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The Giscombe Superwoman Schema Questionnaire: Psychometric Properties and Associations with Mental Health and Health Behaviors in African American Women

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Abstract

The purpose of this research was to examine the psychometric properties of the Giscombe Superwoman Schema Questionnaire. Three separate studies conducted with 739 African American women provided preliminary evidence that the Questionnaire's factor structure aligns with the Superwoman Schema Conceptual Framework and has good reliability. In addition, it is positively associated with perceived stress, depressive symptoms, using food to cope with stress, poor sleep quality, and physical inactivity. This study provides preliminary evidence to suggest that the Giscombe Superwoman Schema Questionnaire is psychometrically sound; Superwoman Schema is associated with health behaviors and psychological states that may increase risk for illness.

African American women experience disproportionately high rates of stress-related chronic health conditions compared to non-Hispanic white women. They are more likely to be overweight or obese and have higher rates of diabetes, cardiovascular disease, and morbidity related to a variety of other stress-related conditions (Centers for Disease Control and Prevention, 2013). African American women are also at higher risk for stress-related physiologic aging compared to white women (Geronimus, Hicken, Keene, & Bound, 2006; Geronimus et al., 2010), even after adjusting for socioeconomic factors.

Over the past twenty years, mounting evidence has demonstrated links between psychological stress and adverse health outcomes among African American women (Allen et al., 2019; Geronimus, 2001; Geronimus et al., 2006; Jackson, Phillips, Hogue, & Curry-Owens, 2001; Nuru-Jeter et al., 2009; Woods-Giscombe & Lobel, 2005). Relationships

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among stress, health behaviors, and psychophysiological processes that influence a range of mental and physical health outcomes have been described by various researchers (Clark, Anderson, Clark, & Williams, 1999; Williams, Mohammed, Leavell, & Collins, 2010). Psychological stress in African American women, including race- and gender-related stress, has been linked with inadequate physical activity and stress-related eating behaviors that may increase risk for obesity and influence biomarker activity associated with increased risk for chronic illness including cortisol, C-reactive protein, and cardiovascular disease (Allen et al., 2019; Geronimus et al., 2010; Guyll, Matthews, & Bromberger, 2001; Lewis, Aiello, Leurgans, Kelly, & Barnes, 2010; Woods-Giscombe, Lobel, & Zimmer, 2012). Despite this growing body of evidence, more research is needed to understand the mechanisms linking stress to health outcomes in African American women. Specifically, there is an urgent need to understand the cognitive, affective, social, and behavioral factors that influence African American women's life experiences and in turn, their health and healthcare decision making (e.g., engagement in healthy behaviors and utilization of healthcare services). In addition, the sociohistorical context that influences health behaviors and health outcomes is also critical (Williams & Mohammad, 2009; Williams, Neighbors, & Jackson, 2003; Williams & Williams-Morris, 2000) for informing culturally tailored interventions to meet the specific needs of target populations (Fisher, Burnet, Huang, Chin, & Cagney, 2007; Galloway-Gilliam, 2013).

To address these issues, researchers have begun to consider how the intersection of gender and race/ethnicity may influence associations between stress and health. The broad scope of this emerging body of research includes contextually and culturally relevant factors that may influence the stress-health relation among African American women (Woods-Giscombe & Lobel, 2008). One specific phenomenon that has received increasing attention is captured by the related concepts of the Superwoman/Strong Black Woman (Beauboeuf-Lafontant, 2007; Black & Peacock, 2011; Mullings, 2005; Nelson, Cardemil, & Adeoye, 2016; Wallace, 1990; Woods-Giscombe, 2010). Researchers have argued that the Superwoman/Strong Black woman role represents a posture of resilience and self-efficacy adopted as a way to confront and survive life adversity in a race- and gender-conscious society, and that understanding this phenomenon is critical to grasping a more complete picture of the intrapersonal, interpersonal, and sociohistorical dynamics of African American women's physical and emotional health (see Beauboeuf-Lafontant, 2003; 2009; Black & Woods-Giscombe, 2012; Edge & Rogers, 2005; Harrington, Crowther, & Shipherd, 2010; Warren, 1994; Woods-Giscombe & Black, 2010). To address this need, our aim was to develop and examine the psychometric properties of an instrument intended to further operationalize the construct for use in studies investigating African American women's health.

The Superwoman Schema (SWS) Conceptual Framework (Woods-Giscombe, 2010) provides a comprehensive and multidimensional description of the cognitive, affective, and behavioral underpinnings of the Strong Black Woman/Superwoman role. Developed from eight focus groups consisting of a demographically diverse sample of African American women, the SWS framework includes five distinct characteristics: (a) obligation to present an image of strength, (b) obligation to suppress emotions, (c) resistance of vulnerability or dependence on others for support, (d) motivation to succeed despite limited resources, and (e) prioritization of caregiving over self-care. These five characteristics have both perceived

benefits such as self-, family-, and community-preservation, as well as liabilities such as stress embodiment, delayed health seeking, stress-related health behaviors that may increase risk for illness, and relationship strain. According to this empirically grounded conceptual framework, SWS characteristics develop as a result of sociohistorical contextual factors, including racial and gender stereotyping and oppression, lessons from foremothers on how to survive, past experiences with mistreatment and abuse, dissatisfaction with unfulfilled promises of support or assistance, and even perceived spiritual or religious values that encourage them to maintain determination and endure life's challenges through support and faith in God, rather than others.

The purpose of this study is to describe the development and psychometric evaluation of an inventory to measure SWS, the Giscombe Superwoman Schema Questionnaire (G-SWS-Q) was named after the creator of the SWS Conceptual Framework, Cheryl Woods-Giscombe, to differentiate the inventory from other scales developed to facilitate research examining potential relationships among the "Superwoman" construct and physical and emotional health in African American women. A psychometrically sound instrument that can assess Superwoman characteristics is imperative for advancing this area of research. The G-SWS-Q is the first instrument developed to align with all five characteristics of the SWS Conceptual Framework. What follows is a description of the methodology and results of three distinct studies: (a) Study I, a qualitative component to generate items for the questionnaire based on the Superwoman Schema Conceptual Framework, (b) Study II, a psychometric evaluation of the factor and internal structure G-SWS-Q, and (c) Study III, a second psychometric evaluation of the reliability and validity of the G-SWS-Q.

Study I methodology and analyses

Study I was designed to develop an empirically and theoretically grounded instrument congruent with the SWS Conceptual Framework to facilitate empirical examination of SWS and its potential association with health in African American women (Woods-Giscombe, 2010). Study I was conducted as the second part of a two-phase research project. The previously reported first phase (Woods-Giscombe, 2010) was designed as a qualitative study to develop the SWS Conceptual Framework.

Sample and procedure

The sample for Study I included 48 women who participated in eight focus groups to provide qualitative data to develop the SWS Conceptual Framework (sample and procedure are previously described in Woods-Giscombe, [2010]) and items for the preliminary G-SWS-Q. Purposive sampling was used to facilitate participation of African American women from a range of age and other sociodemographic characteristics: (a) aged 18–24 with and without college education, (b) aged 25–45 with and without college education, (d) over age 45 with and without college education, (f) African American women of a variety of ages who resided in a public housing community who did not have college education, and (h) African American women of a variety of ages who had completed terminal education degrees (e.g., PhD, JD). Flyers distributed at community centers, hair salons, organizational meetings, health clinics, and a historically Black university campus were used to recruit

participants. A telephone screening process was used to determine if interested women met eligibility criteria; eligible women were scheduled to participate in a 2-h focus group corresponding to their demographic background. Women received $30 and a meal during the focus group as an incentive for their participation. The Study 1 protocol received approval from the Institutional Review Board.

Focus group discussions were guided by questions such as: (a) When I say the word *stress*, what does it mean for you? (b) What causes stress in your life? (c) How do you cope with stress? (d) How did you see the women (e.g., mothers, grandmothers) in your life cope with stress? (e) Have you ever heard the term *Strong Black Woman/Black Superwoman*? (f) What is a Strong Black Woman/Black Superwoman? (g) What are her characteristics? (h) How did they develop? (i) Is being a Strong Black Woman/Black Superwoman a good thing? (j) Is there anything bad about being a Strong Black Woman/Black Superwoman?

As described in Woods-Giscombe (Woods-Giscombe, 2010), analytic induction (Frankland & Bloor, 1999) guided the process of identify themes and codes from the data. This resulted in the identification of the SWS Conceptual Framework, which included SWS dimensions, contributing contextual factors, perceived benefits, and perceived liabilities. After analysis was completed, participants received a summary of the findings in the mail and were invited to contribute feedback via written or verbal correspondence.

Participants from the original eight focus groups were invited to participate in two subsequent meetings to discuss preliminary items developed from qualitative data analysis. The women “member checked” themes and codes derived from analysis of the eight original SWS focus groups, and they evaluated and provided feedback on the content and clarity of the initial G-SWS-Q. Twenty-eight of the original 48 focus group participants assessed and shared written comments about potential items, their clarity, readability, and relevance. Next, participants engaged in a facilitated discussion to obtain their feedback on the overall SWS concept. Participants were paid $30 and received a meal for their time and participation.

Study I results

Analysis of participants’ feedback, in addition to review and discussion of questionnaire items conducted by a larger group of the interdisciplinary research team members, resulted in 35-items that corresponded with the five dimensions of the SWS Conceptual Framework: (a) obligation to present an image of strength (six items), (b) obligation to suppress emotions (seven items), (c) resistance to being vulnerable or dependent (nine items), (d) determination to succeed, despite limited resources (seven items), and (e) obligation to help others (prioritizing care for others over self-care) (six items). All items in the G-SWS-Q are statements which the participants rate using the following response scale: 0 = *this is not true for me*, 1 = *this is true for me rarely, 2 = this is true for me sometimes, and 3 = this is true for me all of the time*. Responses are summed across items resulting in a summary score for each subscale, where higher scores reflect greater endorsement of the selected SWS characteristic. Table 1 shows the overall G-SWS-Q and each of the subscales.

Study II methodology

In Study II, we conducted a psychometric evaluation of the G-SWS-Q, involving a confirmatory factor analysis (CFA) to confirm the G-SWS-Q structure and examination of score distributions, item-total correlations, and internal consistency (see Steed, 2013).

Sample and procedure

In Study II psychometric evaluation of the G-SWS-Q was conducted with a convenience sample of 561 African American women, aged 18–65. The age range was selected to match the age range of the dataset of Study I (See Table 2). Email correspondence and flyers were distributed at universities and with community organizations and other purposive community-based venues (e.g., churches, nail salons) to recruit study participants. Interested individuals were contacted by the research team to conduct a preliminary screening for study eligibility. Eligible participants were administered the survey using online survey software and via in-person paper/pencil self-administration when online administration was not feasible. Overall, data were collected from participants representing various geographical regions, including the West (San Francisco Bay area), Midwest (Wisconsin area), Northeastern and Southeastern regions of the United States (see Allen et al., 2019; Steed, 2013). The data collected was stored in a secured file, which was accessible by only the research team members. Approximately 16.65% of cases (almost exclusively from the data collected online) excluded age. Because this data were also collected to conduct future research to examine age related factors predicting SWS endorsement, imputation of age was not appropriate (Hoyle, 2012). Instead, list-wise deletion (i.e., complete-case analysis) was used (Hoyle, 2012). The final sample included 561 African American women, which provided an appropriate sample size of at least 10 participants per item and/or samples of at least 200–400 participants to conduct a confirmatory factor analysis of this 35-item questionnaire (Bentler & Chou, 1987; Jackson & Trull, 2001).

Analysis

The internal consistency of the G-SWS-Q was assessed using the established Cronbach's alpha range of acceptability (minimal value of $\alpha < 0.70$) (Cronbach, 1951). To investigate if there was a statistically significant association among the G-SWS-Q subscales, a correlation was computed between each subscale. The CFA model hypothesized *a priori* that: (a) responses to the G-SWS-Q could be explained by five subscales, (b) each item would have a non-zero loading on the G-SWS-Q subscale it was designed to measure, and zero loadings on all other subscales, (c) the five subscales would be correlated and, (d) measurement error terms would be uncorrelated (Byrne, 1994). The estimated parameters in the CFA model were evaluated using the following goodness-of-fit indices: Chi-square statistic (χ^2), Satorra-Bentler scaled chi-square test statistic (S-B χ^2), the comparative fit index (CFI), root mean square error of approximation (RMSEA), akaike information criterion (AIC), and consistent akaike information criterion (CAIC).

Study II results

Descriptive statistics

Descriptive statistics (subscale ranges, means, and item-total correlations) are presented in Table 1.

Internal consistency

The G-SWS-Q subscales provide good internal consistency (Table 1): obligation to present an image of strength (α = .70); obligation to suppress emotions (α = .85), resistance to being vulnerable (α = .86), an intense motivation to succeed despite limited resources (α = .71), and obligation to help others (α = .87).

Subscale correlations

Table 3 shows that the five subscales were significantly correlated. The strongest G-SWS-Q subscale correlation is observed between feeling an obligation to suppress emotions and feeling more resistance to being vulnerable, r(561 = .65, p < .01.

Confirmatory factor analysis (CFA)

CFA was used to examine the five-factor structure of the G-SWS-Q in accordance with the existing SWS Conceptual Framework. The goodness of fit statistics indicated a good model fit (S-$B\chi^2$ (1100) = 2198.72, p < .01; RMSEA = 0.06; CFI = 0.97; AIC = 2518.72; CAIC = 3371.47). The standardized factor loadings ranged between 0.38 and 0.93. Overall, the factor structure (5 subscales) meets expectations and is in alignment with the SWS Conceptual Framework.

Study III methodology

Study III included examination of internal consistency, inter-item and item total correlations, test-retest reliability, and constructs validity by assessing associations of G-SWS-Q with other theoretically related variables.

Sample

A convenience sample of 130 women participated in Study 3, with a mean age of 41.19 years, SD = 14.74, range = 18 – 75. Participants were recruited from hair salons, civic and church organizations, and via listserv groups. Potential participants emailed or called study staff to express interest in participating in the study. Self-identified African American or Black women over the age of 18 were eligible to participate. Participants were emailed instructions on how to access and use the online survey software and a link to the study survey. Prior to having access to the study survey questions, participants indicated agreement with the informed consent process via the web-based software. Those who did not indicate agreement, were not able to proceed to the web-based survey questions. Participants were provided a $20 gift card for completion of the survey. Women were notified that they could volunteer to complete a second survey to assess the stability over time of the G-SWS-Q. Participants who volunteered were instructed that they should complete the second survey questions within approximately 4-8 weeks after the initial completion, and they were sent

reminders via email to do so. This was designed to facilitate evaluation of test-retest reliability of the G-SWS-Q. A total of 36 women, who completed the G-SWS-Q at the first timepoint, completed the survey at the second timepoint. Gift cards in the amount of $20.00 were provided to participants who completed the second online survey. This study was approved by the Institutional Review Board.

Instruments

The *Perceived Stress Scale-4 (PSS-4)* assesses the degree to which respondents find their lives unpredictable, uncontrol-lable, and overloaded (Cohen, Kamarck, & Mermelstein, 1983). Specifically, the PSS-4 includes four items that measure self-appraised stress during the last month. The PSS is psychometrically valid in samples of African American women, and has shown negative associations with overall health status and well-being (Young et al., 2004). The PSS has yielded good internal consistency in African Americans (α =.70–.91). In the current study, α = .80.

The *Center for Epidemiological Studies – Depression (CES-D)* is a validated ten-item scale used to assess how often participants experienced depressive symptoms, including restless sleep, poor appetite, loneliness, over the past week (Radloff, 1977; Miller, Anton, & Townson, 2008). Response options ranged from 0 = “rarely or none of the time” to 3 = “most or all of the time.” Responses were summed across items, resulting in a summary score ranging from 0 to 30, with higher scores indicative of greater depressive symptomatology. The CES-D has been used widely in diverse samples. The CES-D has had a normative mean score of 9.7 (range 0–25) and has yielded excellent internal consistency (α = .86), test-retest reliability, r = 0.85). The CES-D has also been validated for use among African American women (Shim, Baltrus, Bradford, Holden, Fresh, & Fuller, 2013). However, for the current study, Cronbach’s alpha was only .56, which is less than desirable.

The *Using Food to Cope (UFC) Scale* is a validated seven-item scale developed based on prior literature on African American women’s use of food to cope with stress (Hooks, 1993; Lovejoy, 2001; Weathers, 2003). The UFC measure examines various types of stress-related eating behaviors. Participants indicate how often they did each of the following over the past month as a way of coping with stress using a 5-point response scale (0 = Never to 4 = Very Often): treated myself to dinner at one of my favorite restaurants; ate boxed or canned foods because I had less time to cook; ate even when I was not hungry; ate beyond the point of fullness because the food was so satisfying; ate “comfort food” like bread, chips, chocolate, or sweets; got together with friends to eat; and ate out or ordered take out because I didn’t have time or energy to cook. The UFC Scale was significantly and positively associated with body mass index in a sample of 189 African American women, and it was significantly and positively associated with perceived stress in a sample of 68 African American adults with prediabetes, UFC was significantly and positively associated with body mass index (Woods-Giscombe et al., 2012). In a sample of African American adults with pre-diabetes, UFC was significantly and positively correlated with perceived stress (Woods-Giscombe et al., 2016).

The *Pittsburgh Sleep Quality Index (PSQI)* is a 19-item self-rated questionnaire used to assess sleep quality and disturbances over the past one month (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). Subjective sleep quality, sleep latency, sleep duration, habitual

sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction are assessed and sum to yield a global sleep quality score. This scale has been found to be psychometrically valid in a sample of African American men and women (Bidulescu et al., 2010).

The *Modified Physical Activity Questionnaire* (IPAC) assesses adherence to national recommendations for moderate and vigorous physical activity, as well as walking during the past seven days (Whitt-Glover, Hogan, Heil, & Lang, 2008). The scale yields met minutes per week scores for moderate, vigorous, and walking activity and has demonstrated psychometric validity in African Americans (Whitt-Glover et al., 2008). For the current study, $\alpha = .81$.

Analyses

We utilized descriptive statistics to examine subscale means, standard deviations, and ranges. Pearson correlations were used to examine inter-item and item-total correlations to assess the relationships among items and the five subscales and to examine test-retest reliability. Internal consistency reliability was examined using Cronbach's alpha. Test-retest reliability of the G-SWS-Q was examined by a follow-up administration of the questionnaire within 4–8 weeks after the initial administration among a subsample of 79 participants. To obtain evidence of construct validity, we used Pearson correlation coefficients to examine associations among the G-SWS-Q subscales and PSS, and CESD.

Study III results

G-SWS-Q subscales and descriptive statistics

G-SWS-Q subscale means range from 1.06 to 2.80 which corresponds with this is true for me rarely to this is true for me sometimes, respectively (See Table 4). Obligation to prioritize caregiving over self-care was the most highly endorsed dimension of the G-SWS-Q, participants rated endorsement of this dimension as the most bothersome compared to the other dimensions. The least endorsed G-SWS-Q dimension was obligation to suppress emotions, and the dimension rated as least bothersome was obligation to present an image of strength.

Item analysis and internal consistency

The G-SWS-Q subscales had a mean inter-item correlation ranging from 0.29 to 0.47 and median item-total correlations ranging from 0.41 to 0.65 (See Table 4). Internal consistency ranged from 0.72 to 0.89 for the five subscales (See Table 4).

Construct validity

Each G-SWS-Q subscale was significantly and positively associated with CES-D, ranging from 0.09 to 0.49 with $p < .05$. The G-SWS-Q subscales were significantly and positively associated with PSS ($r = 0.28–0.52$, $p < .05$ level. With the exception of motivation to succeed despite limited resources, each G-SWS-Q subscale was significantly and positively associated with emotional suppression ($r = 0.08–0.24$, $p < .05$). Each G-SWS-Q subscale was significantly and negatively associated with sleep quality ($r = 0.26–0.47$, $p < .05$).

Finally, each G-SWS-Q subscale was significantly and positively associated with physical inactivity ($r = 0.03–0.15$, $p < .05$. See Table 5 for construct validity correlations.

Test-retest reliability

For all except one subscale, the test-retest estimates for the G-SWS-Q ($r = 0.46–0.89$, $p < .05$) provided support for the temporal stability of the G-SWS-Q (See Table 4).

Discussion

The overall goal of the current research was to describe the psychometric evaluation of the G-SWS-Q, based on the five dimensions of the Superwoman Schema Conceptual Framework (Woods-Giscombe, 2010). This research provides preliminary evidence that the G-SWS-Q is psychometrically sound. Results provide support for the 5-factor structure, good internal consistency, scale stability, and construct validity of the G-SWS-Q. One of the primary strengths of the G-SWS-Q is that it is grounded in a conceptual framework that organizes and describes the underpinnings of SWS characteristics; this is the first scale developed to align with all five of the SWS components.

The G-SWS-Q was developed and evaluated to operationalize the SWS role as explicated in the SWS Conceptual Framework and provides support for its use in empirical studies. It may be used to assess associations with various other social determinants of health, including psychological stress and health behaviors, and eventually health outcomes among African American women (Woods-Giscombe, 2010). Analyses conducted to confirm the empirically and theoretically grounded structure of the G-SWS-Q supported a multidimensional, five component structure that was consistent with the conceptual dimensions derived from the previous qualitative work on SWS. The 35-item G-SWS-Q and the five subscales were positively and significantly correlated with perceived social stress, depressive symptoms, the use of food to cope with stress, poor sleep quality, and physical inactivity. However, resistance to vulnerability was not significantly associated with physical activity. These statistical associations corroborate the qualitative reports of African American women in Study 1. They also parallel other findings indicating that the Superwoman or Strong Black Woman role is associated with psychological distress, neglect of self-care, delayed health promoting behaviors, and possibly long-term risk for chronic illness (Beauboeuf-LaFontant, 2003; Black & Peacock, 2011; Black & Woods-Giscombe, 2012; Harrington et al., 2010). More research is needed to confirm these links and to understand how SWS may be adaptive for some and maladaptive for others.

This research corroborates the work of a growing number of researchers who have focused on quantitatively examining the Strong Black Woman/Superwoman construct and other aspects of the lived experience of African American women, including gendered and racialized stress and their influences on health and health disparities. Thomas and colleagues developed the *Stereotypic Roles for Black Women Scale (SRBWS)*, a 34-item measure developed to assess the endorsement of four stereotypes including Mammy, Sapphire, Jezebel, and Superwoman (Thomas, Witherspoon, & Speight, 2004). Research conducted with the SRBWS and its subscales (Mammy and Sapphire) have shown negative associations with self-esteem, anxiety, depression (Donovan & West, 2015; Harrington et al.,

2010; Thomas et al., 2004) and that endorsement of these stereotypic roles contributed to unique variance in understanding self-esteem in Black women, after, controlling for other psychosocial factors such as racial identity attitudes (Thomas et al., 2004). Harrington et al. (2010) incorporated the five-item Mammy and 11-item Superwoman subscales of the SRBWS and the six-item Efficacy of Help-Seeking Scale, a measure of self-sufficiency (Eckenrode, 1983; Harrington et al., 2010), to operationalize a construct identified as the Strong Black Woman (SBW) ideology. Their results showed that among African American women who are trauma survivors, SBW ideology predicted difficulties with emotion regulation and self-silencing, which in turn, predicted binge eating. More recently, Watson and Hunter (2015) combined the Mammy and Superwoman subscales of the SRBWS to create a construct referred to as "SBW race-gender schema (Watson & Hunter, 2015)." High SBW race-gender schema was significantly and positively associated with anxiety and depression and negatively associated with psychological openness and help-seeking propensity. Lewis and Neville (2015) developed the *Gendered Racial Microaggressions Scale for Black Women*, which includes four factors: (a) Assumption of Beauty and Sexual Objectification, (b) Silenced and Marginalized, (c) Strong Black Woman Stereotype, and (d) Angry Black Woman Stereotype (Lewis & Neville, 2015). Gendered-racial microaggressions were positively and significantly related to psychological distress. Taken together, this evidence suggests that characteristics of the strong black woman/superwoman concept are associated with stress exposure, especially traumatic stress, stress-related eating, psychological distress, and behavioral modification such as self-silencing and self-neglect. Collectively, these researchers have highlighted the importance of the intersection of race, gender, class, culture, and sexual identity in operationalizing the concept of "strength" and the Strong Black Woman/Superwoman role demonstrating it as a broader cultural and gendered phenomena in the lives of African American women (e.g., Shifting, Stereotypic Roles, Microaggressions, Gender Roles) (Carbado, Crenshaw, Mays, & Tomlinson, 2013; Crenshaw, 1989, 1991).

Several methodologic considerations should be noted. Although the G-SWS-Q was found to be positively and significantly associated with depressive symptoms, the internal consistency of the CES-D was less than adequate in this sample of African American women. Therefore, results should be interpreted with caution. Future studies are needed to determine if this finding exists in other samples of African American women. Additionally, associations among the G-SWS-Q and other culturally sensitive and validated measures of depression and psychological distress (e.g., perceived racism, gender-related distress, anxiety) should be examined. Although the women included in this study represented multiple regions of the United States and various age and educational backgrounds, Study I and II included a high number of African American women with college education, and an overrepresentation of women from the southeastern U.S. In addition, specific data on sexual identity was not collected in the three studies included in this psychometric analysis. Future research on the G-SWS-Q should include a broader representation of educational levels and include African American women who identify as gay, lesbian, transgender, or non-binary.

This research also has several strengths. The studies to develop and evaluate the G-SWS-Q spans over 10 years of collaborative work conducted by an interdisciplinary team of scientists representing mental health, nursing, social and health psychology, public health,

social epidemiology, family studies, sociology, and psychometric measurement and evaluation. A strength of the G-SWS-Q is that it simultaneously encompasses women's endorsement of strength, emotional suppression (a component of self-silencing), resistance of vulnerability or support from others, a motivation to succeed despite limited resources, and a prioritization of caregiving over self-care, thereby operationalizing the multidimensional strategies African American women use to manage their lives in a gender- and race-conscious society. Additional strengths of the G-SWS-Q include its grounding in the real life experiences of African American women, its alignment with a multidimensional conceptual framework based on thematic analysis of transcripts with African American women as well as consistency with the extant literature on the concept of strength and the Superwoman role, the geographically diverse pool of participants, the large sample size, and follow-up to confirm instrument stability.

Future investigations should compare the distinct characteristics of SWS to determine if some are more associated with health-related risks than others. It is reasonable to assume, and qualitative research on the SWS Conceptual Framework suggests, that certain aspects of this phenomenon may be more adaptive, while others may be deleterious. Future research should be conducted to understand how particular combinations of SWS characteristics may be more detrimental than others. For example, if a woman endorses high levels of strength obligation, emotional suppression, and prioritization of caregiving concurrently, would she be less likely to engage in health promoting behaviors than someone who only highly endorses one isolated dimension of SWS? In addition, future research should explore the concurrent and discriminant validity of the G-SWS-Q by evaluating the associations of SWS with other constructs (e.g., self-silencing, John Henryism).

Conclusion

Study results provide preliminary evidence for the psychometric properties of the SWS-Q. Support was found for the factor structure, internal consistency, temporal stability, and construct validity of the G-SWS-Q. The 35-item self-report scale shows promise as a valid measure of SWS and its multidimensional characteristics: strength, emotional suppression, resistance to being vulnerable, and motivation to succeed despite limited resources, as well as prioritization of caregiving over self-care. The findings of this study suggest that the G-SWS-Q can be used to better understand how SWS contributes to psychosocial well-being, and it has potential use for investigating how SWS influences health behaviors and stress-related health outcomes among African American women.

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Table 1.

Study 2—Descriptive statistics, item analysis, and reliability for the 5 G-SWS-Q subscales (N = 561).

G-SWS-Q subscales	Descriptive statistics				Reliability Cronbach's alpha
	Number of items	Range	Mean (SD)	Item-total correlations: Median (range)	
Obligation to Present an Image of Strength	6	0–18	13.61 (3.37)	0.46 (0.31–0.54)	0.70
Obligation to Suppress Emotions	7	0–21	11.06 (4.93)	0.62 (0.44–0.77)	0.85
Resistance to Being Vulnerable	7	0–21	12.34 (5.05)	0.56 (0.51–0.76)	0.86
Intense Motivation to Succeed	6	0–18	12.63 (3.52)	0.47 (0.31–0.55)	0.72
Obligation to Help Others	9	0–27	14.94 (6.45)	0.63 (0.41–0.70)	0.87

Table 2.

Sample demographics.[a]

	Study 2 (*N* = 561)	Study 3 (*N* = 130)
	Mean (SD) / *N*(%) (range)	Mean (SD) / *N*(%) (range)
Age	35.2 (8.79) (18–65)	41.95 (14.74) (18–75)
Race[a]		
African American or Black	363 (64.7%)	113 (86.9%)
West Indian or Caribbean	31 (5.5%)	3 (2.3%)
Native American	12 (2.1%)	2 (1.5%)
Latino	4 (0.7%)	2 (1.5%)
African	16 (2.9%)	2 (1.5%)
Other	17 (3.0%)	1 (0.8%)
Unreported on survey	159 (28.3%)	7 (5.4%)
Marital Status		
Married	172 (30.7%)	33 (25.4%)
Not married but living with a romantic partner	32 (5.7%)	10 (7.7%)
Married but separated	22 (3.9%)	5 (3.8%)
Divorced	32 (5.7%)	23 (17.7%)
Widowed	14 (2.5%)	4 (3.1%)
Single/never married	172 (30.7%)	40 (30.8%)
In a romantic relationship, but not living together	116 (20.7%)	8 (6.2%)
Children		
No children (including never been pregnant)	84 (15%)	52 (40.0%)
1	84 (15%)	29 (22.3%)
2	84 (15%)	23 (17.7%)
3	27 (4.8%)	5 (3.8%)
4	14 (2.5%)	3 (2.3%)
5	5 (0.89%)	1 (0.8%)
Education level		
Less than high school equivalent	44 (7.8%)	2 (1.5%)
GED or high school equivalent	42 (7.5%)	–

	Study 2 (*N* = 561)	Study 3 (*N* = 130)
High school diploma	39 (7.0%)	9 (6.9%)
Some college but did not graduate	101 (18%)	19 (14.6%)
Associate's degree or community college degree	52 (9.3%)	6 (4.6%)
Bachelor's degree	145 (25.8%)	47 (36.2%)
Master degree/terminal professional degree (Ph.D., J.D., NP, RN, MD, MSW, MBA, MA, MS)	137 (24.4%)	38 (29.2%)
Employment Status		
Working full-time for wages	332 (59.2%)	71 (58.2%)
Working part-time for wages	60 (10.7%)	12 (12.3%)
Not working/Not looking for a new job	27 (4.8%)	10 (8.2%)
Disabled	19 (3.4%)	–
Homemaker (keeping house or raising children full-time)	30 (5.3%)	9 (7.4%)
Student	56 (10%)	15 (12.3%)
Not working and not looking for a job	16 (2.9%)	2 (1.6%)
Military	10 (1.8%)	–
Other	9 (1.6%)	–
Health Insurance		
No insurance	85 (15.2%)	18 (13.8%)
Health insurance (private/public/self-pay)	337 (60%)	82 (63.1%)
No response	139 (24.8%)	30 (23.1%)
Personal Wages per Month after Taxes		
$0–$2000	99 (17.6%)	14 (10.8%)
$2001–$4000	149 (26.6%)	9 (6.9%)
$4001–$6000	78 (13.9%)	66 (50.8%)
$6001–$8000	29 (5.2%)	35 (26.9%)

[a]At consent, all participants reported Black or African American race. During the survey, participants were given an opportunity to provide more descriptive information about her race, including the ability to "select all" that were applicable to them (e.g., African American and Latino) or the ability to not respond to survey items (for race and other demographic variables). Therefore, the cumulative percentage exceeds 100% for race, and does not reach 100% for other demographic variables as some participants did not complete all items in the survey. Sample demographics for Study 1 were previously published. See citation deleted for blind review.

Table 3.

G-SWS-Q subscale correlation ($N = 561$).

Subscales	SWS1	SWS2	SWS3	SWS4	SWS5
1. Obligation to present an image of strength	1				
2. Obligation to suppress emotions	.298*	1			
3. Resistance to being vulnerable	.278*	.651*	1		
4. Intense motivation to succeed	.424*	.462*	.577*	1	
5. Obligation to help others (over self-care)	.336*	.501*	.571*	.526*	1

*Correlation is significant at the 0.01 level.

Table 4.

Study 3—Descriptive statistics, item analysis, and reliability for the 5 G-SWS-Q subscales (N = 130, N = 79 for test-retest reliability).

		Descriptive statistics			Item analysis		Reliability	
G-SWS-Q subscales	Number of items	Mean (SD)	Skewness (SE)	Kurtosis (SE)	Inter-item correlations: Mean (range)	Item-total Correlations: Median (range)	Cronbach's alpha	Test-retest reliability
Obligation to present an image of strength	356	11.20 (3.33)	0.32 (0.03)	−0.72 (0.06)	0.33 (0.21–0.62)	0.50 (0.41–0.58)	0.73	0.46*
Obligation to suppress emotions	7	14.16 (2.97)	−0.41 (0.03)	−0.27 (0.07)	0.42 (0.24–0.63)	0.58 (0.46–0.75)	0.83	0.86*
Resistance to being vulnerable	7	16.34 (3.50)	−0.13 (0.31)	−0.49 (0.06)	0.38 (0.12–0.66)	0.57 (0.33–0.69)	0.82	0.62*
Intense motivation to succeed	6	11.39 (3.12)	0.08 (0.03)	−0.89 (0.06)	0.29 (0.05–0.48)	0.41 (0.21–0.60)	0.71	0.71*
Obligation to help others	9	19.66 (4.21)	−0.39 (0.04)	−0.58 (0.07)	0.47 (0.28–0.63)	0.65 (0.49–0.72)	0.88	0.89*

Table 5.

Study 3—Pearson correlations between G-SWS-Q and CESD, PSS, EES, PSQI, and IPAQ (N = 130).

	SWS subscales				
	Obligation to present an image of strength	**Obligation to suppress emotions**	**Resistance to being vulnerable**	**Intense motivation to succeed**	**Obligation to help others**
CES-depression	0.09*	0.17*	0.15*	0.14*	0.19*
Perceived stress	0.22*	0.40*	0.33*	0.28*	0.32*
Using food to cope with stress	0.28*	0.52*	0.33*	0.37*	0.38*
Poor sleep quality	0.26*	0.37*	0.33*	0.33*	0.47*
Physical activity	−0.08*	−0.12*	−0.03*	−0.05*	−0.15*

*Significant at the level of 0.05.