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Gender Disparities in the Mental Health of Urban Survivors of Trauma

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Abstract

Women who experience traumatic events are at higher risk for mental health problems compared to men; however, gaps remain in our understanding of this disparity. A sample of 170 urban adults completed self-report measures. Women were significantly more likely to experience sexual assault and domestic violence compared to men, and they were significantly less likely to experience a robbery or mugging, being threatened with a weapon, or witnessing a death or assault compared to men. Also, women were more likely than men to meet criteria for probable post-traumatic stress disorder (PTSD) and depression after controlling for covariates and trauma level. Our findings suggest a possible differential vulnerability to the development of PTSD and depressive symptoms in women.

Keywords

abuse; depression; gender disparity; PTSD; violence exposure

Studies have widely documented negative mental health consequences of trauma exposure (Franklin & Zimmerman, 2001; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Gender differences in post-traumatic stress disorder (PTSD), the most commonly studied mental health difficulty as a result of trauma exposure, have been found, with most studies indicating women have an increased risk of PTSD as a result of trauma exposure compared to men (Ford, 2008; Schumm, Briggs-Phillips, & Hobfoll, 2006). Fewer studies have investigated gender differences in other common mental health reactions to trauma exposure, such as depression and generalized anxiety disorder (GAD). Moreover, the role of socioeconomic factors in gender differences in posttrauma psychiatric conditions remains unclear. The aim of this investigation is to further understand gender disparities in an urban community sample of trauma survivors.

Theories of differential exposure and vulnerability can be used to conceptualize the relationship among gender, social factors, and mental health reactions to trauma exposure

(Dohrenwend & Dohrenwend, 1969). The differential exposure hypothesis argues that women might be more likely to experience added types or amounts of trauma, which increases the risk of mental health problems; however, research on the differential exposure hypothesis has been inconsistent. A recent meta-analytic review found that women are more likely than men to experience violent traumas, particularly sexual assault, interpersonal violence, and child sexual abuse (Tolin & Foa, 2008). Men, on the other hand, might be more likely to experience trauma in the form of nonsexual assaults, witnessing death or injury, and combat or war (Tolin & Foa, 2008). The meta-analytic review conducted found gender differences in PTSD remained even after controlling for amount of trauma experienced. Moreover, type of trauma exposure did not explain the gender differences in PTSD. The findings from the meta-analytic review seem to suggest that neither trauma type nor severity of trauma fully explains increased PTSD in women compared to men.

According to the differential vulnerability hypothesis, women might experience the effects of trauma exposure differently than men. Women could be more likely to develop mental health problems after trauma exposure due to the effects of social oppression. For the purposes of this article, social oppression is defined as structural and systematic patterns of disadvantage operating through various aspects of power and affecting certain groups more than others (i.e., women, racial and ethnic minorities, or low-income individuals; Hillock, 2012; Williams, Mohammed, Leavell, & Collins, 2010). Social oppression has been found to be associated with increased mental health difficulties associated with traumatic stress exposure (Browne & Bassuk, 1997; Ford, 2011; Rayburn et al., 2005). For example, some research suggests that Black and Hispanic racial and cultural groups might experience more trauma and more negative mental health outcomes, but only in the lowest socioeconomic groups (Bryant-Davis, Ullman, Tsong, Tillman, & Smith, 2010; Ulbrich, Warheit, & Zimmerman, 1989). One study investigating gender differences in PTSD in primary care patients after the World Trade Center attacks found that increased rate of PTSD and GAD in women was related to their socioeconomic circumstances; however, the gender differences in depression in women persisted even after adjusting for socioeconomic factors (Weissman et al., 2005). The deleterious effects of being female and having a low income, low education level, or being a member of a racial or ethnic minority group combined with exposure to traumatic events could place women at increased risk for mental health problems compared to men (Kessler & Neighbors, 1986). More research is necessary to understand these relationships.

Another possible reason for differential vulnerability in women compared to men might be associated with gender differences in symptom expression. A small body of research indicates that post-traumatic reactions in women could differ from post-traumatic reactions in men (Gibbs, 1989; Tolin & Foa, 2008). Although the National Comorbidity Survey Replication (Kessler, Chiu, Demler, & Walters, 2005) did not examine posttrauma mental health, the potentially relevant results indicated that men were less likely to report anxiety or depression compared to women. Some studies indicate that trauma-exposed women are more likely to report increased depression, anxiety, and somatic complaints compared to men (Solomon, Smith, Robins, & Fischbach, 1987; Weissman et al., 2005).

The purpose of this study was to further understand the associations among gender, trauma exposure, indexes of social oppression, PTSD, GAD, and depression in a sample of trauma-exposed adults from an urban setting. On the basis of previous empirical work as discussed earlier, we hypothesized that: (a) similar to past studies, women will have a higher likelihood of childhood abuse, sexual assault, and domestic violence compared to men; and (b) women will have a higher likelihood of PTSD and depression compared to men, even after controlling for potentially confounding covariates or level of trauma exposure. We also explored the relationship between gender and probable PTSD, GAD, and depression and

whether indicators of social oppression (i.e., education, race and ethnicity, income) will moderate the relationship between gender and probable PTSD, GAD, and depression.

METHOD

Participants and Procedure

This study was conducted at three urban community health and mental health centers in Southern California. Eligible participants were English-speaking individuals over 18 years of age who had experienced, witnessed, or were confronted with any lifetime traumatic event that involved actual or threatened death, serious injury, or threat to the physical integrity of others to which the individual responded with intense fear, helplessness, or horror (*Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., text rev. [DSM-IV-TR] Criterion A1 and A2 of PTSD; American Psychiatric Association, 2000). Exclusion criteria included current psychosis, suicidal or homicidal thoughts, history of suicidal attempt or psychiatric hospitalization in the past year, or substance use in the 24 hours prior to the screening interview. Participants were recruited prior to receiving any type of mental health treatment and received a \$10 gift card to a local store for their participation. Of the 215 people who responded to the flyer and were screened for the study, 14.4% did not meet inclusion or exclusion criteria and 85.6% met eligibility criteria and consented to participate. Two trained and supervised graduate students pursuing their master's degree in marriage and family therapy gave participants the self-report questionnaires and were in the room and available for questions during administration of the questionnaires. Among the 181 completers, 170 (93.9%) provided sufficient data on the variables of interest and made up the analytic sample for this report.

Instruments

Indicators of social oppression were measured using a history form and included questions related to gender, race and ethnicity, level of education (some high school or less or high school degree or higher), and annual income level (< \$14,999/year or > \$15,000/year). The history form was also used to measure age (obtained in years). Participants self-identified their race or ethnicity in one of six categories: White, Black, Hispanic, Asian, Native American, or other. Participants who self-identified as Asian, other, or more than one race or ethnicity ($n = 11$) were excluded from the study because the sample sizes for these racial and ethnic groups were not large enough to examine differences statistically or make meaningful comparisons. Thus, the final sample consisted of Black, White, and Hispanic groups of individuals.

The Stressful Life Events Screening Questionnaire (Goodman, Corcoran, Turner, Yuan, & Green, 1998) is a 13-item self-report screening measure designed to assess lifetime exposure to a variety of traumatic events. Participants are asked whether they have experienced each of 11 events and two "catch-all" experiences. For this study, we identified both the type of trauma experienced and the number of traumas reported by the participant for 11 events, and we excluded the "catch-all" experiences.

The PTSD Checklist–Civilian version (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 ranging from 1 (*not at all*) to 5 (*extremely*). Items were summed to yield a total score that serves as a measure of PTSD symptom severity (Cronbach's $\alpha = .$

91; 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.

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 ranging from 0 (*not at all*) to 4 (*extremely*). 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 $\alpha = .93$). *T* scores of 63 or greater are indicative of clinical "caseness" (Derogatis, 2001; Zabora et al., 2001).

The Generalized Anxiety Disorder–7 (GAD–7; Spitzer, Kroenke, Williams, & Löwe, 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 to 21 and reflect anxiety severity (Cronbach's $\alpha = .87$); however, a diagnostic cutoff of 10 or greater was used in this study to indicate probable GAD (Spitzer et al., 2006).

Analytic Strategy

Chi-square tests for comparing categorical variables and *F* tests for comparing means were conducted to assess gender associations with demographic characteristics and clinical characteristics. The prevalence of probable PTSD, GAD, and depression was calculated for each gender. Demographic characteristics that differed significantly by gender were included as covariates in multivariate models examining the relationship of gender to exposure to various traumatic events as well as probable PTSD, GAD, and depression. Binary logistic regression was conducted to determine the likelihood of exposure to each trauma variable, with male gender serving as the reference category. To isolate the association between gender and each trauma variable, we also ran these regressions with covariates to reduce confounding. Binary logistic regression was also used to predict the likelihood of probable PTSD, GAD, or depression for men versus women, with odds ratios (OR) and 95% confidence interval (CI) reflecting the increased or decreased likelihood of probable PTSD, GAD, or depression status as a function of gender identification. To reduce potential confounding, we also ran these regressions with covariates. The logistic regression analyses proceeded in three steps. In the first model, we estimated the association between gender and the dependent variables (i.e., probable PTSD, GAD, or depression) without other variables in the equations. In the second model, we included significant covariates to determine if controlling for the covariates reduced gender differences in probable PTSD, GAD, or depression. In the third model, we included significant covariates and level of trauma exposure to determine if controlling for these variables influenced gender differences in PTSD, GAD, or depression. The possibility that education, race or ethnicity, or income would moderate the relationship between gender and PTSD, GAD, or depression was investigated by constructing three separate logistic regressions, one with PTSD as the dependent variable, one with GAD as the dependent variable, and one with depression as the dependent variable. Predictors for each regression included (a) gender, (b) education, (c) race or ethnicity, (d) income, (e) an interaction term of gender and education, (f) an interaction term of gender and race or ethnicity, and (g) an interaction term of gender and income. Logistic regressions were run to determine if the interaction terms were significant. All tests were conducted with Statistical Package for the Social Sciences (SPSS), Version 18. The significance level for all statistical tests was set at .05.

RESULTS

Descriptive Statistics

Table 1 compares men and women on demographic and predictor variables as well as probable PTSD, GAD, and depression. Approximately two thirds of the sample consisted of men ($n = 115$), and approximately one third of the sample consisted of women ($n = 60$). With respect to race or ethnicity, 31.8% ($n = 54$) of the sample were White, 20.6% ($n = 35$) were Hispanic, and 47.6% ($n = 81$) were Black. Approximately 78.2% ($n = 133$) of the sample reported an annual income under \$14,999 per year, and 21.8% ($n = 37$) reported an annual income greater than \$15,000 per year. Men in the sample were significantly older, predominantly Black or Hispanic, and reported a lower income level compared to the women in the sample. No significant gender difference was found in relation to education, trauma exposure, and probable PTSD, GAD, or depression.

Gender Differences in Traumatic Stress Exposure

Compared to men, women were significantly more likely to have experienced sexual assault and domestic violence (see Table 2) and less likely to have experienced a robbery or mugging, being threatened with a weapon, and witnessing death or assault. After adjusting for covariates, women were approximately 6.6 times more likely (95% CI [2.79, 15.40], $p < .001$) to have experienced sexual assault (sexual penetration or intercourse), and 4.9 times more likely (95% CI [2.18, 11.08], $p < .001$) to have experienced domestic violence (violence against a spouse or domestic partner). In addition, women continued to be less likely to experience robbery or mugging, being threatened with a weapon, and witnessing death or assault compared to men.

Relationship between Gender and Probable PTSD, GAD, and Depression

The next set of analyses examined gender differences associated with each of the mental health categories of probable PTSD, GAD, and depression (Table 3). After adjusting for significant covariates and level of trauma exposure, women were more likely to have probable depression (OR = 2.17, 95% CI [1.01, 4.66], $p < .05$) and PTSD (OR = 2.11, 95% CI [1.04, 4.37], $p < .05$). The inclusion of trauma level as a covariate was responsible for an increase in the association between gender and both probable PTSD and depression.

We tested whether interaction of racial or ethnic group status, income, or their confluence moderated the relationship between gender and probable PTSD, GAD, or depression. The relationships between gender and PTSD, GAD, and depression were not found to be statistically significant, and the interaction terms were also found to not be significant. Consequently, no moderation effects were found.

DISCUSSION

Although gender differences in exposure to traumatic events and PTSD are well established in the literature, gender differences among traumatized urban samples have been less studied. This study extends the findings of previous reports examining gender differences in trauma exposure and mental health consequences to an urban, racially and ethnically diverse, and trauma-exposed community sample. Consistent with our hypothesis, this study provides evidence that traumatized women were more likely to report experiencing various types of assault, including sexual assault and domestic violence compared to traumatized males. Women had significantly increased likelihood of probable PTSD and depression after controlling for potentially confounding covariates and level of trauma exposure. Gender differences in probable GAD were not found in this sample. A strength of our study was that we used DSM-IV-TR PTSD Criteria A1 and A2 to define significant exposure to a traumatic

event, and all of our participants met this criteria. However, the inclusion criteria increased the overall percentage of participants who met criteria for probable mental health disorders. This might have influenced the results and limits generalizability of the results.

Consistent with past studies, our results indicated that trauma-exposed women experience some significantly different traumas than trauma-exposed men (Tolin & Foa, 2008). In our sample, men tended to experience more robbery or mugging, being threatened with a weapon, and witnessing death or assault compared to women. Our findings are consistent with a large body of research that indicates women experience more sexual assault and domestic violence compared to men (Norris, 1992; Tolin & Foa, 2008) and men experience more community violence compared to women (Breslau, Wilcox, Storr, Lucia, & Anthony, 2004; Gillespie et al., 2009; Perkonig, Kessler, Storz, & Wittchen, 2000). Similar to one other study of urban adults, we did not find a significant gender difference in childhood physical abuse (Gillespie et al., 2009).

Many trauma studies suggest that women have a higher likelihood of PTSD (Tolin & Foa, 2008) and a few trauma studies suggest women have a higher likelihood of depression (Weissman et al., 2005), but the literature is not altogether conclusive (Freedman et al., 2002; Yasan, Saka, Ozkan, & Ertem, 2009). Some studies suggest that if a gender difference in PTSD exists, it might be due to women experiencing more traumatic events (Cuffe et al., 1998). Women in our sample continued to have a higher likelihood of both probable PTSD and depression after controlling for level of trauma exposure, suggesting differential exposure to traumatic events might not be fully responsible for the observed gender difference.

Our results support the differential vulnerability hypothesis. It might be possible, as Tolin and Foa (2008) suggested, that gender role expectations could be more tolerant of anxiety and depression in women as a result of traumatic event exposure. This is consistent with research that indicates women express more emotions, particularly negative emotions, compared to men (Simon & Nath, 2004). A traumatic event might exacerbate preexisting gender role expectations, resulting in differential sensitivity to post-traumatic mental health reactions in women versus men. Alternatively, cognitive mediation, or the individual meaning associated with experiencing a traumatic event might differ for men and women. It might be possible, as suggested by Pratchett, Pelcovitz, and Yehuda (2010), that certain traumatic events are in conflict with the identity of women in a way that is not the case for men. Future research might seek to examine whether gender role expectations or gender-specific cognitive mediation of a traumatic event might be responsible for gender differences in mental health outcomes in trauma-exposed populations.

It is possible that differences between men and women with PTSD and depression could result from increased vulnerability due to forces related to inequality coupled with trauma exposure. Indeed, the oppressed position of Black and Hispanic racial and cultural groups in the United States is well documented. Black and Hispanic groups in the United States are disproportionately in the lower income categories and have higher rates of mental health problems (Williams et al., 2010). The reasons suggested for increased mental health problems vary greatly, but include social environments with high crime rates, high exposure to community and interpersonal violence, and the psychological consequences of discrimination (Williams et al., 2010). Negative consequences could be exacerbated in communities with high concentrations of members of racial and cultural groups who experience oppression due to unequal income distribution, lack of affordable housing, lack of educational opportunities, and other resources considered important for the health of populations (McLaughlin & Stokes, 2002). Considering the fact that a majority of our sample were minority groups who reported a very low income, further research is necessary

to understand the pathways through which discrimination, income, and educational inequality influence gender differences in mental health.

This study suffers from several limitations that warrant cautious interpretation of the results. Using a sample of trauma-exposed individuals who are engaging in help-seeking behaviors limits the generalizability of our results to other populations. The cross-sectional design of our study does not allow for causal assignment. The results of this study cannot establish whether gender or specific factors associated with gender actually contributes to the development of mental health disorders. The effect of the type of trauma on probable PTSD and depression was not a focus of this study and could be a potential confound associated with the study results. Our selection of participants was governed by purposeful rather than by random sampling. This could result in selection bias and a nonrepresentative sample, even though we chose to include three community health and mental health centers from different economic, racial or ethnic, and environmental neighborhoods. By not including an upper limit or higher income categories, we were not able to investigate the role of poverty or financial security. Because the self-report measures used cannot replace structured clinical interviews and diagnoses, the external validity of our results is limited. Moreover, men might be less likely to self-report being a victim of specific types of traumas, such as sexual assault and domestic violence, due to issues related to stigma. The relationship among PTSD, GAD, and depression might have been characterized by symptom overlap or comorbidity between these disorders, which could have influenced the results. A prospective study with a larger sample size that assesses the role of gender, racial or ethnic group status, coping strategies, and gender-specific experiences before and after traumatic experiences might assist in clarifying the nature of the relationship between gender and traumatic event exposure in the development of mental health difficulties. The lack of significant findings in this study could be due to a lack of power to detect effects that might be there. The smaller sample size of the study might have led to Type II error (i.e., failure to find actual effects) in the gender comparisons.

A strength of this research is that it adds to the literature on gender differences in a relatively understudied population, urban community survivors of trauma. Violence against women, particularly physical and sexual violence, has been recognized as an important public health problem that might contribute to deleterious effects on women's health, including mental problems, physical problems, and even death (Campbell et al., 2003; Tjaden & Thoennes, 2000). Research and public policies need to directly address gender disparities in exposure to violence and trauma as well as mental health outcomes and access to appropriate care.

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TABLE 1

Sample Characteristics by Gender

	Male ^a (<i>n</i> = 115)		Female ^a (<i>n</i> = 55)		Test	<i>p</i>
	%	<i>n</i>	%	<i>n</i>		
Age in years, <i>M</i> ± <i>SD</i> ^c	44.6 ± 12.3	115	40.5 ± 11.6	55	<i>F</i> (1) = 4.34	.04*
Race or ethnicity						
Black	54.8	63	32.7	18	$\chi^2(2) = 7.71$	.02*
Hispanic	16.5	19	29.1	16		
White	28.7	33	38.2	21		
Level of education						
Some high school or less	27.8	32	25.5	14	$\chi^2(2) = 4.29$	.55
High school graduate/equivalent	50.4	58	38.2	21		
College degree	21.7	25	36.4	20		
Household income, annual						
<\$14,999.00	87.8	101	58.2	32	$\chi^2(1) = 19.20$	.00**
>\$15,000.00	12.2	14	41.8	23		
Trauma exposure ^b	4.7 ± 2.1	115	4.2 ± 2.5	54	<i>F</i> (1) = 2.13	.15
Clinical characteristics						
Probable PTSD ^b						
Yes	32.2	37	42.6	23	$\chi^2(1) = 1.74$	.23
No	67.8	78	57.4	31		
Probable GAD ^b						
Yes	44.3	51	49.1	27	$\chi^2(1) = 0.34$	.62
No	55.7	64	50.9	28		
Probable depression ^b						
Yes	38.6	44	53.7	29	$\chi^2(1) = 3.40$	.07
No	61.4	70	46.3	27		

Note. PTSD = post-traumatic stress disorder; GAD = generalized anxiety disorder.

^aFor some characteristics, *n* is less than 170 due to missing data.

^b Trauma exposure is measured by the Stressful Life Events Screening Questionnaire, PTSD is measured by the PTSD Checklist–Civilian version, GAD is measured by the Generalized Anxiety Disorder–7, and depression is measured by the Brief Symptom Inventory–18.

^c Analysis of variance results.

* $p < .05$.

** $p < .001$.

TABLE 2

History of Traumatic Events^a by Gender

Traumatic event ^a	Male ^b (n = 115)		Female ^b (n = 55)		Odds ratio [95% CI]	Adjusted odds ratio ^c [95% CI]
	%	N	%	n		
Physical assault/abuse	44.3	51/115	49.0	24/49	1.21 [0.62, 2.35]	2.02 [0.93, 4.38]
Robbery or mugging	53.0	61/115	21.3	10/47	0.24 [0.11, 0.53]***	0.32 [0.14, 0.74]**
Attempted sexual assault	25.2	29/115	39.6	19/48	1.94 [0.95, 3.97]	2.09 [0.95, 4.60]
Sexual assault (penetration)	18.4	21/114	51.0	25/49	4.61 [2.22, 9.61]***	6.56 [2.79, 15.40]***
Threatened with weapon	51.8	59/115	25.5	12/47	0.32 [0.15, 0.68]**	0.32 [0.15, 0.72]**
Childhood physical abuse	51.3	59/115	52.9	27/51	1.07 [0.55, 2.07]	0.97 [0.47, 2.01]
Life-threatening illness	32.2	37/115	27.7	13/47	0.81 [0.38, 1.71]	0.95 [0.42, 2.14]
Life-threatening accident	46.1	53/115	51.1	24/47	1.22 [0.62, 2.41]	1.46 [0.70, 3.05]
Death of loved one by accident, homicide, or suicide	55.7	64/115	45.8	22/48	0.67 [0.34, 1.34]	0.82 [0.40, 1.71]
Domestic violence	33.9	39/115	62.0	31/50	3.18 [1.60, 6.34]**	4.91 [2.18, 11.08]***
Witnessed death or assault	62.3	71/114	40.4	19/47	0.41 [0.21, 0.82]*	0.42 [0.20, 0.89]*

^aTraumatic event exposure was positive if the event “happened to me” or “[I] witnessed it.”^bFor some characteristics, n is less than 170 due to missing data.^cAdjusted for age, race or ethnicity, and household income.

TABLE 3

Association between Gender and Current Probable PTSD, GAD, and Depression

Probable mental health disorder	Male (<i>n</i> = 115) ^a		Female ^a (<i>n</i> = 55)		Odds ratio [95% CI]		
	%	<i>n</i>	%	<i>N</i>	Crude odds ratio	Adjusted odds ratio (Covariate Set 1) ^b	Adjusted odds ratio (Covariate Set 2) ^c
PTSD	42.6	49	53.7	29	1.56 [0.82, 2.99]	1.92 [0.93, 3.97]	2.12* [1.01, 4.48]
GAD	44.3	51	49.1	33	1.21 [0.64, 2.30]	1.29 [0.64, 2.59]	1.39 [0.69, 2.82]
Depression	38.6	44	53.7	29	1.85 [0.96, 3.55]	2.12* [1.02, 4.42]	2.33* [1.10, 4.93]

Note. PTSD = post-traumatic stress disorder; GAD = generalized anxiety disorder.

^a For some characteristics, *n* is less than 170 due to missing data.

^b Adjusted for covariates (i.e., age, race or ethnicity, and household income).

^c Adjusted for all the variables in note b and for the level of trauma exposure.

* *p* < .05.

** *p* < .01.

*** *p* < .001.