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Post-Traumatic Stress Disorder, Neighborhood Residency and Satisfaction, and Social Network Characteristics among Underserved Women in Baltimore, MD¹

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Abstract

Background—Post-traumatic stress disorder (PTSD) prevalence is high, but not well-understood, among women living in urban, impoverished areas. While previous studies have established social support as an important factor in PTSD development and maintenance, little is known about how perceptions of neighborhood are linked to PTSD. This study examined the

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relationship between PTSD and social network and neighborhood factors among women with a low socioeconomic status.

Basic procedures—We analyzed cross-sectional data collected from an HIV/STI peer network study in Baltimore, Maryland (n=438). We used bivariate analyses to examine the associations between PTSD and social network characteristics and time in neighborhood and satisfaction. We then constructed multivariable regression models that controlled for with PTSD: homelessness, cocaine/heroin use, and unemployment.

Main finding—Overall, 30% of women had PTSD symptom severity consistent with a clinical diagnosis. In the multivariable model, dissatisfaction with neighborhood block (OR=1.80, p=0.03) and living in one's neighborhood >5 years (OR=1.69, p=0.03) were associated with PTSD. Social network factors that were significantly associated with PTSD included a higher number of network members in conflict with the participant (OR=1.28, p=0.02), presence of a network member who would let the participant stay with them (OR=0.4, p=0.004), and the number of network members with whom the participant socialized (OR=0.6, p=0.04).

Principal conclusions—In this sample of impoverished urban women with a high prevalence of PTSD, duration of residency, satisfaction with neighborhood, and network characteristics were found to be strongly associated with PTSD symptom severity.

Keywords

women; PTSD; social network; social support; neighborhood

Introduction

Post-traumatic stress disorder (PTSD) is a trauma-related psychological disorder resulting from at least one traumatic event as defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM) (American Psychiatric Association, 2000). In the DSM-V, PTSD is characterized by re-experiencing, avoidance, negative affect and mood, and hyperarousal symptoms (American Psychiatric Association, 2013). Direct experience of assaultive, or intentional, violence perpetrated by another person leads to PTSD more often than any other type of traumatic event (Breslau, Chilcoat, Kessler, & Davis, 1999; Gill, Page, Sharps, & Campbell, 2008; Breslau, Chilcoat, Kessler, Peterson, & Lucia, 1999; White et al., 2015). Earlier age of trauma and genetic factors are also implicated in developing PTSD (Anda et al., 2006; Duncan et al., 2017). The manifestation of PTSD varies based on characteristics of the underlying trauma (e.g., severity, number of occurrences, and duration) and can be temporary or persist for many years (Breslau & Davis, 1992; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). An earlier age at traumatic event is also associated with PTSD development. Prior trauma and lack of social support following trauma are associated with increased susceptibility to PTSD (Brewin, Andrews, & Valentine, 2000; Javidi & Yadollahie, 2012). Several factors have been identified as protective, including social support (Herman, 1997).

PTSD among urban U.S. women

Previous studies have found that women are more likely than men to develop PTSD (Walker, Carey, Mohr, Stein, & Seedat, 2004). In particular, impoverished women living in urban areas have a high prevalence of PTSD compared to men and other socioeconomic groups. The Healthy Aging in Neighborhoods of Diversity across the Lifespan Study (HANDLS) in Baltimore found that, compared to men, women significantly more often had PTSD scores aligned with a PTSD diagnosis, and 13.8% of women had PTSD symptoms vs. 11.3% of men. White women living below 125% of the poverty line were more likely to have PTSD symptoms when compared to all men in the study or all African-American participants in the study (Parto, Evans, & Zonderman, 2011). One study representing the full U.S. population found higher rates of PTSD among Black/African-Americans (8.7%) compared to Whites (7.4%), Hispanics (7.0%), and Asians (4.0%). These patterns held when controlling for trauma exposure, and all minority groups were significantly less likely to seek care for PTSD when compared to Whites (Roberts, Gilman, Breslau, Breslau, & Koenen, 2011).

PTSD is linked to a wide range of deleterious health conditions. Depression and substance use disorders are common PTSD comorbidities and PTSD is associated with increased risky sexual behavior, HIV, STIs, cardiovascular disease, sexual revictimization, and medication non-adherence (Brown & Mellman, 2014; Duncan et al., 2015; Edmondson & Cohen, 2013; El-Bassel, Gilbert, Vinocur, Chang, & Wu, 2011; Green et al., 2005; Houston, Sandfort, Watson, & Caton, 2013; Hutton et al., 2001; Kronish, Edmondson, Li, & Cohen, 2012; Overstreet, Willie, Hellmuth, & Sullivan, 2015; Pearson et al., 2015; Plotzker, Metzger, & Holmes, 2007; Risser, Hetzel-Riggin, Thomsen, & McCanne, 2006; Seedat, 2012; Sumner et al., 2015; Weiss, Tull, & Gratz, 2014). Despite the higher prevalence of PTSD among women and racial minorities compared to men and White individuals, most studies of PTSD focus on military service members or victims of sexual assault. To address this gap, the current investigation examines PTSD in an understudied population with a low socioeconomic status (SES) (Brewin et al., 2000; Crevier, Marchand, Nachar, & Guay, 2014).

PTSD, neighborhood, and social support

According to the theory of social suffering, post-traumatic stress can be understood as a disease with its roots in broader structures, including physical and social environments that create the conditions for traumatic events while diminishing support. Hence, social suffering provides a lens for inquiry into exploring PTSD among underserved, urban women as well as interpreting the findings of this study (Das, Kleinman, Lock, Ramphela, & Reynolds, 2001; Kleinman, Das, & Lock, 1997). Here, we examine the influence of physical and social environments, including length of time in a neighborhood, as well as interactions an individual has with their social network.

Aside from community violence, relatively few studies have examined the relationship between neighborhood characteristics (e.g., environmental disorder, quality of housing, neighborhood violence) and PTSD. One study of male and female residents across 59 New York City neighborhoods showed that neighborhood characteristics, such as deteriorated

housing and neighborhood violence, were related to PTSD symptomatology (Ahern, Galea, Tracy, & Vlahov, 2004). Another study found a similar result: that neighborhood disorder (i.e., self-reported perceptions about the physical environment in which the participant resided) was related to PTSD symptoms among low-income African-Americans in an urban area. In this study, community cohesion (i.e., the number of social ties perceived by an individual) was related to lower PTSD symptom severity and even partially mediated the negative effects of neighborhood disorder (Gapen et al., 2011).

Many studies have found a link between social support and the development and maintenance of PTSD. Studies of social support have defined it as “information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations” and “the availability of interpersonal resources.” (Cobb, 1976; Sarason, 2013). In an earlier review of the literature, lack of social support was found to be one of the strongest predictors of PTSD following a traumatic event (Brewin et al., 2000). Studies of war veterans or individuals experiencing breast cancer found that low social support was associated with development and maintenance of PTSD (Andrykowski & Cordova, 1998; Barrett & Mizes, 1998; Jankowski et al., 2004; Schnurr, Lunney, & Sengupta, 2004). Another study among individuals who had experienced sexual assault found that social support immediately following the trauma was significantly and negatively correlated with PTSD symptom levels (Kimerling & Calhoun, 1994). However, a longitudinal study among a military sample found that PTSD was linked to lower future social support but that poor social support was not related to later PTSD. Bearing in mind that these studies are among different populations, the latter finding suggests that PTSD may either work differently across populations or may influence social relationships rather than the converse (King, Taft, King, Hammond, & Stone, 2006).

An analysis of data from the National Epidemiologic Survey on Alcohol and Related Conditions found that having multiple social network roles was more protective against PTSD compared to the perceived strength of participants’ social networks (Platt, Keyes, & Koenen, 2014). Another study using this same dataset did not look at PTSD specifically, but found that social support was protective against other mental health psychopathology (e.g., major depressive disorder, generalized anxiety, social phobia) (Moak & Agrawal, 2009).

Studies have found that women often have greater social support than do men. Among women, the nature of and response by supporters may also explain, in part, why women more often develop PTSD than men. In one study of victims of violent crime, men and women described similar levels of positive social support, but women were more likely than men to report that supporters made them feel worse after the event (Andrews, Brewin, & Rose, 2003). Negative responses, but not positive social support, were found to be associated with PTSD. A cross-sectional study found women with PTSD to have poorer communication with members of their social network compared to men. This finding suggests that PTSD in women is associated with relational disturbances not observed among men (Crevier et al., 2014). A prospective study among women who had experienced sexual violence found no relationship between positive social support and PTSD, but did find that the intensity of interpersonal conflict was related to PTSD (Zoellner et al., 1999). These three studies are consistent with a larger body of literature suggesting that gender moderates

the relationship between negative social support and PTSD and that, for women, positive social support is not strongly related to PTSD symptom severity.

Many of these studies were conducted in diverse SES populations defined by a common traumatic event (e.g., victims of a violent crime, war veterans, victims of natural disasters). By contrast, low SES urban women are disproportionately affected by PTSD, likely due to recurring traumatic events (Guay, Billette, & Marchand, 2006). Despite the high risk of PTSD faced by low SES African-American women, few studies examine the role of social support within this population. Research from the Detroit Neighborhood Health Study describes PTSD in the community, and one analysis examined social support. Goldmann found that when comparing those with high versus low levels of social support, the relationship between socioeconomic status and PTSD was weaker. In other words, social support may dampen the effect of SES on PTSD (Goldmann, 2011). Conversely, another study examined PTSD among low-income, African-American women and found that social support did not attenuate the relationship between childhood maltreatment (particularly physical-emotional abuse and sexual-emotional abuse) and current PTSD symptomatology (Dunn, 2009). The differences in findings may be due in part to differences in the conceptualization and measurement of social support.

While social support and quality of relationships have been established as important aspects of the development and maintenance of PTSD, few studies have examined these factors in impoverished and underserved populations. In this paper, we examine the length of neighborhood residence, neighborhood satisfaction, and social support in relation to PTSD. We examine whether the size and quality (positive or negative) of social support are associated with post-traumatic stress symptom severity. We also examine contextual aspects of PTSD among urban women.

Materials and Methods

This paper is a substudy of the CHAT (Choose the right time and place; Hear what the person is saying; Ask Questions; and Talk with respect) intervention, which examined the social networks of Baltimore-based heterosexual women at risk for HIV and STIs based on self-reported behavioral factors (Davey-Rothwell, Tobin, Yang, Sun, & Latkin, 2011). This study is a secondary data analysis of 18 month follow-up survey data.

CHAT study participants were women recruited in Baltimore through word of mouth, at social service agencies, and through street outreach. Participants who were interested in the study were screened by telephone or face to face. To be eligible for CHAT, participants had to identify as women; be between 18 and 55 years of age; not report injecting drugs in the past six months; report sex with at least one male partner in the previous six months; and have at least one sexual risk factor. The sexual risk factors could be having more than two sex partners in the past six months; STI diagnosis in the past six months; and/or having a high risk sex partner in the past 90 days. A high risk sex partner was defined as one who injected heroin or cocaine, smoked crack, was HIV seropositive, or was a man who had sex with men. These participants also named friends and family through a personal network inventory conducted at baseline, and those friends and family could take part in the study if

they were 18 or older and one of the following: someone who injected drugs, a sex partner of the index participant, or a social network member with whom the participant felt comfortable discussing HIV or STIs.

While network members could be men or women, this substudy is restricted to women. The male and female participants had different recruitment criteria. Male participants were not necessarily at risk for HIV/STI. They were recruited as partners of the female participants. The intervention results have been described in detail elsewhere (Davey-Rothwell et al., 2011).

Data collection

Eligible participants consented into the study at baseline and returned for three subsequent study visits at six months, 12 months, and 18 months. Study visits took two and a half hours to complete, and participants received \$35 compensation for their time. Data used in this substudy are cross-sectional and from participants' final visit at 18 months, as PTSD data were collected only at this time. There were 567 women enrolled in the study at baseline, of whom 506 were retained through 18 months (89% retention). PTSD scores were available for 438 of these 506 women (87%) due to delayed addition of PTSD items to the survey (i.e., PTSD was only included in the survey administered at 18 months). Trained study interviewers conducted the first two-thirds of the survey face-to-face, and the last one-third was completed through Audio-Computer Assisted Self-Interviewing (ACASI). The most sensitive questions, such as sex and drug-related risk behaviors, were conducted with ACASI. Data collection began in September 2005 and ended in February 2010. Johns Hopkins Bloomberg School of Public Health's Institutional Review Board approved all study protocols.

Measures employed

From the larger study, the following measures were used in this substudy:

PTSD assessment—For post-traumatic stress disorder, the Post-traumatic Stress Checklist-Civilian Version (PCL-C) was used (Blevins, Weathers, Davis, Witte, & Domino, 2015). This seventeen-item instrument assessed symptom severity. Possible responses for each item were “not at all,” “a little bit,” “moderately,” “quite a bit,” and “extremely”. Responses were given a value of 1–5 according to intensity, and these values were summed. PCL-C scores ranged from 17–85. In accordance with guidelines for using this instrument with higher than average PTSD prevalence, scores above 44 were considered clinically significant (rather than 33, which is used in the general population) (National Center for PTSD, 2015). Within this dataset, the reliability was very high; the Cronbach's alpha was 0.94.

Social Network—In the social network inventory, participants were asked questions such as “During the last six months, who could you talk to about things that were personal and private or who could you get advice from?” and “During the last six months, who actually loaned or gave you some money over \$25 (or some valuable object that you needed)?”. In response, participants provided first names and last initials of network members. Participants

were also asked about the person's gender, age, and relationship; how long they had known the person; how much they trusted the person (on a scale of 1 to 10); as well as their employment and drug use status. To obtain the total size of the network, the number of individuals named was summed. This method of conducting a network inventory has been shown to have strong concurrent and predictive validity and has been used in previous studies (Latkin, Mandell, Vlahov, Oziemkowska, & Celentano, 1996). Because many aspects of social networks were examined, the results were divided into subsections: network size, negative social support, and positive social support. Responses to questions in each subsection were dichotomized. There were 12 final, dichotomized variables used, which included 6+ individuals in network; in conflict with 1+ network members; received advice from 1+ network members; trusted 1+ network members with money; socialized with 1+ network members; socialized with 2+ network members; 2+ close friends; 1+ persons in sexual network; lives with 1+ person; 1+ network members to help participant; 1+ network member loaned money/valuables to participant; and 1+ network member let participant stay at their place.

Residency duration and satisfaction with neighborhood—Participants were asked whether they would like to move away from their neighborhood (“not at all,” “a bit,” or “a lot”), their overall satisfaction with their neighborhood block (“completely satisfied,” “somewhat satisfied,” “somewhat dissatisfied,” or “completely dissatisfied”), the total time residing in their neighborhood (in months), how much of their time they spent in their neighborhood (“none,” “some,” “most,” or “all”), and how many people had lived on their block for five years or more. Several of these variables were dichotomized as follows: would like to move away from neighborhood (“not at all” vs. “a bit” or “a lot”) and overall satisfaction with neighborhood block (“completely satisfied” or “somewhat satisfied” vs. “somewhat dissatisfied” or “completely dissatisfied”). For this study, neighborhood was defined as the location where participants lived at the time of the survey.

Demographics—Participants were asked about their age, relationship status (“married,” “in a committed relationship,” “separated,” “divorced,” “widowed,” or “single”), homelessness in the past six months, current employment (“employed full time,” “employed part-time,” “unemployed but seeking work,” “unemployed - not seeking work,” “disabled,” or “retired - not working”), and arrests during the previous six months.

Health status/health behavior—Participants were asked about their HIV status and drug use history. Drug use measures included: injected drugs in past six months (yes, no); drink alcohol (“never,” “monthly or less,” “2–4 times/month,” “2–3 times/week,” “4 or more times/week”); smoke marijuana in past six months (yes, no); and use any type of heroin or cocaine in the past six months (yes, no). To assess depression, the Center for Epidemiologic Studies Depression Scale (CES-D) was used (Radloff, 1977). Since depression is common among people at risk for HIV and living in poverty, we used a score of 20 as the cutoff for depression. This approach has been used other studies with at-risk populations (Costenbader, Astone, & Latkin, 2006).

Data analysis

We explored the data and examined bivariate associations between PTSD and demographic, neighborhood, and social network characteristics using chi-squared tests for dichotomous variables, t-tests for continuous variables, and Mann-Whitney tests for ordinal variables (Table 1). We adjusted the models for these confounders, which were associated with PTSD and neighborhood perceptions, neighborhood satisfaction, or network characteristics (homelessness in the past 6 months, lack of current employment, and cocaine/heroin use in the past 6 months) (Brewin et al., 2000). The unadjusted and adjusted associations are shown in Table 2. Because this study did not examine behavioral outcomes that CHAT was intended to alter, CHAT participants and their network members were not differentiated in the analysis. Due to differences in PTSD incidence by gender, this study was restricted to women. We created three models: one that included all neighborhood characteristics, another that included network characteristics only, and a third model that combined both neighborhood and network characteristics. Items were selected for inclusion based upon 1) their significance at the bivariate level, and 2) conceptual rationale for their inclusion. We tested our models for collinearity but did not find any variance inflation factors (VIFs) greater than 1.27, suggesting no collinearity.

Results

Of the 438 women for whom PTSD data were available, 130 (29.7%) had a PCL-C score greater than 44, indicating nearly 30% of women surveyed have clinically significant symptom levels (Table 1). Using the method of scoring by the presence of a specified number of symptoms in each cluster, 108 (24.7%) had a PCL-C score corresponding with PTSD. The average PTSD checklist score was 37.1 (std. dev: 15). Overall, just less than half of participants were married and few had injected drugs in the past 6 months. Most participants rarely drank alcohol (monthly or never, 52%). Homelessness differed between women with and without high PCL-C scores: 25% of women with PTSD had been homeless in the previous 6 months compared to 12% of those without PTSD ($p=0.001$). Similarly, only 20% of women with PTSD were employed compared to 33% of their counterparts without PTSD ($p=0.007$). Nearly half of women with PTSD reported heroin or cocaine use in the past six months compared to 34% of those without PTSD (Table 1; $p=0.004$). Out of the 130 women with PTSD, 104 (80%) also had comorbid depression ($p<0.0001$). There were no statistically significant differences between participants with and without PTSD data in age ($t=1.24$, $p=0.22$), relationship status ($\chi^2=5.65$, $p=0.341$), HIV status ($\chi^2=0.50$, $p=0.48$), number of times arrested ($t=-1.39$, $p=0.17$), or alcohol use ($\chi^2=2.60$, $p=0.63$).

Bivariate analyses showed significant associations between PTSD and participants' desire to move away from their neighborhood, dissatisfaction with their block, and network size (Table 2). There were also significant bivariate relationships between PTSD status and several social network factors, including the number of network members with whom the participant was not on good terms (OR: 1.31, CI: 1.11–1.55); got advice from 1+ network members (OR: 0.40, CI: 0.17–0.95); socialized with 2+ network members (OR: 0.61, CI: 0.40–0.94); mean trust for network members (OR: 0.78, CI: 0.77–0.98); and 1+ network members who would let participant stay at their place (OR: 0.40, CI: 0.22–0.72). In the

multivariable analyses, the following variables remained significant: socializing with 2+ network members, having at least one network member who would let participant stay with them, and number of network members with whom participant had conflict.

Multivariable analyses controlled for homelessness in the past 6 months, current employment status, and heroin/cocaine use in the past six months. These analyses showed that women with PTSD were nearly twice as likely to want to move away from their neighborhood; more than twice as likely to be dissatisfied with their block, and nearly twice as likely to have lived in their neighborhood for more than five years (Table 2). PTSD was also related to network characteristics.

To examine neighborhood and social network factors together, we constructed three models. Model A included neighborhood-related predictors only. Model B included only social network-related predictors, and Model C combined neighborhood and social network-related predictors.

In the final model (Model C), only two neighborhood factors remained statistically significant: dissatisfaction with block, and length of time in neighborhood (Table 3). Dissatisfaction with one's block was associated with nearly twice the odds of PTSD (1.80, $p=0.03$), and women who were living in their neighborhood longer than 5 years were also more likely to have PTSD (1.69, $p=0.03$). When network characteristics were examined simultaneously, the following predicted PTSD status: socializing with 2+ network members (0.61, $p=0.04$); at least one network member who would let participant stay at their place (0.40; $p=0.004$); and number of network members with whom participant had conflict (1.28; $p=0.02$). All logistic models controlled for homelessness, employment status, and heroin/cocaine use.

Discussion

This study points to a high incidence of PTSD (30%) among participants, as well as a strong relationship between PTSD, time in neighborhood, neighborhood satisfaction, and social network characteristics. For neighborhood, these results suggest that women's becoming "stuck" in a neighborhood, or having little choice where one lives, may be related to PTSD. Hence, the finding that having a network member that would allow the participant to stay with them may mean greater perceived control and explain the negative association with PTSD (Frazier, Berman, & Steward, 2001). It is possible that there is greater exposure to violence in these neighborhoods, but our study did not examine violence experience. These findings are consistent with previous studies, which found that perceived neighborhood disorder was positively associated with PTSD symptoms (Gapen et al., 2011). This result is consistent with the framework of social suffering, where individuals' negative health outcomes stem from aspects of their context (Das et al., 2001; Kleinman et al., 1997).

This analysis also suggests that some network characteristics, including social contact and instrumental support, may be protective. Here, some manifestations of positive social support (e.g., a place to stay) were found to be associated with decreased PTSD symptomatology while others, such as receiving advice or social network size, had no

association with PTSD. Instrumental support may have been important in this context where 1 in 4 participants with PTSD had experienced homelessness and approximately half (47.2%) faced housing instability. Negative social interactions (e.g., conflict) were associated with PTSD. Conflict, or negative social support, was associated with higher odds of PTSD. These results parallel previous studies of women's responses to trauma that found negative manifestations of social support are more strongly related to PTSD than positive social support (Andrews et al., 2003; Crevier et al., 2014; Zoellner et al., 1999). Findings from a recent study of PTSD and social support among African-Americans align with those presented here (Nguyen, Chatters, Taylor, Levine, & Himle, 2016).

There are seemingly contradictory findings in the existing literature: many studies point to positive social support preventing the development of PTSD following a traumatic event, while others do not. Some studies have found that PTSD leads to poor social support over time, rather than the converse, which points to the need for more longitudinal studies. It is difficult to make inferences across this literature as researchers have conceptualized and measured social support differently, examined populations with very different trauma experiences, and largely utilized cross-sectional data (King, Taft, King, Hammond, & Stone, 2006; Zoellner et al., 1999).

One contribution of this study is conceptualizing social support in a way that includes emotional and instrumental support, as well as both positive and negative interactions with one's social network. These findings, combined with the previous literature, suggest that it may be important to examine social support in detail as some aspects are positively associated with PTSD while others are negatively associated. Future researchers could consider additional network behaviors and attributes linked to PTSD. These behaviors could then lead to hypotheses of how best to help individuals following traumatic events to identify network members with the ability and attributes to provide the right type of support and work with those network members to mutually enhance their well-being. Research on recovery from PTSD points to relationships as being an important component of recovery (Herman, 1997).

Limitations

There are several limitations. Using cross-sectional data limits exploration of causal relationships. We also relied on self-assessments of PTSD, social support, and social network (Blake et al., 1995), which could potentially bias our findings. We also did not assess index trauma(s) that may have led to the observed PTSD symptoms here. This study focused on low SES women in a risk reduction study who were at risk of heterosexually acquired HIV/STI; hence, the results cannot necessarily be generalized to broader groups (e.g., rural women, women at low risk for HIV/STI).

Participants who were lost to follow-up ($n=61$ or 10.8%) differed from those retained and were more likely to: be of White race ($\chi^2=6.26$, $p=0.04$); have a history of homelessness ($\chi^2=6.46$, $p=0.01$); have a smaller network size ($t=2.00$, $p=0.05$); have known network members for a shorter length of time ($t=3.69$, $p<0.001$); have gotten advice from fewer network members ($t=2.35$, $p=0.02$); trusted fewer network members with money ($t=2.74$, $p<0.01$); and have lower mean trust for network members ($t=2.45$, $p=0.01$). These

differences – where participants lost to follow-up have smaller social networks than those who do not – are likely to make the results of this analysis more conservative. Had they been available, the relationships between PTSD and social network characteristics may have been more pronounced. Participants who were lost to follow-up were also more likely to have had a history of homelessness. Given the well-established linkages between homelessness and experiencing violence, it is possible that those lost to follow-up would have reported more intense PTSD symptoms than those retained in the study (Whitbeck, Armenta, & Gentzler, 2015). This difference may mean our model slightly underestimates the relationships presented. PTSD data for those lost to follow-up are not available, however.

Implications for Policy and Practice

The findings presented here align with previous literature and theory describing the relationship between economic and social policies, and proximal factors underpinning mental health outcomes. Within this framework, the relationship between PTSD and neighborhood residency and satisfaction warrants further exploration. By doing so, future interventions designed to address PTSD may be able to move beyond individual-level treatments to incorporate structural level activities.

Conclusions

This study adds to a small body of literature describing post-traumatic stress among low SES women. We found that the length of time women had resided in their neighborhoods, their satisfaction with their neighborhood, and characteristics of their social network were associated with their PTSD symptom severity. Future research is needed to ascertain specific areas for intervention, as well as refine the measurement of the role of social support and neighborhood residency in stress, these results point towards a high prevalence of PTSD symptom severity in community settings like this one and a need for trauma-informed care.

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Table 1

Participant characteristics

	no PTSD n=308		PTSD n=130		p-value
Age					
Mean	42.8		43.5		0.5
Std. dev	8.2		8.2		
Married/in a committed relationship					
No	167	54%	72	55%	0.823
Yes	141	46%	58	45%	
Race					
African-American	299	97%	127	98%	0.719
All other groups	9	3%	3	2%	
Been homeless					
No	270	88%	97	75%	0.001***
Yes	38	12%	33	25%	
Employed full/part-time					
No	205	67%	104	80%	0.007**
Yes	100	33%	26	20%	
Depression symptom severity					
CESD<20	235	76%	26	20%	<0.0001***
CESD>=20	73	24%	104	80%	
HIV Status					
HIV-negative	273	89%	111	85%	0.344

		no PTSD n=308		PTSD n=130		p-value	
Living with HIV		35	11%	19	15%		
Number of times arrested							
0 times		266	86%	104	80%	0.093	
1+		42	14%	26	20%		
Injected drugs in past 6 months							
No		301	98%	125	96%	0.357	
Yes		7	2%	5	4%		
Drink alcohol							
Never		126	41%	48	37%	0.09	
Monthly or less		58	19%	22	17%		
2-4 times / month		54	18%	18	14%		
2-3 times / week		53	17%	25	19%		
4+ times / week		17	6%	17	13%		
Heroin or cocaine in past 6 months							
No		204	66%	67	52%	0.004***	
Yes		104	34%	63	48%		
* p 0.05							
** p 0.01							
*** p 0.001							

Table 2

Adjusted associations between PTSD neighborhood residency and satisfaction, and social networks among CHAT participants

	Participants without PTSD mean or proportion (SD)	Participants with PTSD mean or proportion (SD)	Unadjusted OR PTSD (CI)	Adjusted OR PTSD (CI) ^T
Neighborhood				
Like to move away from neighborhood	0.55 (0.50)	0.69 (0.46)	1.88 (1.21–2.90) ***	1.81 (1.15–2.84) **
Dissatisfaction with block	0.22 (0.42)	0.41 (0.49)	2.38 (1.53–3.70) ***	2.30 (1.46–3.63) ***
Neighborhood total months - <5 years vs. greater	0.24 (0.43)	0.36 (0.48)	1.76 (1.13–2.74) *	1.75 (1.11–2.78) *
Spend most or all time in neighborhood	0.63(0.48)	0.68 (0.47)	1.25 (0.81–1.93)	1.18 (0.75–1.84)
Network				
<i>Network size</i>				
Six or more people in network	0.36 (0.48)	0.45 (0.50)	1.42 (0.94–2.16)	1.44 (0.94–2.21)
Mean length of time participant has known network members in months (max)	435.29 (146.49)	434.03 (152.14)	1.00 (1.00–1.00)	0.99 (0.99–1.00)
<i>Negative social support</i>				
Not on good terms with at least one individual in network (dichotomized)	0.48 (0.50)	0.59 (0.49)	1.72 (1.18–2.50) **	1.49 (0.97–2.28)
<i>Social support / relationships</i>				
Got advice from or talked to at least one network member	0.96 (0.19)	0.92 (0.28)	0.40 (0.17–0.95) *	0.42 (0.17–1.03)
Had at least one network member who participant trusted with money	0.66 (0.48)	0.68 (0.47)	1.09 (0.70–1.69)	1.12 (0.71–1.75)
Participants socialized with two or more network members	0.44 (0.50)	0.32 (0.47)	0.61 (0.40–0.94) *	0.63 (0.41–0.99) *
Mean trust participant has for network members	8.61 (1.56)	8.20 (1.84)	0.87 (0.77–0.98) *	0.90 (0.79–1.02)
<i>Relationship types</i>				
Number of non-kin in network	2.06 (2.02)	2.85 (2.67)	1.16 (1.08–1.26)	1.14 (1.04–1.25) **
Participant has 2 or more close friends	0.58 (0.49)	0.56 (0.50)	0.92 (0.61–1.39)	0.90 (0.59–1.38)
Participant has at least one person in sex network	0.84 (0.37)	0.78 (0.42)	0.68 (0.41–1.13)	0.65 (0.38–1.10)
Participant lives with at least one other person	0.79 (0.40)	0.77 (0.42)	0.86 (0.53–1.41)	0.89 (0.54–1.49)
<i>Instrumental support</i>				
Had at least one network member pitch in to help participant	0.89 (0.32)	0.88 (0.32)	0.99 (0.52–1.88)	1.17(0.60–2.28)
Had at least one network member who loaned money/valuables to participant	0.80 (0.40)	0.80 (0.40)	0.99 (0.59–1.66)	0.92 (0.54–1.57)
Had at least one network member who would let participant stay at their place	0.91 (0.29)	0.79 (0.41)	0.40 (0.22–0.70) **	0.40 (0.22–0.72) **
<i>Drug use network</i>				

	Participants without PTSD mean or proportion (SD)	Participants with PTSD mean or proportion (SD)	Unadjusted OR PTSD (CI)	Adjusted OR PTSD (CI)^T
Participant drinks alcohol with at least one other person	0.47 (0.50)	0.44 (0.50)	0.89 (0.59–1.34)	0.77 (0.50–1.18)
Number of network members who used heroin, cocaine, crack past 6 months	0.70 (1.14)	0.98 (1.30)	1.21 (1.03–1.43) [*]	1.05 (0.87–1.28)

^{*}
p 0.05

^{**}
p 0.01

^{***}
p 0.001

^T
Adjusted for homelessness in the past 6 months, lack of current employment, and cocaine/heroin in the past 6 months

Table 3

Logistic regression models predicting PTSD among urban women

Predictor	Model A: Neighborhood only model			Model B: Social network only model			Model C: Neighborhood and social network model		
	OR	p	CI	OR	p	CI	OR	p	CI
Like to move away from neighborhood	1.30	0.3	0.79, 2.16				1.27	0.37	0.75, 2.14
Dissatisfaction with block	1.96	0.01	1.18, 3.25				1.80	0.03	1.07, 3.04
Neighborhood total months <5 years vs. greater	1.60	0.05	1.00, 2.56				1.69	0.03	1.04, 2.74
Participants socialized with 2+ network members				0.61	0.04	0.37, 0.98	0.61	0.04	0.36, 0.97
Mean trust participant has for network members				0.95	0.45	0.83, 1.09	0.98	0.73	0.85, 1.12
At least one network member who would let participant stay at their place				0.42	0.005	0.22, 0.77	0.40	0.004	0.21, 0.75
Number of members not on good terms with				1.34	0.005	1.09, 1.64	1.28	0.02	1.04, 1.57
Homelessness	2.30	0.003	1.32, 3.98	2.09	0.009	1.20, 3.62	2.29	0.004	1.30, 4.05
Unemployed	1.91	0.03	1.07, 3.44	1.98	0.02	1.10, 3.56	1.85	0.04	1.02, 3.36
Heroin / cocaine / crack use	1.49	0.08	0.95, 2.32	1.47	0.09	0.94, 2.30	1.41	0.15	0.89, 2.23

*
p 0.05**
p 0.01***
p 0.001