Symptoms of Posttraumatic Stress Disorder Among Urban Residents

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Abstract: Previous studies indicate a high risk of Posttraumatic Stress Disorder (PTSD) among women and low-income, urban-residing African-Americans. This study examined PTSD symptoms among urban-residing, socioeconomically diverse, working-age African-Americans and whites. The participants completed the PTSD Checklist–Civilian Version. Of the 2104 participants, 268 (12.7%) were screened positive for PTSD symptoms. Women (13.8%) were more likely than men (11.3%), white participants (13.8%) were more likely than African-Americans (11.9%), and younger participants (16.1%) were more likely than older participants (10.2%) to screen positive for PTSD symptoms. A significant interaction (p = 0.05) revealed that white women living below the 125% poverty level were most likely to report PTSD symptoms. These findings highlight the importance of PTSD screening in low-income urban neighborhoods.

Key Words: Symptoms of posttraumatic stress disorder, civilians, urban residents.

(J Nerv Ment Dis 2011;199: 436-439)

Exposure to a traumatic event over the course of an individual's lifetime is common in the United States. One epidemiological study found an exposure rate of 60.7% in men and 51.2% in women (Kessler et al., 1995). Although many may be exposed to a qualifying traumatic event at some point over their life span, only some individuals develop posttraumatic stress disorder (PTSD). PTSD is defined as re-experiencing a traumatic event, the avoidance of stimuli associated with the trauma and emotional numbing, and increased arousal. The lifetime prevalence of PTSD is reported as 7.8% in one study (Kessler et al., 1995) and 9.2% in another (Breslau et al., 1998), but the National Comorbidity Survey–Replication more recently reported a slightly lower prevalence rate of 6.8% (Kessler et al., 2005).

Studies have consistently reported a higher rate of PTSD for women than for men (Alim et al., 2006b; Breslau et al., 1997; Helzer et al., 1987; Kessler et al., 1995; Norris, 1992). Resnick et al. (1993) found a lifetime prevalence of 12.3% among adult women. This rate is somewhat higher than reported national averages. Breslau et al. (1997) found that women were 2 times as likely as men (30.2% vs. 13%, respectively) to develop PTSD following a traumatic event despite there being no sex difference in the number of exposures to traumatic events. There is some evidence that higher rates of PTSD among women may be caused, in part, by the type of trauma experienced, with women experiencing more interpersonal violence (Olff et al., 2007). However, other studies have found comparable sex differences that cannot be explained by the differences in the types of trauma experienced or the numbers of traumas. This suggests that women may be more susceptible than men to developing PTSD fol-

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This research was supported entirely by the Intramural Research Program of the National Institutes of Health, National Institute on Aging.

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ISSN: 0022-3018/11/19907-0436

DOI: 10.1097/NMD.0b013e3182214154

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lowing a traumatic event (Alim et al., 2006b; Breslau et al., 1998; Kessler et al., 1995).

Other studies have indicated higher rates of undiagnosed PTSD among urban-dwelling African-Americans with low socioeconomic status (SES; Davis et al., 2008; Schwartz et al., 2005). Schwartz et al. (2005) found a PTSD incidence rate of 44%, in which most cases were undiagnosed and all participants were African-Americans residing in an urban area. In their 2006 review, Alim et al. (2006a) suggested that race alone does not explain the elevated rates in this population. They suggested that more research on the interaction of PTSD with lower socioeconomic status, urban residency, and race is needed. Many previous studies of the relationship between race and PTSD have used a majority of African-American, low-income participants (Alim et al., 2006; Schwartz et al., 2005), making it difficult to determine whether elevated rates were caused by race or poverty.

The Detroit Area Survey of Trauma examined PTSD in the Detroit Metropolitan area (Breslau et al., 1998) in a sample of majority suburban whites (77%). They found an alarming lifetime prevalence of trauma exposure of 89.6% in the entire sample. Assaultive violence had the highest risk of PTSD and was more likely to have been experienced by nonwhites and in lower SES groups who resided predominantly in central city. The study also found that the risk of PTSD among nonwhites (80% of whom were African-Americans) was 2 times that for whites (14% *vs.* 7.3%, respectively). However, this difference was not significant after adjusting for other variables, such as central-city residence and rate of trauma exposure.

A subsequent study by Breslau et al. (2004) focused on PTSD among urban residents (Breslau et al., 2004). The sample consisted primarily of African-Americans (71%). The lifetime prevalence of PTSD was 7.1%. There were no significant race differences. In contrast with the Detroit Area Survey, this sample experienced more assaultive violence, which was the traumatic event likely to lead to a PTSD diagnosis. Although the overall rate of PTSD was lower in this urban sample than in the previous majority suburban sample, there was greater risk of assaultive violence exposure in men. Despite earlier assumptions about race differences in PTSD, these results suggest that other factors such as low SES might account for the observed rates in previous studies.

The purpose of the present study was to examine the relationship between sociodemographic characteristics and symptoms of PTSD in a sample of bi-racial, working age, urban-residing civilians of various income levels.

METHODS

Participants

Data for the present study were obtained from the Healthy Aging in Neighborhoods of Diversity across the Lifespan (HANDLS) study (Evans et al., 2010). The HANDLS study is an epidemiological, longitudinal, observational study of health disparities in an area probability sample of Baltimore, MD. Data for the present study were gathered from baseline examinations, which were completed between 2004 and 2009. Participants were 3722 socioeconomically diverse African-Americans and whites between the ages of

The Journal of Nervous and Mental Disease • Volume 199, Number 7, July 2011

30 and 64 years. Of the 3722 participants, 2104 completed the PTSD Checklist–Civilian version (PCL-C) and were included for further study. Sample characteristics are described in Table 1. Poverty status was determined using the 125% poverty level as defined by the Department of Health and Human Services (Federal Register, 2004).

Materials

The participants completed a self-administered Audio Computer Assisted Self-Interview questionnaire that included the PCL-C, a 17-item inventory that evaluates self-reported PTSD symptoms resulting from a stressful experience from the past and is based on the DSM-IV diagnostic criteria of a) re-experiencing the traumatic event, b) avoidance of stimuli associated with the event and/or numbing of general responsiveness, and c) increased arousal (American Psychiatric Association, 2000). The participants rate how much they have been bothered by each symptom in the last month using a scale from 1 (not at all) to 5 (extremely).

Statistical Analysis

Binary logistic regression was conducted to examine the relationship between the scores on the PCL-C while adjusting for the effects of demographic variables. We used a combined scoring method using the cutoff score of 44 that has been recommended for use in civilian populations (Blanchard et al., 1996; Ruggiero et al., 2003) with subscale criteria. To be classified as screen positive for PTSD symptoms, participants had to score above 44 and endorse a score of 3 or higher in at least one re-experiencing criteria (items 1 to 5), at least three avoidance criteria (items 6 to 12), and at least two hyperarousal criteria (items 13 to 17). The Statistical Package for Social Sciences (SPSS version 17.0) was used for all analyses (SPSS for Macintosh, 2008).

RESULTS

Prevalence of PTSD Symptoms

Positive PTSD symptoms were indicated in 268 participants (12.7%) who scored above 44 on the PCL-C and met minimum criteria for each of the subscales. Women were more likely than men to screen positive on the PCL-C (odds ratio [OR] = 1.98; 95% confidence interval [CI], 1.10 to 3.57). The rate of positive PTSD symptoms was 13.8% among women and 11.3% among men. White participants (13.8%) were more likely to screen positive than were African-Americans (11.9%; OR = 1.89; 95% CI, 1.08 to 3.33). Those

TABLE 1. Descriptive Statistics of Sample Characteristics	
Total (N)	2104
Sex	
Female	1177 (55.9%)
Male	927 (44.1%)
Race	
White	898 (42.7%)
African-American	1206 (57.3%)
Poverty Status	
Above 125% of poverty level	1208 (57.4%)
Below 125% of poverty level	896 (42.6%)
Age	
Younger than 47 yrs	894 (42.5%)
Older than 47 yrs	1210 (57.5%)



FIGURE 1. Relationship between race, sex, poverty status, and PCL-C scores. PCL-C indicates PTSD Checklist–Civilian Version; PTSD, posttraumatic stress disorder.

below the median age of 47 years (16.1%) were more likely to screen positive for PTSD than those older than 47 years (10.2%; OR = 2.01; 95% CI, 1.23 to 3.29).

There was a significant poverty status \times race \times sex interaction (OR = 0.33; 95% CI, 0.11 to 0.98) such that white women below the 125% poverty level were more likely to screen positive for PTSD. Scores were similar to white men below the 125% poverty level. Overall, men above the 125% poverty level had the lowest scores across race as shown in Figure 1.

DISCUSSION

This study examined the relationship between symptoms of PTSD assessed by the PCL-C and demographic variables in a workingage, urban sample of African-Americans and whites. The overall rate of significant PTSD symptoms in our study (12.7%) was higher than the most recent national lifetime prevalence reported in the National Comorbidity Survey–Replication (6.8%) (Kessler et al., 2005). This suggests that those living in an urban environment may be more likely to develop PTSD symptoms than those in suburban or rural environments.

Previous studies have shown that PTSD onset occurs primarily in young adulthood (Breslau et al., 1997). Our findings indicate agerelated differences despite using a working-age population. The current study found that people aged 30 to 47 years (16.1%) were more likely to report symptoms of PTSD than those aged 47 to 64 years (10.2%). The lower limit of our age group was older than some previous studies. We found a rate of 16.1% among the younger participants in our study (30 to 47 years) whereas Breslau et al. (2004) reported only a 7.1% prevalence in a group of 19 to 24 year olds (Breslau et al., 2004).

Although the rates of PTSD were higher in our sample than among national averages, they were lower than the rates reported by previous studies of urban-dwelling, low-SES African-Americans (Davis et al., 2008; Schwartz et al., 2005). This is likely caused by the difference in SES of the populations studied. Our sample consisted of participants of all income levels, whereas previous studies used more homogeneous groups. These findings differ than those reported in the

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Detroit Area Survey of Trauma (Breslau et al., 1998). Breslau et al. (1998) found a prevalence of 9.2%, which is more consistent with national averages. They did not report any significant differences by income level. Our study also included participants who identified as white, which enabled us to examine the effect of race on the development of PTSD symptoms.

Alim et al. (2006b) posited that the higher rates of PTSD among African-American populations reported in previous studies were more a function of urban environment and SES than of race (Alim et al., 2006a). Our findings provide support for this hypothesis. White participants in our sample were more likely than African-Americans to screen positive for PTSD. In addition, we found that white men and women living below the poverty level had the highest risk. Although poverty status was not significant in the overall model, Figure 1 shows that those living below the 125% poverty level had slightly higher scores on the PCL-C than did those living above the 125% poverty level. The rates of positive PTSD symptoms were 16.5% for those below the 125% poverty level and 9.9% for those above the 125% poverty level. In addition, our overall rates in this urban sample were higher than national averages. Given these two findings, it seems that urban environment and low SES play a more important role in risk for PTSD symptoms than does race alone.

We also examined the impact of each neighborhood's crime rate on the risk of the development of PTSD symptoms. Crime rate was not a significant factor, suggesting that exposure to crime does not in itself increase the rate of PTSD symptoms. There may be something else about the urban environment and SES that has a greater impact on symptoms. Perhaps those individuals with a higher income level have some experience, such as education, that increases resilience to PTSD. Future studies should examine the impact of education level on the development of PTSD symptoms.

There are several limitations to this study. First, the PCL-C does not assess traumatic qualifying events, the first DSM-IV criteria for diagnosis. Ours is a study of PTSD symptoms rather than diagnoses. Information on specific trauma types was not available. Second, our sample was limited to Baltimore residents; therefore, the findings may have limited generalizability to other regions, even though the overall composition of Baltimore is similar to other medium-sized cities in the United States. Third, the presence of symptoms was determined through self-report rather than through a structured clinical interview. The limits of self-report measures are an important consideration.

PTSD is often underdiagnosed in civilians (Mueser et al., 1998; Schwartz et al., 2005), yet it is vital to evaluate because of its implications for health outcomes. Individuals with PTSD are more likely to engage in negative health behaviors, putting them at further risk for human immunodeficiency virus and substance use (Brief et al., 2004). Studies have reported that PTSD is associated with health issues such as chronic pain, hypertension, coronary artery disease, thyroid disorder, and other medical symptoms (Asmundson et al., 2002; Gill et al., 2009; Schwartz et al., 2006). PTSD's high rate of comorbidity (Kessler et al., 1995) with other mental disorders is an important consideration for patient care so that clinicians can be aware of and treat a variety of symptoms. PTSD is common among patients in primary care settings (Bruce et al., 2001; Samson et al., 1999; Stein et al., 2000), which further emphasizes the importance of accurate diagnosis and treatment. Preventative and integrative treatment would be especially useful in treating these populations. Our findings signify the importance of screening in urban clinics, particularly those that primarily serve lowincome individuals.

In conclusion, this study provides further support to the argument that elevated symptoms of PTSD are likely to occur in lowincome, urban-residing individuals and that this risk is not associated with being African-American. In addition, PTSD symptoms seem to be more prevalent in urban populations than in national averages. This could be caused by higher exposure to traumatic events in urban settings, particularly violence. This information is useful in the treatment of civilian PTSD. Future research should focus on PTSD in other minority populations to further investigate the relationship of PTSD to race. Continued research across various income levels is needed to fully understand the impact of SES on the development of PTSD. Studies focusing on neighborhood differences and PTSD could further delineate the relationships between these factors.

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