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Minority Stress and Sexual Functioning among African American Women with At-Risk Partners in South Los Angeles

Abstract: Background: Preliminary evidence indicates that acute and chronic psychological stress affect sexual arousal and satisfaction. African American women, in particular, are vulnerable to the impacts of gender- and race-related stress, given their socially constructed identities as African Americans and as women. Aim: We examined associations between minority stress and sexual function using data from 248 African American women. Methods: Surveys were conducted with 248 African American women in South LA with male partners at risk for acquiring HIV. We analyzed self-reports on 1) stress indicators: chronic burden, perceived racism/sexism, and histories of trauma/sexual abuse; 2) Female Sexual Function Index domains: desire, arousal, and satisfaction; and 3) potential moderators: social support and spirituality. We used multiple regression, adjusting for potential confounding factors, to examine the relationships between stress indicators, potential moderators, and sexual function domains. Outcomes: The outcomes were the female sexual function index domains of desire, arousal, and satisfaction. Results: This largely low-income sample experienced significant chronic and acute stressors, was highly spiritual, and reported strong social support. Moderate-high chronic burden and increasing sexism scores were independently associated with decreased arousal ($B=-0.38$, $95\%CI=-0.75, -0.02$) and satisfaction ($B=-0.03$, $95\%CI=-0.06, 0.00$) scores, respectively. Clinical implications: Providers may want to explore chronic burden in patients who complain about low sexual arousal. Additionally, to develop effective HIV- and other STI-related interventions that impact behaviors that can confer sexual risk, prevention strategies are needed that either reduce contextual stressors or mitigate their impact. Strengths and Limitations:

24 Strengths of this research are that it focuses on sexual function among previously under-studied,
25 low-income African American women and that it takes into account the unique set of stressors
26 faced by these women. A limitation is that the sample size may have been too small to capture
27 the effects of potential moderators. Conclusions: Low income African American women
28 accumulate life stressors that may harm sexual function.

29

30

31 **Introduction**

32 Sexual health is increasingly recognized as an important aspect of general wellbeing. Positive
33 sexual health and sexual satisfaction, especially among women, have been shown to be
34 protective factors against risky sexual behaviors such as non-condom use and casual sex ¹⁻³. The
35 biopsychosocial approach to female sexual functioning recognizes that biological, psychological,
36 interpersonal, and sociocultural factors can all affect female sexual functioning, and that they
37 interact with one another in a dynamic system over time ^{4,5}. Hence, consideration of female
38 sexual functioning has the potential to complement traditional disease control and prevention
39 efforts related to HIV/AIDS and other sexually transmitted infections (STIs), as well as to
40 address social/emotional issues such as intimate partner violence and mental health.

41 The biopsychosocial approach identifies perceived stress as one of the factors that
42 contributes to poor sexual functioning and satisfaction, together with potentially overlapping
43 factors of hormonal imbalance, chronic diseases, anxiety, depression, incompatibility of couples,
44 and sexual function disorder in partners ⁶. However, limited research has been conducted on the
45 effects of stress on female sexual functioning, with preliminary evidence indicating that acute
46 and chronic psychological stress affect sexual arousal and satisfaction ⁷⁻⁹.

47 Stress, or the physiological demand placed on the body when one must adapt, cope, or
48 adjust to major life events, dangerous situations, and personal challenges, helps to keep the body
49 alert and the brain focused. However, prolonged exposure to stress can disrupt the body's
50 processes through over-activity of the autonomic nervous system in association with oxidative
51 imbalance, thus increasing the risk of numerous health problems such as cardiovascular disease
52 ^{10, 11}. Chronic stressors, particularly among racial and ethnic minorities, can be a result of
53 inequalities in employment, income, and educational opportunities as well as experiences of

discrimination^{12, 13}. African American women, in particular, are vulnerable to the impacts of gender- and race-related stress, given their socially constructed identities as African Americans and as women^{14, 15}. A number of investigations demonstrate that African American women experience discrimination in employment, health care, and education because of gender- and race-related biases^{14, 16, 17}.

Additional sexual health stressors that may particularly affect low-income African American women include the characteristics of their sexual partnerships, as the pool of potential partners for Black women is constrained by systemic, social, and cultural forces that limit choices and strain relationships. These factors include high levels of overlapping sexual partnerships or concurrency, the greater frequency of bisexual behavior observed among African American men who have sex with men (MSM) than among MSM of other race/ethnicities, and sometimes disempowering gender dynamics¹⁸⁻²¹. Collectively, the influences of these experiences on disparities in health outcomes can be measured and conceptualized using the minority stress model. The theoretical model proposes that health disparities among members of stigmatized minority groups can be explained by a number of factors, such as low socioeconomic status, and by stressors induced by a hostile environment that includes interpersonal prejudice and discrimination²². Minority stress refers to excess stress to which individuals from stigmatized social categories are exposed because of their social, often minority, and position. It has been associated with both negative physical and mental health outcomes²².

We explore the association of minority stress and sexual function among a sample of African American women with at-risk sexual partners who participated in an HIV behavioral intervention study conducted in South Los Angeles – a high poverty urban community that is impacted by disinvestment, poor employment opportunities and high rates of incarceration²³.

Based on the Diagnostic and Statistical Manual of Mental Disorders 5 definition of sexual dysfunction that informed the development of the scale for sexual function examined here²⁴, we define female sexual function as the persistent or recurrent ability to attain and maintain sufficient sexual excitement in a manner that supports general well being. It may be expressed as subjective arousal, desire, and satisfaction, including accompanying genital responses. The study explores the impact of minority stressors – chronic burden, racism, sexism, sexual abuse and other traumas – on sexual desire, arousal, and satisfaction. This study group represents a population that experiences unique and intersecting sets of experiences and stressors. Our analysis can improve understanding of the impacts on sexual function, identify potential targets for intervention, and inform sex-positive interventions to address sexual health.

Methods

Study participants and setting

Between September 2013 and March 2017, African American women ages 18 and above with male partners were invited to participate in a trial of an HIV/STI prevention intervention, the Females of African American Legacy Empowering Self (FemAALES) Project. Because the primary mode of HIV transmission for women is through heterosexual intercourse, eligibility was limited to women reporting male partners in the prior three months who were at increased risk for HIV. At-risk partners were defined as men who (1) had an unknown sexual history, (2) had sex with other men, (3) had sex with transgender women, (4) had been incarcerated for more than six months, or (5) had used injection drugs, crack cocaine, or methamphetamine. The intervention itself aimed to address sexual risks for HIV and STIs among women whose male

partners were at increased risk for HIV. It encouraged HIV testing and condom use and communication with partners about sex and sexual risk, including HIV testing.

The FemAALES Project was approved by the CDU/UCLA Institutional Review Board and registered with clinicaltrials.gov (#NCT02189876). All participants provided written informed consent prior to participation. Participants were recruited through direct and passive outreach at health fairs, outdoor shopping centers, and community events. As well as through social medial outreach and direct referrals from two federally qualified health centers that partnered with the study, from community based organizations, and from other study participants. Participants received cash compensation for completing study surveys.

Data collection and processing

The current study is based on data from the baseline surveys of FemAALES participants. Of the 254 enrolled FemAALES participants, 249 confirmed eligibility during the baseline survey and served as the analysis group. All surveys were administered via an audio-computer assisted self-interview (A-CASI) interface. The first set of sociodemographic questions was asked by the interviewer, who input the responses into ACASI, after which the participants self-entered the responses to the remaining questions. The survey took a mean of 91 (s.d. = 34) minutes to complete. It covered a wide range of socio-demographic, attitudinal, knowledge, substance use and sexual behavior factors, as well as information on respondents' prior and current experiences related to racism and sexism. Questions also included information about female sexual function, relationship status, chronic burden, social support, religiosity and spirituality, psychological distress, and traumatic life events.

Sexual function was assessed using questions from the Female Sexual Function Index (FSFI), a self-reported set of measures that assesses the level of functioning in the past four weeks using 5-point Likert scores (1-low; 5-high), with some items including 0 to indicate no sexual activity. We focused on the three subjective domains from the 5-domain FSFI that were included in the survey: 1) sexual arousal, 2) sexual satisfaction, and 3) sexual desire, as they were relevant to the intervention, which highlighted strategies for achieving sexual pleasure in the context of sexual health. The items in each domain are summed and then multiplied by a domain factor ratio to improve comparability across domains ²⁴. Possible arousal scores range from 0 to 6, and satisfaction scores range from 0.8 to 6. The domain scores for arousal and satisfaction showed high internal reliability (Cronbach's alpha: sexual arousal = 0.87, satisfaction = 0.86). We asked only one of the two questions from the desire domain, "Over the past 4 weeks, how often did you feel sexual desire or interest," so this item was analyzed based on its original Likert score, with a possible range of 1 – 5, and referred to as desire frequency.

Chronic burden was assessed using the 21-item Chronic Burden Scale that measures difficulties experienced in the past month from a number of stressors including insufficient money to meet basic needs, insufficient savings, being laid off from work, being a victim of a crime, and immigration and housing problems ²⁵. Each question had four possible responses: (1) Not a problem for me in the past month, (2) A little bit of a problem for me in the past month, (3) Somewhat of a problem for me in the past month, and (4) A major problem for me in the past month. Scores were dichotomized to low and moderate-to-high chronic burden based on the existing literature related to chronic burden among African American women at increased risk for HIV ²⁵. Possible scores range from 21 to 84. Given that we could not locate established cutoffs for this scale, we calculated tertiles and used the minimum of the middle tertile (29) as a

cutoff score to classify participants with moderate-to-high chronic burden. Cronbach's alpha showed high reliability (0.89) for the sample.

Psychological distress was measured using the Brief Symptom Inventory (BSI-18), which consists of 18 descriptions of physical and emotional complaints, with 6 items each for somatization, depression and anxiety dimensions²⁶. Participants were asked to indicate on a scale from 0 (not at all) to 4 (extremely) to what extent they were troubled by the complaints. Scores for the present sample had an internal reliability of 0.95. The summed score, known as the Global Severity Index (GSI), represents the respondent's overall level of psychological distress. GSI scores were converted to t-scores using gender-specific norms, as suggested in the published manuals. A GSI total score ≥ 50 was categorized as having significant psychological distress, based on the optimal cutoff score determined in a study among adult survivors of childhood cancer²⁷.

Child and adult sexual abuse were assessed with six screening items from the Wyatt Sexual History Questionnaire – Revised (WSHQ-R) structured interview²⁸. Four questions centered on childhood sexual abuse including fondling, oral sex, attempted and completed intercourse, and two questions on attempted and completed non-consensual sexual abuse in adulthood. A positive response from any of the questions classified the participant as having experienced child and/or adult abuse, as appropriate.

Lifetime history of exposure to traumatic events was reported using a modified version of the Traumatic History Questionnaire²⁹. It is an inventory of potentially traumatic events based on the DSM-IV criterion for post-traumatic and acute stress disorders and the range of experiences were divided into 2 categories: 4 questions about crime-related events and 12 questions related to general disaster and trauma. Participants were asked to indicate whether they

ever experienced a specific event. Endorsed items were summed for total scores that range from 0 to 16, and participants were classified as having ‘low trauma’ if they reported no traumatic events or only one kind of traumatic event, whereas participants were classified as ‘high trauma’ if they reported experiencing two or more kinds of traumatic events³⁰. It was not possible to distinguish individuals who had experienced a specific type of traumatic event (e.g., physical assault) once from those who had experienced that type on multiple occasions.

Racism-related experiences were measured using the Racism and Life Experience Scale – Brief version, a general overview measure of racism-related experiences and stress that includes 9 questions that assess direct, vicarious, and collective experiences of racism, as well as perceived stress associated with racism³¹. Seven questions assess the extent of influence of racism in different areas of the participant's life using a 5-point Likert scale ranging from 0 to 4, and two questions assess for frequency of racism-related incidents in the prior year and over one’s lifetime, also on a scale ranging from 0 to 4. A summed summary score represents the degree of perceived racism experienced; possible scores range from 0 to 36 with an internal reliability of 0.86 in this sample.

The Modified Schedule of Sexist Events (SSE-LM) was used to assess experiences of sexism³². This modified scale has previously been shown to be correlated with women’s sexual risk behaviors³². The modified scale was composed of thirteen items that measure lifetime experiences of sexism (e.g., “As a woman, have often have people made inappropriate or unwanted sexual advances at you?”). Each sexism scale item had four response options (0 = never; 1 = rarely; 2 = sometimes; and 3 = often). Responses were summed to create a sexism scale (Cronbach’s alpha =0.91), with possible scores ranging from 0 to 39.

189 Social support was assessed using the Multidimensional Scale of Perceived Social
190 Support (MSPSS), a self-report measure of perceived support from 3 sources: family, friends and
191 a significant other³³. The scale is comprised of five questions each for the family and friends
192 subscales and four questions for the significant other subscale, with a total of 14 items. It was
193 measured in a 6-point Likert-type response format (strongly disagree, disagree, mildly disagree,
194 mildly agree, agree, strongly agree). The mean total scores were computed, and any mean total
195 scale score between 1 and 2.5 was considered low support; a score of 2.6 to 4.5 was classified as
196 moderate support; and a score from 4.6 to 6 was considered high support. These cutoffs were
197 chosen to roughly reflect the valance of the scale descriptions, that is disagreement, neutral, and
198 agreement with the statements about support, using a strategy consistent with that suggested by
199 Zimet³⁴. The scale had a high internal reliability ($\alpha=0.92$) in this sample.

200 Religious beliefs and spirituality were assessed using a modified version of a religiosity
201 scale that has been validated and used among African Americans in previous research³⁵. Eight of
202 the items were measured in a 4-point Likert-type response format (1= strongly disagree, 2 =
203 disagree, 3 = agree, 4 = strongly agree) and regarded spiritual practices and reliance on God (e.g.
204 I have a personal relationship with God). A summed score of these items was used for analysis,
205 with possible scores that ranged from 0 to 24 and an internal reliability of 0.90.

207 *Data analysis*

208 Descriptive analyses of socio-demographic characteristics and study variables were done
209 using median, interquartile ranges and frequency distributions. Univariate regressions were used
210 to assess the relationships between minority stress variables, protective variables, and potential
211 confounders and observed FSFI domain scores for satisfaction and arousal, as well as for desire

frequency. Minority stress variables included scores for chronic burden, racism, sexism, sexual abuse, and other (non-sexual) trauma; potentially protective variables included social support and spiritual beliefs; and potential confounders included age, sexual orientation, and whether the respondent had at least one main male sexual partner. We then ran a multiple linear regression for each FSFI outcome, including variables that showed a univariate association at the level of $p < 0.2$. For regressions, we used $p < 0.05$ to determine significance. All analyses were performed using SAS 9.2.

Results

Demographic and clinical characteristics of participants

Socio-demographic characteristics of the participants are shown in Table 1. The median age was 33 years (IQR 25), with the modal group being between 18 and 29 years. Although nearly three quarters of the participants had completed high school, a general equivalency diploma (GED), or higher educational attainment, 63.1% had a monthly income of less than \$1000 and 46.6% were unemployed. Seventy-seven percent had experienced housing instability and 56.6% had been incarcerated in their lifetimes.

Most participants self-identified as heterosexual (78.7%), and, per the eligibility criteria, all reported having oral, vaginal, or anal sex in the prior 90 days with at-risk male partners, with 88.0% reporting having at least one main sexual partner during the prior 90 days.

Descriptive analyses of minority stress variables, protective variables, and potential confounders are presented in Table 2. Most of the participants reported moderate-to-high chronic burden (66.4%) and significant psychological distress (58.2%). Lifetime history of two or more traumatic events was very high among this population, with 84.4% reporting two or more events

not related to sexual abuse. Childhood sexual abuse was reported by 65.8%, and non-consensual sexual contact or rape in adulthood was reported by 45.5%. Almost three-quarters of participants reported personally experiencing at least some racism in their lifetime (74.8%), and 65.5% reported being treated unfairly by family or important men in their lives due to being a woman. Stress related to experiences of racism (mean score = 18.7 ± 7.2 out of 36) and sexism (mean score = 17.5 ± 8.9 out of 39) was moderate. It was a highly religious sample (mean score = 20.1 ± 4.4 out of possible 24) with moderate-to-high levels of social support (91.9%).

Sexual function domain scores were relatively high, with means (\pm s.d.) of 4.7 (\pm 1.1) and 4.6 (\pm 1.4) for the arousal and satisfaction domains, respectively. The mean score (\pm s.d.) for desire frequency was substantially lower: 3.4 (\pm 1.3).

Sexual arousal was negatively associated with moderate-to-high chronic burden in both the univariate (Table 3; $p = 0.008$) and multivariable linear regressions analyses ($p = 0.041$; Table 4).

In univariate analyses (Table 3), sexual satisfaction was negatively associated with older age (50+ relative to 18-29; $p = 0.048$), a history of childhood sexual abuse ($p = 0.046$), significant psychological distress ($p = 0.001$), moderate-high chronic burden ($p = 0.006$), and a high sexism stress score ($p < 0.001$); it was positively associated with identifying as lesbian, gay, bisexual, or queer ($p = 0.016$) and having at least one main partner ($p < 0.001$). In the multivariable analysis (Table 4), satisfaction was negatively associated with a higher sexism stress score ($p = 0.022$), and positively associated with identifying as lesbian, gay, bisexual, or queer ($p = 0.006$) and with having at least one main partner ($p < 0.001$).

Desire frequency was not significantly associated with any of the hypothesized minority stress, protective, or confounding variables in either analysis.

258

259 **Discussion**

260 Study findings affirm that multiple domains of minority stress (e.g., chronic burden, experiences
261 of sexism, racism, and trauma) tend to co-occur in Black/African American women. At least two
262 of these types of chronic stressors appear to have a substantial negative impact on their sexual
263 function, particularly sexual arousal and satisfaction; while acute stressors, including childhood
264 or adult sexual abuse, do not have independent associations with female sexual function in these
265 data. Chronic stress has been linked to several health outcomes including psychological distress
266 and sexual health in previous research^{8, 11, 36, 37}. The present study expands upon that research by
267 accounting for domains of minority stress among previously under-studied, low-income Black
268 women and examining how each impacts their sexual functioning.

269 The study demonstrated that higher chronic burden was negatively associated with
270 female sexual arousal, and increased experiences of sexism were associated with lower sexual
271 satisfaction. Hamilton and Meston have shown that small cumulative stressors, called daily
272 hassles, have negative effects across multiple health domains, including sexual health, and that
273 daily hassles, rather than major life events, were related to sexual difficulties⁸. Beyond daily
274 hassles of work, school and social obligations that were commonly measured in previous studies,
275 the present study assessed chronic pressures that are faced disproportionately by women of color
276 because of the ways that structural racism and sexism shape opportunities and because of police/
277 government surveillance^{38, 39}. The high chronic burden scores are sobering measures of the
278 struggles that these women encounter frequently, and the findings draw attention to their
279 associated consequences on a core aspect of wellbeing – sexual pleasure. Clinicians and sexual

health professionals should consider the role of psychosocial stressors in sexual wellbeing in females, especially when treating patient populations with similar sociodemographics.

Negative associations of sexual arousal with chronic burden, which includes day-to-day stress associated with economic difficulties, were consistent with preliminary studies conducted by Hamilton and colleagues ^{40, 41} wherein financial stressors were associated with lower scores on all aspects of sexual functioning in women. In addition to economic and employment problems assessed in the chronic burden scale, it also measures stresses related to concerns about crime, housing, immigration, caregiving, and incarceration -- all factors that disproportionately burden women of color. Black women are often caregivers for older relatives, in addition to their children, and at times, their partners ⁴² and often experience involvement with the child welfare system ⁴³. African Americans are incarcerated at nearly six times the rate of their white counterparts and seek refuge in homeless shelters at rates seven times higher than do whites ^{44, 45}.

Prior research suggests that experiences of sexism can lead to psychological distress, compromised sexual agency, and condomless sexual intercourse ⁴⁶. Experiences of racism have also been shown to contribute to decreased sexual satisfaction and condom efficacy ⁴⁷. The present study tested associations with three aspects of female sexual functioning (desire, arousal, and satisfaction) and examined several minority stressors, providing a holistic picture of the effects of minority stress on female sexual health. Higher scores on the Modified Schedule of Sexist Events scale, but not the Racism and Life Experiences Scale were negatively associated with sexual satisfaction, providing evidence of the direct impact of sexism-induced stress on health outcomes. Although self-reported experiences of racism were not associated with female sexual function, chronic burden was. Due to the multiple pathways through which systemic

racism contributes to chronic burden, these findings suggest an indirect effect of racism on sexual function.

Regardless of statistical significance, associations between minority stress and sexual desire were largely not observed in this study. Desire differs from the other domains examined in that the question was not based on sexual interaction with a partner. The FSFI as a measure of sexual functioning is primarily used in the diagnosis of sexual dysfunction, and the sexual desire and sexual arousal domains assess for symptoms of hypoactive sexual desire disorder (HSDD) and female sexual arousal disorder (FSAD). Because desire is much more subjective than arousal or satisfaction, the question may not be sensitive enough to detect the differences likely to be found within our non-clinical study population. A recent analysis of a nationally representative sample of Black women measured one aspect of sexual desire -- "sexual wantedness" and found that over 70% reported wanting their last partnered sexual experience "very much" ⁴⁸.

We observed a significant negative association between the oldest age group (50+ years) and satisfaction in univariate analysis, although the association was not significant in the adjusted multivariable analysis. In a study of middle-aged women (40-70), sexual satisfaction was strongly associated with psychological wellbeing ⁴⁹. The lack of a significant association in our multivariable analysis, which adjusted for several aspects of psychological wellbeing, may suggest that reduced psychological wellbeing accounted for the association observed in the univariate analysis. Finally, we note the positive associations of having a main partner and of identifying as other than heterosexual with sexual satisfaction. We suspect that these findings speak to something about relationship dynamics and perhaps participants' level of comfort with their own sexuality. However, our study was not designed to examine these associations, hence further research is warranted.

One study limitation was that the sample size might have been insufficient to capture the effects of potential protective factors in the multivariable regression, especially given the high levels of religiosity and moderate-to-high social support in this sample. Because this study took advantage of data obtained through an HIV prevention study, the study population was limited to women with at-risk male partners, and did not capture the full range of experiences of urban, low-income African American women. Furthermore, because the study population was urban and largely low-income, the results may not be generalizable to African American women in the US at large, although it should be noted that even African American women with substantial resources are impacted by some of the same stressors. Despite these limitations, this is one of the first studies that used reliable and established measures to look at associations of FSFI with a multidimensional assessment of a wide range of the daily stressors and traumatic events faced by many minority women.

Recommendations and Conclusion

Future studies related to stress and sexual functioning in women should involve replication in other sexual orientation and racial/ethnic minority populations, as well as research on larger, non-clinical samples of Black women from a broader range of socio-economic statuses, in order to identify nuances in the interrelationships of these domains.

In the context of designed to reduce HIV and STI risk, the findings challenge scientists to engage prevention strategies that recognize the importance of sexual arousal, desire, and satisfaction on the relationship choices, potential risk behaviors, and attitudes of women⁵⁰. Many have argued that pleasure is a forgotten or under-attended aspect of too many HIV prevention interventions. Given that people engage in sex to, among other things, experience pleasure and

relieve stress, rather than for the purpose of avoiding HIV and STIs, attending to the domains of arousal, satisfaction, and desire has the potential to encourage intervention participation and to improve prevention-focused dialogue between patients and their providers.

The implications of the study, however, extend well beyond disease prevention. Identifying minority stress as a negative predictor of sexual satisfaction expands the narrative of minority disenfranchisement and its impact on health outcomes to other vital aspects of wellbeing. Medical providers may want to explore chronic burden in women who complain about low sexual arousal; and mental health practitioners may want to address both chronic burden and experiences of sexism when counseling with women or couples who complain about low sexual desire and arousal. The latter is important because low sexual arousal and satisfaction may contribute to or worsen relationship problems, particularly if the source of the problem is misunderstood. The collective analysis of these life stressors provided a broad picture of the life experiences of urban, low-income African American women and further evidence of the disproportionate burden that these women face at the intersection of their gender, race, and socio-economic status. Greater inclusion of measures of female sexual function in research on stress will deepen this understanding and may offer directions for supporting sexual activity among this population of women that is that is both healthy and pleasurable.

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485 Table 1. Sociodemographic characteristics of Females of African American Legacy Empowering
 486 Self (FemAALES) HIV prevention study participants at baseline (n=249)

Characteristics	n (%)
Age	
18-29	95 (38.1)
30-39	66 (26.5)
40-49	51 (20.5)
50-59	37 (14.9)
Highest Level of Education Completed	
Less than High School	66 (26.5)
GED	19 (7.6)
High school diploma	113 (45.4)
Two-year associate degree or higher	51 (20.5)
Sexual Orientation	
Heterosexual	196 (78.7)
Not heterosexual (i.e., lesbian, gay, bisexual, or queer)	53 (21.3)
Ever incarcerated	141 (56.6)
Ever homeless	192 (77.1)
Ever married	67 (26.9)
Employment Status	
Employed	92 (36.9)
Unable to work because of disability	41 (16.5)
Unemployed	116 (46.6)
Monthly income	
Less than \$1,000	157 (63.1)
\$1,000 - \$ 1,999	68 (27.3)
\$2,000 and above	24 (9.6)
Number of male sexual partners in the last 90 days (Mean \pm	1.9 \pm 1.4

SD)	
At least one current main sexual partner	212 (88.0)

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489 Table 2. Characteristics of hypothesized minority stress variables, protective variables, and
 490 potential confounders among Females of African American Legacy Empowering Self
 491 (FemAALES) HIV prevention study participants at baseline

Variable	n (%)
21-item Chronic Burden Scale	
Low	78 (33.6)
Moderate-to-high (score ≥ 29)	154 (66.4)
Brief Symptom Inventory-18	
Low	102 (41.8)
“significant psychological distress Case” (BSI score ≥ 50)	142 (58.2)
History of childhood sexual abuse (from Wyatt Sexual History	154 (65.8)
Questionnaire – Revised)	
History of adult non-consensual sexual abuse (from Wyatt	110 (45.5)
Sexual History Questionnaire – Revised)	
History of two or more other traumatic events (Traumatic	206 (84.4)
History Questionnaire)	
Multidimensional Scale of Perceived Social Support	
Low	20 (8.1)
Moderate	123 (49.6)
High	105 (42.3)
	(Mean score \pm SD)
Religiosity/spirituality scale (Scale range 0-24)	20.1 \pm 4.4
Modified Schedule of Sexist Events (Scale range 0-39)	17.5 \pm 8.9
Racism and Life Experience Scale – Brief (Scale range 0-36)	18.7 \pm 7.2

494 Table 3. Univariate associations of hypothesized minority stress variables, protective variables,
 495 and potential confounders with observed FSFI domains

	Arousal		Satisfaction		Desire	
	B (95% CI)	p-value	B (95% CI)	p-value	B (95% CI)	p-value
Age (ref = 18-29)						
30-39	-0.11 (-0.50, 0.27)	0.565	-0.35 (-0.83, 0.12)	0.139	-0.02 (-0.42, 0.38)	0.919
40-49	0.23 (-0.18, 0.64)	0.274	-0.06 (-0.55, 0.44)	0.826	0.01 (-0.43, 0.44)	0.977
50+	-0.43 (-0.89, 0.03)	0.067	-0.56 (-1.11, 0.00)	0.048	-0.45 (-0.93, 0.04)	0.074
Sexual orientation						
(ref = heterosexual)						
not heterosexual						
(i.e., lesbian,						
gay, bisexual, or						
queer)	0.22 (-0.15, 0.59)	0.249	0.56 (0.11, 1.01)	0.016	0.11 (-0.28, 0.49)	0.579
Childhood sexual						
abuse ²⁸						
(ref = no)						
Yes	-0.16 (-0.48, 0.17)	0.347	-0.41 (-0.80, -0.01)	0.046	-0.05 (-0.38, 0.29)	0.788
Adult sexual abuse ²⁸						
(ref = no)						
yes	-0.30 (-0.60, 0.01)	0.054	-0.20 (-0.57, 0.17)	0.290	-0.24 (-0.56, 0.07)	0.132
Traumatic History						
Questionnaire (ref =						
low)						
high	-0.17 (-0.61, 0.28)	0.463	-0.21 (-0.74, 0.33)	0.444	0.05 (-0.39, 0.49)	0.811
Brief Symptom						
Inventory-18						
significant						
psychological						
distress (ref = no)						

yes	-0.27 (-0.58, 0.05)	0.094	-0.64 (-1.01, -0.27)	0.001	0.02 (-0.30, 0.34)	0.688
21-item Chronic						
Burden Scale (ref =						
low)						
moderate-high	-0.44 (-0.77, -0.11)	0.008	-0.56 (-0.95, -0.16)	0.006	0.01 (-0.33, 0.36)	0.946
At least one main						
partner (ref = no)						
yes	0.13 (-0.36, 0.62)	0.607	1.32 (0.75, 1.88)	<0.001	0.32 (-0.17, 0.81)	0.201
Multidimensional						
Scale of Perceived						
Social Support (ref						
= low)						
moderate	-0.13 (-0.70, 0.44)	0.658	-0.11 (-0.80, 0.58)	0.745	-0.12 (-0.73, 0.49)	0.704
high	0.26 (-0.32, 0.84)	0.377	0.51 (-0.18, 1.21)	0.149	-0.01 (-0.63, 0.61)	0.981
Racism and Life						
Experience Scale –						
Brief						
(scale range: 0-36)	0.00 (-0.02, 0.02)	0.999	-0.01 (-0.04, 0.01)	0.293	-0.01 (-0.03, 0.02)	0.577
Modified Schedule						
of Sexist Events						
(scale range: 0-39)	-0.01 (-0.03, 0.01)	0.181	-0.04 (-0.06, -0.02)	<0.001	0.00 (-0.01, 0.02)	0.596
Religiosity/						
spirituality (scale						
range: 0-24)	0.00 (-0.03, 0.04)	0.891	0.02 (-0.02, 0.06)	0.329	0.01 (-0.02, 0.05)	0.445

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501 Table 4. Multivariable linear regressions for FSFI arousal, satisfaction, and desire domains

	B (95% CI)	p-value
<i>Arousal</i>		
Age (ref = 18-29)		
30-39	-0.14 (-0.55, 0.26)	0.490
40-49	0.31 (-0.13, 0.75)	0.161
50+	-0.38 (-0.87, 0.11)	0.127
Adult sexual abuse (from Wyatt Sexual History Questionnaire – Revised) (ref = no)		
yes	-0.19 (-0.54, 0.15)	0.264
Brief Symptom Inventory-18 “significant psychological distress” (ref = no)		
yes	-0.24 (-0.60, 0.13)	0.205
21-item Chronic Burden Scale (ref = low)		
moderate-high	-0.38 (-0.75, -0.02)	0.041
Modified Schedule of Sexist Events (Scale range 0-39)	0.01 (-0.02, 0.03)	0.589
<i>Satisfaction</i>		
Age (ref = 18-29)		
20-39	-0.27 (-0.75, 0.21)	0.270
40-49	0.01 (-0.50, 0.52)	0.974
50+	-0.36 (-0.92, 0.20)	0.208
Sexual orientation (ref = heterosexual)		
not heterosexual (i.e., lesbian, gay, bisexual, or queer)	0.67 (0.20, 1.15)	0.006
Childhood sexual abuse (from Wyatt Sexual History Questionnaire – Revised) (ref = no)		
yes	0.04 (-0.39, 0.48)	0.839
Brief Symptom Inventory-18 “significant psychological distress” (ref = no)		
yes	-0.21 (-0.65, 0.22)	0.327
21-item Chronic Burden Scale (ref = low)		
moderate-high	-0.20 (-0.63, 0.23)	0.365
At least one main partner (ref = no)		
yes	1.02 (0.42, 1.62)	<0.001
Multidimensional Scale of Perceived Social Support (ref = low)		
moderate	-0.46 (-1.18, 0.25)	0.199
high	-0.14 (-0.88, 0.60)	0.706

Modified Schedule of Sexist Events (Scale range 0-39)	-0.03 (-0.06, 0.00)	0.022
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Desire

Age (ref = 18-29)

20-39	-0.01 (-0.41, 0.40)	0.964
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40-49	0.07 (-0.37, 0.52)	0.747
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50+	-0.39 (-0.90, 0.11)	0.127
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Adult sexual abuse (from Wyatt Sexual History Questionnaire –

Revised) (ref = no)

yes	-0.20 (-0.54, 0.14)	0.242
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