positive attitudes about mental health treatment have been associated with greater mental health service use (Cleary, Mechanic, & Greenley, 1982; Leaf, Bruce, Tischler, & Freeman, 1988; Lin & Parikh, 1999). In trauma samples, however, the literature is sparse and mixed. A few studies have found that negative attitudes regarding mental health services do not serve as a barrier to engaging in professional mental health treatment in veterans (Rosen et al., 2011; Sayer et al., 2009), whereas other research has found support for the association between positive mental health treatment attitudes and treatment use (Elhai & Simons, 2007). Maulik, Eaton, and Bradshaw (2010) suggested attitudes may serve as a possible mediator of mental health service use among those who have need. It is possible that when vulnerable, trauma-exposed adults experience increased mental health problems, their attitudes toward help seeking will influence their decision to seek and engage in professional help.

The aim of the current study was to utilize the EBMVP to further understand the influence of traditional and vulnerable factors on mental health service use in an impoverished, diverse, community sample of urban, trauma-exposed adults. We examined the rates of mental health service utilization, the types of mental health service used, the reasons for not using services, and the relationship between traditional and vulnerable predisposing, enabling, and need factors and mental health service use. Based on

previous research and theory, we hypothesized that (a) predisposing factors, specifically age (older), race/ethnicity (White), education (higher), gender (female), years in the United States (higher), and a more positive attitude toward mental health treatment seeking would be associated with current utilization of mental health services; (b) enabling factors, such as insurance coverage (yes), income (higher), and receipt of public benefits (none) will be associated with current utilization of mental health services; (c) trauma characteristics, such as assaultive trauma and higher number of traumas will be associated with current utilization of mental health services; and (d) need factors, such as increased symptom severity of PTSD, GAD, or depression as well as increased functional impairment, will be associated with current utilization of mental health services. We also explored the following: (1) whether need factors would be predictive of current utilization of mental health services after controlling for significant predisposing and enabling variables; and (2) whether positive attitudes toward help seeking would serve as a mediator in the relationship between need and current utilization of mental health services.

Method

Participants and Procedure

This study represents the baseline data from a larger study investigating the efficacy of one session of psychoeducation on increasing mental health service use in trauma-exposed individuals. Participants were recruited from an urban community health clinic in southern California. Between August, 2011 and May, 2012 every adult seeking health-related services at the clinic was offered a flyer upon check-in at the clinic that briefly described the study. If the individual was interested in knowing more about the study, front office personnel referred the prospective participant to a research staff member who screened the individual for possible inclusion in the study. A script was used to screen individuals for inclusion/exclusion criteria. All participants met the criteria for the definition of a vulnerable population, meaning they self-identified as one or more of the following: an immigrant, an individual with a history of mental illness, or a victim of violence. Moreover, all participants in this study reported an income level at or below the United States Census Bureau (2013) guidelines for poverty level. Eligible participants were at least 18 years of age, English speaking, and had experienced or witnessed any lifetime traumatic event that involved actual or threatened death or serious injury or threat to the physical integrity of others. To be considered for the study, the individuals must have responded to the traumatic event with fear, helplessness, or horror (*Diagnostic and Statistical Manual of Mental Disorders IV-R [DSM-IV-R]* Criteria A1 and A2 of PTSD; American Psychiatric Association [APA], 1994). Individuals were excluded from study participation if they were medicated for bipolar disorder, had received a diagnosis of schizophrenia, had suicidal or homicidal ideation within 1 year of study participation, had been hospitalized in the previous year for psychiatric issues, had issues with substance abuse or dependence within 3 months of study participation, or reported cognitive impairment. The rationale for the inclusion and exclusion criteria was based on previous studies of traumatized samples (Rothbaum et al., 2008) that utilized these criteria to ensure patient safety. Specifically, we included individuals that may have benefitted from trauma-focused

treatment and may not be harmed by a single session of psychoeducation. Of the 291 people who were approached and expressed interest for the study, 155 did not meet inclusion/exclusion criteria for the study and did not participate. Reasons for not meeting inclusion/exclusion criteria included: no trauma exposure, diagnosis of bipolar disorder, diagnosis of schizophrenia, suicidal or homicidal ideation, substance abuse within the past 3 months, mental health hospitalization within the prior year, and did not wish to participate. One hundred and 36 individuals (46.7%) met eligibility criteria and consented to participate. Of these, 135 individuals provided sufficient data to comprise the analytic sample for the current report. Participants received a \$5.00 noncash incentive (gift card to local store) for participation.

Measures

Table 2 depicts the predisposing and enabling variables according to the EBMVP, and Table 4 depicts the need variables according to the EBMVP. The outcome variable in this study was current utilization of mental health services. Current utilization of mental health services was assessed with the following question: "Are you receiving counseling/mental health treatment at this time?" (yes/no). This question served as the primary outcome measure. In addition, in order to further understand types of mental health services used as well as reasons for not using mental health services, the participant was asked the following additional questions related to current utilization of mental health services: (a) "If yes, where are you getting mental health treatment?" (prompt to describe type of mental health treatment); and (b) "If no, what are the reasons: (please check all that apply): (1) Lack of time, (2) Lack of money, (3) Lack of transportation, (4) I do not believe it will help me, (5) Other: Reason: (prompt to describe reasons for not using mental health services).

The predictor variables in this study included both traditional and vulnerable predisposing, enabling, and need variables. A history form was used to obtain information regarding the following predisposing variables: age, gender, race/ethnicity (Black, White, Hispanic, Other), level of education (no high school diploma, high school graduate, more than high school diploma), and years in the United States. A history form was also utilized to gather information on the following enabling variables: health insurance coverage (any, none), household income (less than \$6,000.00/year, \$6,000.00-\$11,999.99/year, \$12,000.00-\$35,999.99/year), social support (friend, spouse/partner, family, other, none; this was dichotomized to any or none), and receipt of public benefits (Medicare, Medicaid, other government program, none; this was dichotomized to any or none).

The Attitudes Toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF; Fischer & Farina, 1995) is a 10-item self-report survey of attitudes toward seeking mental health treatment, and this was used to gather information about the vulnerable predisposing factor of attitude toward seeking help. Participants rate their attitudes on each item by responding 0 (*disagree*) to 3 (*agree*). Criterion validity has been demonstrated, and internal consistency ranges from .77 to .84 with college students and medical patients (Elhai, Schweinle, & Anderson, 2008; Fischer & Farina, 1995). A total score is derived by summing items (reverse scoring five items), and higher scores indicate

a more positive attitude toward treatment (Cronbach's alpha = .79).

The Life Events Checklist (LEC; Gray, Litz, Hsu, & Lombardo, 2004) is a 17-item scale assessing exposure to various types of common traumatic events, and this was used to gather information about the vulnerable predisposing factor of trauma exposure. The utility of the LEC in assessing exposure to trauma has been previously demonstrated (Gray et al., 2004). Participants reported whether or not they had experienced the traumatic event (0 = *happened to me*, 1 = *witnessed it*, 2 = *learned about it*, 3 = *not sure*, 4 = *does not apply*). The following three questions on the LEC were used to create an "assault" variable: lifetime history of physical assault, assault with a weapon, sexual assault (Glover, Olfson, Gameroff, & Neria, 2010). If a participant endorsed any of these three questions with a positive response of "[It] happened to me" or "[I] witnessed it," he or she was considered to have a lifetime history of assault. Lifetime history of nonassaultive trauma was determined if a participant endorsed any of the following questions with a positive response of "[It] happened to me" or "[I] witnessed it": natural disaster; fire or explosion, serious accident at work, home, or during recreational activity; exposure to toxic substance; other unwanted or uncomfortable sexual experience; combat exposure; captivity; life threatening illness or injury; life threatening illness or injury of a family member living with you; sudden violent death; sudden unexpected death of someone close to you; serious injury, harm, or death you caused to someone else; other transportation accident; any other very stressful event or exposure. For this study, we identified assaultive and nonassaultive trauma types and the number of traumas reported by the participant for 17 events.

Need characteristics, specifically PTSD, depression, and GAD symptom severity and occupational, social life, and family life/home responsibility disability were assessed with the following measures:

1. The PTSD Checklist-Civilian version (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item self-report PTSD symptom instrument that has been shown to have good internal consistency, strong correlations with other PTSD scales, and high diagnostic efficiency (Weathers et al., 1993). Respondents were asked to reflect on their most distressing traumatic event and rate the extent to which they have been bothered by each symptom using a 5-point Likert scale (1 = *not at all* to 5 = *extremely*). Items were summed to yield a total score that serves as a measure of PTSD (Cronbach's alpha = .93) symptom severity (e.g., Fiszman et al., 2008). In addition, following Blanchard, Jones-Alexander, Buckley, and Forneris (1996), we used a cutoff score of 44 and over to define probable PTSD.

2. The Brief Symptom Inventory-18 (BSI-18; Derogatis, 2001) is a self-report measure of psychological distress that has been widely used as a psychiatric screening tool in clinical settings and epidemiological studies. Respondents reported how much each symptom or problem distressed or bothered them during the past 2 weeks on a 5-point scale from *not at all* (0) to *extremely* (4). The BSI-18 depression subscale score was computed by taking the average of the responses to the individual symptoms. In the current analysis, raw scores were converted to *T* scores using normative data from community samples (Cronbach's alpha = .88 for *T* scores). *T* scores of 63 or greater are indicative of clinical "case-

ness" (Derogatis, 2001; Zabora, Brintzenhofeszoc, Curbow, Hooker, & Piantadosi, 2001).

3. The Generalized Anxiety Disorder-7 (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006) is a 7-item brief screening measure of GAD that has good internal consistency and test-retest reliability. Response options are *not at all*, *several days*, *more than half the days*, and *nearly every day*. GAD-7 scores range from 0–21 and reflect anxiety severity (Cronbach's alpha = .91). A diagnostic cutpoint of 10 or greater was used in this study to indicate probable GAD (Spitzer et al., 2006).

4. The Sheehan Disability Scale (SDS; Sheehan, 1983; Leon, Shear, Portera, & Klerman, 1992) includes three 10-point subscales that measure impairment in the following areas of a patient's life: occupational, social life, and family life/home responsibility disability. Respondents demarcate their functioning on a 10-point scale (0 = *not at all* to 10 = *extremely*) with higher scores reflecting increased disability.

Analytic Strategy

Frequencies of rate of mental health service utilization, types of mental health service used, and reasons for not using mental health services were calculated. Chi-square tests for comparing categorical variables and two sample *t* tests for comparing means of continuous variables were conducted to compare participants who were currently receiving mental health services and those not receiving mental health services on predisposing, enabling, and trauma characteristics. Binary logistic regressions were conducted to determine the likelihood of mental health service utilization from each need variable with odds ratios (OR) and 95% CI reflecting the increased or decreased likelihood of mental health service utilization as a function of need factors. The logistic regression analyses proceeded in two steps. In the first model we estimated the association between each need variable and current use of mental health services without other variables in the equations. In the second model we controlled for significant predisposing and enabling variables in order to understand the predictive power of need factors on current service utilization. All tests were conducted with Statistical Package for the Social Sciences Version 18 (SPSS, 2009). The significance level for all statistical tests was set at 0.05.

Mediation of the effect of need variables upon current mental health service use (outcome) by attitudes toward help seeking was assessed according to the following criteria: a) the need variable was associated with the mediator, b) the exposure was associated with the outcome in the absence of the mediator, c) the mediator had a significant unique effect on the outcome, and d) the effect of the need variable on the outcome was attenuated upon the addition of the mediator to the model. Sobel-Goodman tests were used to quantify the degree of mediation and to test for statistical significance (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002).

Results

Mental Health Service Utilization

Approximately 20% ($n = 27$) of the sample reported currently using some form of mental health service, and approximately 80% ($n = 108$) of the sample reported not receiving mental health

services at the time of the study. Most individuals who reported currently receiving mental health services reported receiving outpatient services at a community mental health facility (55.6%; $n = 15$), or outpatient services at a substance abuse treatment facility (29.6%; $n = 8$). One individual (3.7%) reported receiving services by a therapist in independent practice, and three individuals (11.1%) declined to state where they were receiving services. A total of 108 individuals reported not using services, and perceived barriers to mental health service use are listed in Table 1. Some individuals reported more than one reason for not using services ($M = 1.1$; $SD = 0.84$), and some individuals reported "other" reasons for not using mental health services ($n = 49$; 45.4%). We asked individuals who reported other reasons for not using mental health services to specify what the other reasons were, and responses included: lack of perceived need ($n = 20$), unsure/no reason ($n = 22$), previous bad experience ($n = 2$), fear ($n = 2$), and will get mental health service soon ($n = 3$).

Predisposing and Enabling Characteristics and Mental Health Service Utilization

Table 2 compares individuals who were currently receiving mental health services and those not receiving mental health services on predisposing and enabling characteristics. The sample was predominantly middle aged, male, Black, high school educated, United States (U.S.) born, no health insurance, very low income, and exposed to multiple traumas; however, none of these factors were significantly associated with mental health service use (see Table 2). Frequencies of specific traumas the sample experienced are reported in Table 3. The two groups significantly differed on attitude toward seeking help and social support, $t(1) = 2.3$, $p < .05$ and $\chi^2(1 = 9.8)$, $p < .05$, respectively; see Table 2). In the bivariate logistic regression analyses of the association between need variables and mental health service use, we adjusted for these two significant covariates.

Mental Health Need and Mental Health Service Utilization

Approximately 54.8% of the sample ($n = 74$) met criteria for screen positive PTSD, 54.8% ($n = 74$) met criteria for screen positive depression, and 47.4% ($n = 64$) met criteria for screen positive GAD. Bivariate logistic regression analyses predicting

Table 1
Barriers to Mental Health Services Use Among 108 Vulnerable Trauma Survivors

Perceived barrier	% (n)*
Lack of money	34.3 (37)
Does not believe it will help	22.2 (24)
Lack of time	21.3 (23)
Lack of transportation	18.5 (20)
Lack of perceived need	18.5 (20)
Unsure/no reason	20.4 (22)
Previous bad experience	1.9 (2)
Fear	1.9 (2)
Will get mental health services soon	2.8 (3)

Note. * Participants could endorse more than one perceived barrier.

Table 2
Predisposing, Enabling, and Trauma Characteristics by Mental Health Service Use

	Whole sample ^a N = 135	Current mental health service use (n = 108)		Test (n = 27)
Traditional predisposing characteristics				
Age, M ± SD	41.7 ± 12.7	41.5 ± 12.8	42.3 ± 12.5	t(1) = 0.3
Gender, male	61.2 (82)	64.5 (69)	48.1 (13)	χ ² (1) = 2.4
Female	38.8 (52)	35.5 (38)	51.9 (14)	
Race/Ethnicity, White	29.1 (39)	27.1 (29)	37.0 (10)	χ ² (3) = 2.7
Black (non-Hispanic)	52.2 (70)	53.3 (57)	48.1 (13)	
Hispanic	13.4 (18)	13.1 (14)	14.8 (4)	
Other	5.2 (7)	6.5 (7)	0 (0)	
Level of education, No high school diploma	27.6 (37)	28.0 (30)	25.9 (7)	χ ² (2) = 0.6
High school graduate	34.3 (46)	32.7 (35)	40.7 (11)	
Some college or more	38.1 (51)	39.3 (42)	33.3 (9)	
Vulnerable predisposing characteristics				
Years in United States, M ± SD	41.1 ± 13.0	40.9 ± 13.2	42.3 ± 12.5	t(1) = 0.5
Assaultive traumas ^b , M ± SD	1.9 ± 1.0	1.8 ± 1.1	2.1 ± 0.8	t(1) = 1.1
Nonassaultive traumas ^b , M ± SD	5.5 ± 2.8	5.4 ± 3.0	5.8 ± 2.2	t(1) = 0.5
Number of traumas ^b , M ± SD	7.4 ± 3.4	7.3 ± 3.6	7.9 ± 2.7	t(1) = 0.8
Traditional enabling				
Health insurance, Yes	3.7 (5)	3.7 (4)	3.7 (1)	χ ² (1) = 0.0
No	96.3 (129)	96.3 (103)	96.3 (26)	
Annual Household income, <\$6,000	62.6 (82)	63.5 (66)	59.3 (16)	χ ² (2) = 0.2
\$6,000–\$11,999	23.7 (31)	23.1 (24)	25.9 (7)	
\$12,000–\$35,999	13.7 (18)	13.5 (14)	14.8 (4)	
Social support, Yes	72.2 (96)	66.0 (70)	96.3 (26)	χ ² (1) = 9.8**
No	27.8 (37)	34.0 (36)	3.7 (1)	
Vulnerable Enabling				
Receipt of public benefits, Yes	47.2 (59)	43.6 (44)	62.5 (15)	χ ² (1) = 3.1
No	52.8 (66)	56.4 (57)	37.5 (9)	

^a For some characteristics, N is less than 135 due to missing data. ^b Traumatic event exposure was positive if the event “happened to me” or “[I] witnessed it.”

* $p < .05$. ** $p < .01$.

current utilization of mental health services indicated that only increased occupational disability severity significantly predicted current utilization of mental health services (OR = 1.20, 95% CI = 1.05 to 1.36, $p < .01$; Table 4). PTSD, depression, and GAD symptom severity were not significantly associated with current utilization of mental health services. Moreover, social life disability

and family life/home responsibility disability was not significantly associated with current utilization of mental health services. After adjusting for significant covariates, participants with increased occupational disability severity continued to be more likely to report current utilization of mental health services (OR = 1.25, 95% CI = 1.08 to 1.45, $p < .01$).

Table 3
Trauma Characteristics of Sample

Traumatic Events	% (n)*
Natural disaster	51.1 (69)
Fire/Explosion	31.1 (42)
Serious accident	59.3 (80)
Exposure to toxic substance	20.7 (28)
Physical assault	81.5 (110)
Assault with weapon	62.2 (84)
Sexual assault	43.0 (58)
Other unwanted sexual experience-	35.6 (48)
Combat exposure	12.6 (17)
Captivity	20.0 (27)
Life threatening illness/injury	40.7 (55)
Life threatening illness/injury of family member	57.0 (77)
Sudden, violent death (i.e. suicide, homicide)	43.0 (58)
Sudden unexpected death of someone close	76.3 (103)
Serious injury, harm, or death you caused	20.0 (27)
Other transportation accident	57.8 (78)

* Participants could endorse more than one trauma.

Mediating Effect of Attitudes Toward Help Seeking

We explored whether positive attitudes toward help seeking would serve as a mediator in the relationship between need and current utilization of mental health services. Since occupational disability was the only need variable that was significantly associated with current utilization of mental health services, we only tested this variable. The Sobel-Goodman Mediation Test showed that: a) occupational disability was significantly associated with the mediator variable, attitudes toward help seeking ($B = 0.43$, $SE = 0.14$, $CI = 0.16$ to 0.71 , $p = .002$); b) the predictor variable (occupational disability) significantly predicted the outcome variable (current utilization of mental health services) in another equation (OR = 1.20, 95% CI = 1.05 to 1.36, $p = .008$); and c) the predictor variable (occupational disability) significantly predicted the outcome variable (current utilization of mental health services) in the presence of the mediator (attitude toward mental health service) (for predictor variable, OR = 1.18, CI = 1.03 to 1.35, $p = .018$). The mediating effect of attitudes toward help seeking on the association between occupational disability and

Table 4
Need Characteristics by Current Mental Health Service Utilization

Need variables	Whole sample ^a (<i>N</i> = 135) mean ± <i>SD</i>	Current mental health service utilization		Odds ratio (95% CI)	
		No (<i>n</i> = 108) mean ± <i>SD</i>	Yes (<i>n</i> = 27) mean ± <i>SD</i>	Crude odds ratio	Adjusted odds ratio ^b
PTSD symptom severity	46.9 ± 17.2	46.4 ± 17.5	49.1 ± 15.9	1.01 (0.99, 1.04)	1.02 (0.99, 1.05)
Depression symptom severity	60.7 ± 11.1	60.8 ± 11.3	60.3 ± 10.7	1.00 (0.96, 1.04)	1.01 (0.97, 1.06)
GAD symptom severity	9.7 ± 6.4	9.4 ± 6.6	10.9 ± 5.5	1.04 (0.97, 1.11)	1.07 (1.00, 1.16)
Occupational disability	5.4 ± 3.9	5.0 ± 3.9	7.4 ± 3.5	1.20 (1.05, 1.36)**	1.25 (1.08, 1.45)**
Social life disability	5.4 ± 3.5	5.2 ± 3.6	6.1 ± 3.3	1.08 (0.95, 1.22)	1.14 (0.99, 1.31)
Family life/Home responsibility disability	5.3 ± 3.8	5.2 ± 3.8	5.7 ± 3.9	1.03 (0.92, 1.16)	1.09 (0.96, 1.24)

^a For some characteristics, *N* is less than 135 due to missing data. ^b Adjusted for covariates (attitudes towards seeking help, social support).

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

current utilization of mental health services was not significant (Sobel *z* = 1.31, *p* = .095; Goodman *z* = 1.37, *p* = .085).

Discussion

This study utilized the EBMVP to investigate determinants of current utilization of mental health services among persons who experienced traumatic events as well as a vulnerable population designation. According to the Institute of Medicine's report (Smedley, Stith, & Nelson, 2002), which defines disparity as any difference in health care quality not due to differences in health care needs, disparities may be caused by social factors including inequalities in access to providers. Moreover, culture may influence receipt of care, including how individuals from a particular culture manifest their symptoms, their support system, their coping styles and attitudes, and their willingness to seek treatment (Whiteley, Brown, Swenson, Kapogiannis, & Harper, 2013). Consistent with the literature, this study found that low-income adults who face a multitude of stressors and increased risk for trauma and violence often do not receive mental health care despite need (Santiago, Kaltman, & Miranda, 2013).

Consistent with past studies, our findings indicated that there appear to be disparities in mental health service use, particularly among urban, impoverished, trauma-exposed individuals with less social support and more negative attitudes toward help seeking (Elhai et al., 2006; Elhai & Simons, 2007). Our results indicated high need among study participants, with nearly 55% of the sample screening positive for PTSD and depression, and nearly 47% of the sample screening positive for GAD (Davis, Ressler, Schwartz, Stephens, & Bradley, 2008; Gillespie et al., 2009; Jaycox et al., 2004). Also similar to past studies, only 20% of our study participants reported current utilization of mental health services, indicating low use relative to need (Davis et al., 2008; Gavrilovic et al., 2005; Jaycox et al., 2004). A high frequency of our sample reported lack of money as a barrier to mental health service use, which indicates economic disadvantage is an important barrier to treatment use in this population. Our results also suggest that overall differences in relation to current utilization of mental health services among impoverished individuals were negligible in most areas except occupational disability, where inequality suggests increased mental health service use.

A few characteristics described in the EBMVP Model were found to be important in understanding mental health service use

in our vulnerable sample. Consistent with prior research, social support, specifically from friends, significant others, family, or others, was associated with current utilization of mental health services, indicating social support is important to facilitating treatment access in vulnerable trauma-exposed adults (Arria et al., 2011). Perhaps an individual who provides social support may serve as a facilitator to assist an individual with trauma-related distress to locate mental health resources and begin treatment. Some research suggests this may depend on "weak ties," defined as superficial relationships, possibly with a number of people, compared to "strong ties," defined as intense relationships, possibly with one or a few people (Arria et al., 2011). It is possible that weak ties may promote the use of mental health service use by having a referral function, whereas strong ties may have a stress reduction function and not promote mental health service use (Arria et al., 2011). The current study did not assess the strength of ties within identified social support networks, and future research using prospective data may want to clarify the specific role of social support persons in accessing mental health treatment.

Consistent with both theoretical (Gelberg et al., 2000) and empirical evidence (Elhai et al., 2006; Elhai & Simons, 2007; Rickwood, Deane, Wilson, & Ciarrochi, 2005), our study found that positive attitudes toward treatment seeking were significantly associated with current mental health service utilization. This finding is important, considering treatment attitudes may be amenable to change. Negative attitudes toward treatment use may reflect a lack of perceived need. Indeed, 20 of 108 participants in our study who were not in treatment specifically reported lack of perceived need. Education and outreach may help to change attitudes and beliefs toward help seeking, which may improve treatment use among those who need treatment. An important question that remains unanswered and warrants further study is whether attitudes toward treatment seeking is a result of cultural differences in preferences or perceptions regarding mental health services. Low income and ethnic/racial minority individuals may be hesitant to engage in mental health care because of fear or mistrust due to historical persecution and racism (Santiago et al., 2013). Due to the cross-sectional nature of our research, it is important for future prospective studies to further assess the impact of attitudes on treatment use.

Past research with trauma survivors has indicated that assaultive trauma, greater number of traumas, PTSD, depression, and anxiety

are associated with mental health service use; however, our data do not show significant relationships between these factors and current mental health service utilization (Gavrilovic et al., 2005; Johnson & Zlotnick, 2007). We can offer at least two plausible explanations for these findings. First, consistent with the EBMVP, it is possible that our impoverished participants may have competing obligations that contribute to minimizing the priority of mental health treatment, regardless of trauma severity, trauma type, or mental health symptoms (Davis et al., 2008; Hines-Martin, Malone, Kim, & Brown-Piper, 2003). Barriers reported by study participants not in treatment included a lack of money to pay for mental health services, a perception that mental health treatment would not help, time pressures, and transportation issues. This is consistent with research that indicates cost, lack of insurance, as well as other logistic barriers are often important difficulties that perpetuate disparities in service use in low-income groups (Santiago et al., 2013). Second, it may be possible that the EVMBP model does not accurately capture social and cultural barriers, such as stigma, the historical impact of racism, and spiritual or religious cultural beliefs, which may deter individuals from engaging in mental health care. Our findings suggest that vulnerable survivors of trauma may not be forthcoming in reporting mental health difficulties. Community mental health centers should actively screen for trauma history since this information could provide insight into treatment needs that may go unnoticed.

Our findings suggest that in our sample increased functional impairment, specifically occupational disability, was the only need factor associated with current mental health service use. Our results are consistent with a limited research base investigating occupational difficulties in trauma-exposed adults. For example, Wald and Taylor (2009) found an association between reduced employability and trauma-related emotional difficulties. In addition, PTSD treatment studies report significant unemployment rates in individuals seeking treatment (e.g., Foa et al., 2005). This finding may indicate the importance of occupational disability for trauma-exposed, impoverished urban dwellers. It is interesting that increased occupational disability was significantly more important than social support and attitudes toward treatment seeking in our multivariate model. This may mean that in impoverished communities where individuals deal with the heavy burden of accumulated trauma and elevated risk of exposure to violence (Gillespie et al., 2009; Breslau et al., 1998), those individuals suffering from occupational stress are more likely to be in treatment. More research is necessary to determine the specific role of occupational impairment in treatment seeking.

This study has several limitations that warrant cautious interpretation of the findings. First, psychiatric issues were assessed retrospectively by self-report screening instruments rather than a clinical interview. Screening instruments cannot replace a structured clinical interview and diagnosis; therefore, the external validity of our results is limited. Participants may not represent the broader population of urban, impoverished, trauma survivors, which limits the generalizability of the results. Individuals in this study were seeking health services, which may influence the higher levels of PTSD, GAD, and depression found in this study. The sample size was insufficient for comparing racial/ethnic differences. The results of this study are preliminary, rather than definitive, and need to be replicated in studies that include more precise indicators of mental health status and service use.

Conclusions

Deep gaps remain in our understanding of mental health disparities among urban, impoverished, trauma-exposed groups. Our findings have implications for mental health policy and practice. Our findings suggest that public health and mental health researchers and policymakers need to pay close attention to the low uptake of mental health services in this population. Vulnerable trauma survivors often report many barriers to seeking mental health services, including cost and the belief that it will not be helpful (Davis et al., 2008). Service providers should develop affordable, accessible, culturally appropriate mental health care for vulnerable survivors of trauma and violence, including services such as cognitive therapy, pharmacotherapy, and other supportive and vocational services. It is important for future research to carefully examine the relationship between cultural perceptions of trauma and violence and help seeking in low-income trauma survivors.

Vulnerable, trauma-exposed individuals may have a lack of awareness regarding trauma-related mental health issues. Efforts should focus on educating both patients and providers about common mental health conditions and functional impairments among trauma survivors, including occupational disability. Collecting information about occupational disability should become a routine part of data collection, similar to age, gender, and race/ethnicity. This population may benefit from outreach activities over time to reduce stigma and facilitate a connection to mental health treatment should the need arise. Proper advocacy tools, in the form of online or print informational materials or campaigns encouraging mental health services use when needed, should be developed using active involvement from patients and disseminated in the community.

Mental health care environments should be culturally appropriate and inviting to diverse trauma-exposed groups. This may occur through the physical structure and appearance of the care setting as well as through recruitment of diverse individuals to work at these settings. Care providers should be alerted to the potential disparities that may exist for impoverished trauma-exposed individuals and the many barriers to mental health treatment that these individuals experience.

Eliminating mental health disparities may include numerous policy changes that go beyond the actual provision of services, such as attention to the cost of services, education regarding the potential benefit of services, transportation, and childcare. Future research is necessary to examine the cultural and structural factors that may influence trauma-exposed patients' utilization of mental health care as well as provider characteristics that may contribute to disparate care.

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