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Whose Stress is Making Me Sick? Network-stress and Emotional Distress in African-American Women

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Abstract

Research on stress-related health outcomes in African American women often neglects “network-stress:” stress related to events that occur to family, friends, or loved ones. Data from the African American Women’s Well-Being Study were analyzed to examine self-stress and network-stress for occurrence, perceived stressfulness, and association with symptoms of psychological distress. Women reported a higher number of network-stress events compared to self-stress events. Occurrences of network-stress were perceived as undesirable and bothersome as self-stress. Both types of stress were significantly associated with psychological distress symptoms. Including network-stress may provide a more complete picture of the stress experiences of African American women.

Keywords

African American women; Stress; Social Network; Network Stress; Health Disparities

Stress, including discrimination or racism-related stress, has been identified as one of the most important social determinants of health and health inequities across populations and across health outcomes (Braveman et al., 2011; Jones, 2002; Marmot, 2005; Wilkinson &

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Marmot, 2003; Williams & Mohammed, 2009; Williams, Neighbors, & Jackson, 2003). The National Institutes of Health has prioritized research to better understand the social determinants of health disparities, including research on psychological stress (Boyce & Olster, 2011). It is critical to incorporate accurate and comprehensive definitions and measures of stress in the lives of African American women. African American women are exposed to disproportionately high levels of stress as a result of their race/ethnicity, gender, and socioeconomic position (Cole, 2009; Jackson, Hogue, & Phillips, 2005; Moradi & Subich, 2003; Nuru-Jeter et al., 2009; Rosenthal & Lobel, 2011; Woods-Giscombé & Lobel, 2008). Physiological responses to life stressors contribute to cardiovascular, immune, and neuroendocrine responses that, when experienced chronically, adversely influence health outcomes in African American women, including hypertension, obesity, diabetes, untreated mental health conditions, and adverse birth outcomes such as preterm birth and low birth weight (American Psychiatric Association, 2015; Dominguez, 2011; Geronimus, Hicken, Keene, & Bound, 2006; Krieger, 2005; McEwen, 2012; Williams, 2009).

A growing body of literature suggests that such health disparities are related to the specific ways in which African American women experience and respond to life stressors (Giscombé & Lobel, 2005; Woods-Giscombé & Lobel, 2008; Rosenthal & Lobel, 2011).For the purpose of this paper, “stressors” are operationalized as demands, threats, stimuli, or other events in the environment to which an individual is exposed (Lazarus & Folkman, 1984). Stressors that are inadequately managed by intrapersonal, interpersonal or tangible resources may result in “distress,” which is characterized as an aversive state that may include physical or psychological symptoms (e.g., tension, worry, weakness, or headaches) (Dohrenwend & Dohrenwend, 1974). There is evidence that increased psychological distress in African American women is influenced by the intersection of race- and gender-related stress, in addition to factors such as social status, increase psychological distress in this group (Berger & Guidroz, 2010; Geronimus et al., 2006; Jackson, Rowley, & Owens, 2012; Hamilton-Mason, Hall, & Everett; 2009; Krieger, 2012; Mullings, 2006; Perry, Harp, & Oser, 2013; Thomas, Hacker, & Hoxha; 2011; Woods-Giscombé & Lobel, 2008). Research findings indicate that stress-related health outcomes in African American women might be influenced by perceived obligations to family members, friends, and community members to present an image of strength, even in the face of stressors that are race- or gender-related, or generic (Black & Peacock, 2011; Woods-Giscombé, 2010). Generic stressors are events or conditions including accidents, financial strain, or other crises or critical events that are not a direct result of one’s race or gender (Woods-Giscombe, 2008). African American women have often adopted a behavioral script of “strength,” encompassing self-reliance, self-sacrifice, and self-silence, to enhance survival in racist and sexist contexts that have existed over generations in the United States (Black & Peacock, 2011). The caregiving roles of many African American women can result in complex patterns of adaptation whereby they take on the needs of others while minimizing, neglecting, or postponing personal needs and self-care (Black & Peacock, 2011; Black & Woods-Giscombe, 2012; Carthron, Bailey, & Anderson, 2014; Carthron, Johnson, Hubbart, Strickland, & Nance, 2010; Samuel-Hodge, Skelly, Headen, Carter-Edwards, 2005; Woods-Giscombé, 2010).

Social networks and health among African American women

Researchers have documented the positive effects of social networks on a variety of health outcomes (Barefoot, Gronbaeck, Jensen, Schnohr, & Prescott, 2005; Rutledge et al., 2008; Seeman, 2000; Thoits, 2011; Troxel et al., 2010). Social networks have been found to represent a key resource, a form of "social capital," that may provide various forms of emotional, informational, or tangible support (Coleman, 1988). Both the structural features of social networks (e.g., size, composition) and the availability or lack of network-based resources in turn influence physical and mental health outcomes (Berkman & Glass, 2000). Compared to Whites, African Americans tend to have broader social networks that are more likely to include extended family, fictive kin (individuals unrelated by either blood or marriage who, nevertheless, have strong emotional and family-like ties), friends, or church members (George, 1988; Johnson & Barer, 1990).It may useful to examine and understand how, for African American women, a broad social network might not only provide greater potential sources of support, social capitol, and eustress, but also how it might provide greater sources of indirectly experienced stress exposure, crises, or other critical and potentially distressing life events. The research evidence on African American women's caregiving roles within their families and communities and their potential for prioritizing caregiving over self-care may place them at greater risk for detrimental health effects related to the life experiences of members of their social network (Black & Peacock, 2011; Samuel-Hodge et al., 2005; Woods-Giscombe, 2010).

The case for examining network events in stress research

Kessler and McLeod (1984, p. 620) defined "network events" as "life events that do not occur to the focal respondent but to someone deemed 'important'" in his or her social network. "Network-stress" then refers to perceived stress related to stressors in the lives of family members, friends, or other loved ones. This is in contrast to what could be termed "self-stress," or stress related to life events that occur directly to an individual. Thoits seminal work (1991) also suggested that assessment of psychological distress would benefit from a deeper understanding of role identity; that is, stressful life events related to the roles with which individuals most identify may have a stronger impact on psychological distress. According to these researchers, women might experience more network events than men because their social roles lend themselves to greater emotional involvement with people in their lives. To support this line of reasoning, Kessler and McLeod (1984) drew upon the classic work of Dohrenwend (1977), who showed that women (unlike men) were more likely to report among their most distressing life events crises experienced by members of their social networks, including friends, family, and neighbors. This foundational research suggested that network-stress should be integrated with traditional stress measures to provide a more contextualized perspective on life stress, especially among women. Kessler and McLeod (1984) made a strong argument for including network-stress when measuring stress, particularly in women.

Network-Stress and African American women

The classic, foundational, theoretical work on roles, networks stress and distress (Dohrenwend, 1977; Kessler & McLeod, 1984; Thoits, 1991) can be used to guide and enhance research on stress and health in African American women. As posited by theoretical frameworks such as the Superwoman Schema (Woods-Giscombé, 2010), the Strong Black Woman Script (Black & Peacock, 2011), and the Weathering Hypothesis (Geronimus et al., 2006), African American women's stress experiences encompass their roles as nurturers, caregivers, mothers, and community activists. Therefore, operationalizing and assessing network-stress may be an important key to understanding how their stress experiences contribute to their emotional and physical well-being, as well as stress-related health disparities. The purpose of the current study was to examine the experience of network stress in African American women. The following research questions were addressed: (1) What are the most common types of network events experienced by the African American women sampled in this study? (2) Do African American women report a greater number of network-stress events compared to self-stress events? (3) Is the perceived stressfulness of network-stress events similar to the perceived stressfulness of self-stress events? (4) Are self-stress and network-stress eventssignificantly associated with symptoms of psychological distress? (5) Is the perceived stressfulness of self-stress and network-stress significantly associated with symptoms of psychological distress?

Methods

The current study involves secondary analyses of data from the African American Women's Well-Being Study. The original study aimed to examine how psychological distress in African American women is influenced by race-related, gender-related, and generic stress, which are events or conditions including accidents, financial strain, or other crises or critical events that are not a direct result of one's race or gender (Woods-Giscombe, 2008). The original study did not examine network stress events, the differences between self-stress and network stress experiences, or their contributions to psychological distress.A full description of methods from this study was published previously (Woods-Giscombé & Lobel, 2008). The focus of the current study is on distinct concepts of self- and network-stress and how they contribute to distress in this population.

Participants

The data analyzed in this study come from the sample reported in Woods-Giscombé and Lobel (2008). The women (N = 189) all self-identified as Black or African American and ranged in age from 21 to 78 years (M = 41.5, SD = 14.3). A subset of women also self-identified as West Indian or Caribbean (3.7%), Latino (0.5%), African (0.5%), or a combination of African American/Black, West Indian/Caribbean, Latino, or African (7.4%). Approximately 80% resided in the Southeast of the United States at the time of data collection, while 20% lived in the Northeastern region of the United States. Approximately 37% were married, 23.8% single, 21.7% in a committed relationship but unmarried, 11.6% divorced, and 5.3% widowed. Approximately 54% had at least a bachelor's degree as their highest educational credential; 23% of those held a degree: master's, law, MD, or PhD. Nine

percent identified themselves as full-time students and 7.9% as part-time students. Median household income was between $26,000 and $50,000 annually with 37% reporting earning more than $50,000 and 25% earning less than $26,000. African American women with college education were intentionally oversampled in the original study to facilitate investigation of stress in African American women across ranges of low, median, and high income and education status. On average, women's psychological distress scores (M = 0.63, SD = 0.44) were lower than published norms for community samples. Sample descriptive statistics are presented in Table 1 and correlations among key variables are presented in Table 2.

Measures

Self- and network-stress—Self-stress includes events that happen directly to the individual. Network-stress includes events that happen to a loved one, family member, or friend that have the potential for being an indirect stressor for the individual. For the current study, 10 items from a measure of stressful life events used in previous research (Lobel, DeVincent, Kaminer, & Meyer, 2000; Woods-Giscombé & Lobel, 2008) were used to measure self-stress and network-stress. Women indicated whether these 10 events happened to them directly or to a close friend or family member in the past year (e.g., got arrested, physical injury, illness, or hospitalization, trouble with alcohol or drugs). If the event did occur, the participant indicated if the event happened to "self" or to someone in their network: "other." For every "self-stress" item endorsed, participants provided an appraisal or rating regarding how stressful ("undesirable or negative") the event was on a 4-point scale ranging from 0 = *not at all* to 3 = *very much*. Similarly, for every "network-stress" item endorsed, participants provided an appraisal on the same 4-point scale. Four indices were created: total number of self-stress events, total number of network-stress events, average self-stress appraisal (average appraisal of all 10 self-stress events) and average network-stress appraisal (average appraisal of all 10 network-stress events).

Distress—The measure of distress was the Hopkins Symptom Checklist (HSCL-58; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974), a brief version of the Symptom Checklist-90 that is a reliable and valid measure of psychological and physical distress symptoms that has been used in key studies of race and gender-related stress in African American women (see Klonoff, Landrine, & Ullman, 1999; Kwate et al., 2003). Five types of distress are assessed and included in a total symptom score: anxiety, depression, obsession-compulsion, interpersonal sensitivity, and somatization. Participants rate how much a "problem has bothered or distressed you" using a scale from 0 (not at all) to 4 (extremely) to represent the intensity of distress symptoms. The HSCL-58 exhibited high internal consistency in this study (alpha = .96).

Analysis plan

Descriptive statistics were used to identify the frequency with which network-stress events were experienced by the African American women sampled in this study. A paired-samples *t* test was conducted to determine if women report a greater number of network-stress events compared to self-stress events and if women would report greater average perceived stressfulness of network-stress events compared to the average perceived stressfulness of

self-stress events. Ordinary least squares (OLS) regression analyses were used to determine if network-stress events' occurrence and average perceived stressfulness and self-stress events' occurrence and average perceived stressfulness are significantly associated with symptoms of psychological distress. Demographic variables that had statistically significant associations with distress were included as covariates in the regression analyses.

Results

Correlations among key variables are presented in Table 2. The African American women who participated in this study experienced a range of 0–6 network events. Fifty-six percent of the sample ($n = 106$) reported experiencing at least one network-stress event. Of those who experienced at least one network-stress event, 37% ($n = 40$) experienced just one event; 24.5% ($n = 26$) experienced two network-stress events. First, we examined the first research question, "What are the most common types of network events experienced by the African American women sampled in this study?" The most commonly experienced network stress events included having a loved one who experienced being fired or laid off from work ($n = 42$); a serious illness, injury, or hospitalization ($n = 39$); problems with alcohol or drugs ($n = 33$); or an arrest or trouble with the law ($n = 21$). The least commonly experienced network-stress events included having a loved one who experienced divorce ($n = 6$), mugging or personal assault ($N = 8$), or separation from spouse or partner ($n = 12$). Next, we examined the second and third research questions, "Do African American women report a greater number of network-stress events compared to self-stress events?" and "Is the perceived stressfulness of network-stress events similar to the perceived stressfulness of self-stress events?" Overall, women in the sample reported significantly more network-stress events in the past year ($M = 1.25$, $SD = 1.45$) compared to self-stress events ($M = .76$, $SD = 1.07$); mean difference = −0.50, $t = -3.64$, df = 188, $p = .000$. In addition, the perceived stressfulness of network events ($M = 1.99$, $SD = 1.00$) was not significantly different from the average perceived stressfulness of self-stress events ($M = 1.92$, $SD = .71$); $t = -.365$, df = 43, $p = .72$.

Finally, we examined the fourth and fifth research questions, "Are self-stress and network-stress events significantly associated with symptoms of psychological distress?" and "Is the perceived stressfulness of self-stress and network-stress significantly associated with symptoms of psychological distress?" Before conducting the regression analyses to examine these final research questions, we examined correlations of demographic variables (age, income, and education) with distress. Age was the only demographic variable significantly associated with distress and was therefore included in the regression models (Table 2).

We used OLS regression analyses to determine if self-stress and network-stress events were significantly associated with symptoms of psychological distress. First, a model was estimated with only the number of self-stress events predicting distress. The number of self-stress events was significantly associated with distress: $\beta = .21$, $t = 2.89$, $p < .01$. Self-stress also explained a significant proportion of variance in distress scores, $R^2 = .064$, $F(2, 186) = 6.35$, $p = .002$. A second model was examined with only number of network-stress events and distress. Number of network-stress was significantly associated with distress: $\beta = .15$, $t = 2.13$, $p < .05$. Network stress also explained a significant proportion of variance in distress

scores, R^2 = .045, F(2, 186) = 4.41, p = .013. Next, network-stress was added to the regression model with self-stress; adding number of network events to the model with number of self-stress events explained an additional 3.2% of variance in distress symptoms: R^2 = .096, F(1, 185) = 6.53, p = .011; R^2 Change = .032. Both number of self-stress events (β = .23 t = 3.23, p = .001 and number of network-stress events (β = .18, t = 2.57, p = .011) were similarly associated with distress symptoms.

Finally, we used OLS regression analyses to examine if the average perceived stressfulness of self-stress and network-stress are significantly associated with symptoms of psychological distress. A regression model was estimated with only average perceived stressfulness of self-stress events. Average perceived stressfulness of self-stress events was not significantly associated with distress: B = .12, t = 1.11, p =.27, and it did not explain a significant proportion of variance in distress: R^2 = .016, F(2, 79) = .625, p = .538. A second model was estimated with only average perceived stressfulness of network-stress events and distress. Average perceived stressfulness of network-stress events was not significantly associated with distress: B = −.06, t = −.62, p =.54, and it did not explain a significant proportion of variance in distress: R^2 = .036, F(2, 103) = 1.92, p = .152. We did not examine a model including both perceived stressfulness of self- and network-stress because neither variable was significantly associated with distress.

Discussion

The purpose of the current study was to examine network-stress in the lives of African American women and, more specifically, to determine if there was a difference between reports of self-stress and network-stress and their association with symptoms of psychological distress. Our results indicated that African American women were exposed to a greater number of network-stress events than self-stress events. In addition, occurrences of network-stress were perceived as undesirable and bothersome as self-stress. Both self-stress and network-stress were significantly and positively associated with distress symptoms.

These findings corroborate the work of Kessler and McLeod (1984) who posited that network events are important to explore in women. Women's social roles and emotional connections with people from various aspects of their lives may expose them to a greater number of network stressors than the stressors that their experience directly. The distress related to helping their loved ones through hardships or difficulties appear to be just as distressing as their own personal stressors (Nuru-Jeter et al., 2009). In the current study, appraisal or perceived stressfulness of self- and network-stress events were not related to distress; only the frequency of self- and network-stress events predicted distress. Previous research has revealed similar findings (Kwate, Valdimarsdottir, Guevarra, & Bovbjerg, 2003); the occurrence of stress events may influence outcomes even when the subjective appraisal of these events does not.

Overall, the results from this study indicate that stress related to network events is important to assess in addition to self-stress related to directly experienced events. This finding has particular validity when contextualized within a framework for how social networks of African Americans influence health (e.g., Berkman & Glass, 2000; George, 1988). These

findings also adds to the growing body of research on the importance of using race- and gender-relevant conceptualizations of stress to understand stress-related health outcomes for African American women (Jackson et al., 2005; Perry et al., 2013; Thomas et al., 2011; Woods-Giscombe & Lobel, 2008; Woods-Giscombe, 2010).

As stated earlier, the most commonly reported network-stress events included having a loved one who experienced being fired or laid off from work, a serious illness, injury, or hospitalization, problems with alcohol or drugs, or an arrest or trouble with the law. Although a small body of research has explored the impact of loved ones' stressful life events on the physical and mental health of African American women (Williams & Lawler, 2001), most of this research has examined the burden of family member incarceration (Lee, Wildeman, Want, Matusko, & Jackson, 2014; Wildeman, Lee, & Comfort, 2013). African American men are incarcerated at a rate more than six times higher than non-Hispanic European American men (U.S. Department of Justice, 2010). In addition, African Americans disproportionally experience chronic disease morbidity (including heart disease, cancer, stroke, and diabetes), and are less likely to receive treatment for substance abuse conditions compared to their European American counterparts when adjusted for criminal history and Medicaid enrollment (Lê Cook & Alegria, 2011). These facts illustrate the potential sources of network-stress exposure among African American women.

Limitations and Future Directions

The findings of this study provide information regarding the value of assessing network events when examining stress in African American women. However, it is possible that African American women might be less comfortable reporting feeling bothered or upset by events that happened to them because—as posited in the Superwoman Schema framework (Woods-Giscombé, 2010)—they may feel obligated to present an image of strength or to suppress their emotions. They might also consider it as less sociably acceptable to report feeling overwhelmed or bothered by their own life experiences (Black & Peacock, 2011) and more sociably acceptable to report stress experienced by loved ones. This may be especially true if they perceive that prioritizing the well-being of others before their own is a requirement of their role as a caretaker, mother, sister, partner, or friend (Black & Peacock, 2011). These possibilities may have influenced the data collected in the study whose data set was used for this secondary analysis. Future studies might explore alternate methods for posing questions to participants to help women feel as comfortable as possible sharing personal experiences with stress. In addition, only 10 potential self-stress and network-stress events were assessed in this study. Future research on self- and network-stress may benefit from the inclusion of additional stressors to more comprehensively assess stress in this population.

Findings from this study illustrate the importance of conceptually and operationally differentiating direct self-stress experiences from network-stress experiences in research with African American women. Assessments of stress that include only measurements of self-stress (directly experienced life events) will likely provide an incomplete picture. This is particularly relevant given the many potential sources of network-stress (e.g., family members, friends, church or religious family, co-workers) and how they could affect the

potential risk for stress-related disparities in this population. It is also possible that a woman's network's characteristics (e.g., size, composition, percentage of kin, availability) could affect her risk for experiencing network-stress, particularly if the network is deficient in positive or health-promoting resources (e.g., positive support) that can buffer experienced or perceived stress. Also, individual characteristics and role identities should be studied further for their associations with life stress.

It is interesting to note that, on average, participants in the current study were well-educated and reported a moderately high income. This suggests that relationships' psychological stress is an important phenomenon to explore even in relatively advantaged, well-educated samples. Previous research reveals that higher socioeconomic status (e.g., education attainment) does not necessarily translate into higher levels of emotional well-being for African American women (Jackson, 2003). There may be particular ways that demographic factors such as education, household income, and marital status or relationship quality interact with exposure to workplace discrimination, job satisfaction, and household role responsibilities to influence psychological well-being (Jackson, 2003). It may be important to also examine whether African American women with moderately high economic means and levels of education are particularly identified by their friends and family as sources of economic support and other resources and how related obligations may increase risk for stress and stress-related health conditions. Future research with African American women from various demographic strata would help to elucidate some of these relationships.

The findings from this study have implications also for stress management interventions for African American women. Strategies that encourage women to manage exposure and reactivity to their personal life-stress might be inadequate if network-stress similarly affects their overall well-being. Modifications to stress management interventions can be made to help women identify and develop healthy coping strategies for network-stress (e.g., Woods-Giscombe & Black, 2010). A growing body of evidence demonstrates the significant impact that stress can have on African American women's health, morbidity, and mortality (e.g., Geronimus et al., 2006); research on network-stress will be key to ensuring a culturally relevant, comprehensive, and effective approach to advancing mental and physical well-being in this population.

The findings suggest that investigations of stress should include both occurrence of events and perceived stressfulness of those events because one and not the other may be associated with outcomes. Further research could also examine how phenomena, such as Superwoman Schema and specifically perceived obligations to present an image of strength, influence African American women's report of perceived stressfulness of life events.

Qualitative research investigating women's perceptions of network-stress may be a valuable approach to further conceptualizing and operationalizing this concept. In addition, participants in this study provided information about stressors that occurred over the past year and distress symptoms that they experienced over the past month. Of great value would be research using a prospective, longitudinal design to better understand how self- and network-stress predict distress and other potential outcome variables (e.g., smoking or overeating) in this population. Future research may also include a wider range of

demographic status as well as greater representation from women who self-identify as African or Caribbean to enhance the generalizability of the study's results.

Future investigations of network-stress may further illuminate the importance of including this concept in standard investigations of stress in this population.

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Table 1

Sample Description

	N	%
Age		
21–30	56	29.6
31–40	36	19
41–50	39	20.6
51–60	41	21.7
61–70	13	6.9
71–80	4	2.1
Marital Status		
Married	70	37.0
Committed relationship	41	21.7
Single, not in a committed relationship	45	23.8
Divorced	22	11.6
Widowed	10	5.3
Other	1	0.5
Education		
<11 years	5	2.6
High school diploma	16	8.5
Trade school/Associates degree	20	10.6
4-Year College, did not complete	37	19.6
College, graduated	67	35.4
Master’s or Terminal degree	44	23.3
Household income		
Less than 15K	23	12.2
15K–25K	25	13.2
26K–50K	70	37
51K–75K	32	16.9
76K–100K	24	12.7
More than 100K	15	7.9
Income		
Less than 15K	23	12.2
15K–25K	25	13.2
26K–50K	70	37
51K–75K	32	16.9
76K–100K	24	12.7
More than 100K	15	7.9
Student status		
Not a student	156	82.5
Student	33	17.5

Table 2

Correlations of Key Variables

	1	2	3	4	5	6	7	8
1. Self-stress Events	-							
2. Network-stress Events	−.09							
3. Self-stress Appraisal	.94***	−.07	-					
4. Network-stress Appraisal	−.11	.94***	−.09	-				
5. Distress	.23**	.17*	.24**	.17*	-			
6. Age	−.18*	−.17*	−.18*	−.20**	−.15*	-		
7. Education	−.17*	.06	−.15*	.07	−.11	.11		
8. Income	−.20**	.07	−.17*	.05	−.13	.22**	.58**	

* $p < .05$.

** $p < .01$.

*** $p < .001$.