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

Permalink

<https://escholarship.org/uc/item/7rc148rh>

Journal

The Journal of Sexual Medicine, 19(4)

ISSN

1743-6095

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Publication Date

2022-04-01

DOI

10.1016/j.jsxm.2022.02.005

Supplemental Material

<https://escholarship.org/uc/item/7rc148rh#supplemental>

Peer reviewed

1 **Minority Stress and Sexual Functioning among African American** 2 **Women with At-Risk Partners in South Los Angeles**

3
4 **Abstract:** Background: Preliminary evidence indicates that acute and chronic psychological
5 stress affect sexual arousal and satisfaction. African American women, in particular, are
6 vulnerable to the impacts of gender- and race-related stress, given their socially constructed
7 identities as African Americans and as women. Aim: We examined associations between
8 minority stress and sexual function using data from 248 African American women. Methods:
9 Surveys were conducted with 248 African American women in South LA with male partners at
10 risk for acquiring HIV. We analyzed self-reports on 1) stress indicators: chronic burden,
11 perceived racism/sexism, and histories of trauma/sexual abuse; 2) Female Sexual Function Index
12 domains: desire, arousal, and satisfaction; and 3) potential moderators: social support and
13 spirituality. We used multiple regression, adjusting for potential confounding factors, to examine
14 the relationships between stress indicators, potential moderators, and sexual function domains.
15 Outcomes: The outcomes were the female sexual function index domains of desire, arousal, and
16 satisfaction. Results: This largely low-income sample experienced significant chronic and acute
17 stressors, was highly spiritual, and reported strong social support. Moderate-high chronic burden
18 and increasing sexism scores were independently associated with decreased arousal ($B=-0.38$,
19 $95\%CI=-0.75, -0.02$) and satisfaction ($B=-0.03$, $95\%CI=-0.06, 0.00$) scores, respectively.
20 Clinical implications: Providers may want to explore chronic burden in patients who complain
21 about low sexual arousal. Additionally, to develop effective HIV- and other STI-related
22 interventions that impact behaviors that can confer sexual risk, prevention strategies are needed
23 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

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

59 Additional sexual health stressors that may particularly affect low-income African
60 American women include the characteristics of their sexual partnerships, as the pool of potential
61 partners for Black women is constrained by systemic, social, and cultural forces that limit
62 choices and strain relationships. These factors include high levels of overlapping sexual
63 partnerships or concurrency, the greater frequency of bisexual behavior observed among African
64 American men who have sex with men (MSM) than among MSM of other race/ethnicities, and
65 sometimes disempowering gender dynamics ¹⁸⁻²¹. Collectively, the influences of these
66 experiences on disparities in health outcomes can be measured and conceptualized using the
67 minority stress model. The theoretical model proposes that health disparities among members of
68 stigmatized minority groups can be explained by a number of factors, such as low socioeconomic
69 status, and by stressors induced by a hostile environment that includes interpersonal prejudice
70 and discrimination ²². Minority stress refers to excess stress to which individuals from
71 stigmatized social categories are exposed because of their social, often minority, and position. It
72 has been associated with both negative physical and mental health outcomes ²².

73 We explore the association of minority stress and sexual function among a sample of
74 African American women with at-risk sexual partners who participated in an HIV behavioral
75 intervention study conducted in South Los Angeles – a high poverty urban community that is
76 impacted by disinvestment, poor employment opportunities and high rates of incarceration ²³.

77 Based on the Diagnostic and Statistical Manual of Mental Disorders 5 definition of sexual
78 dysfunction that informed the development of the scale for sexual function examined here ²⁴, we
79 define female sexual function as the persistent or recurrent ability to attain and maintain
80 sufficient sexual excitement in a manner that supports general well being. It may be expressed as
81 subjective arousal, desire, and satisfaction, including accompanying genital responses. The study
82 explores the impact of minority stressors – chronic burden, racism, sexism, sexual abuse and
83 other traumas – on sexual desire, arousal, and satisfaction. This study group represents a
84 population that experiences unique and intersecting sets of experiences and stressors. Our
85 analysis can improve understanding of the impacts on sexual function, identify potential targets
86 for intervention, and inform sex-positive interventions to address sexual health.

87

88 **Methods**

89 *Study participants and setting*

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

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

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

108

109 *Data collection and processing*

110 The current study is based on data from the baseline surveys of FemAALES participants. Of the
111 254 enrolled FemAALES participants, 249 confirmed eligibility during the baseline survey and
112 served as the analysis group. All surveys were administered via an audio-computer assisted self-
113 interview (A-CASI) interface. The first set of sociodemographic questions was asked by the
114 interviewer, who input the responses into ACASI, after which the participants self-entered the
115 responses to the remaining questions. The survey took a mean of 91 (s.d. = 34) minutes to
116 complete. It covered a wide range of socio-demographic, attitudinal, knowledge, substance use
117 and sexual behavior factors, as well as information on respondents' prior and current experiences
118 related to racism and sexism. Questions also included information about female sexual function,
119 relationship status, chronic burden, social support, religiosity and spirituality, psychological
120 distress, and traumatic life events.

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

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

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

146 Psychological distress was measured using the Brief Symptom Inventory (BSI-18), which
147 consists of 18 descriptions of physical and emotional complaints, with 6 items each for
148 somatization, depression and anxiety dimensions ²⁶. Participants were asked to indicate on a scale
149 from 0 (not at all) to 4 (extremely) to what extent they were troubled by the complaints. Scores
150 for the present sample had an internal reliability of 0.95. The summed score, known as the
151 Global Severity Index (GSI), represents the respondent's overall level of psychological distress.
152 GSI scores were converted to t-scores using gender-specific norms, as suggested in the published
153 manuals. A GSI total score ≥ 50 was categorized as having significant psychological distress,
154 based on the optimal cutoff score determined in a study among adult survivors of childhood
155 cancer ²⁷.

156 Child and adult sexual abuse were assessed with six screening items from the Wyatt
157 Sexual History Questionnaire – Revised (WSHQ-R) structured interview ²⁸. Four questions
158 centered on childhood sexual abuse including fondling, oral sex, attempted and completed
159 intercourse, and two questions on attempted and completed non-consensual sexual abuse in
160 adulthood. A positive response from any of the questions classified the participant as having
161 experienced child and/or adult abuse, as appropriate.

162 Lifetime history of exposure to traumatic events was reported using a modified version of
163 the Traumatic History Questionnaire ²⁹. It is an inventory of potentially traumatic events based
164 on the DSM-IV criterion for post-traumatic and acute stress disorders and the range of
165 experiences were divided into 2 categories: 4 questions about crime-related events and 12
166 questions related to general disaster and trauma. Participants were asked to indicate whether they

167 ever experienced a specific event. Endorsed items were summed for total scores that range from
168 0 to 16, and participants were classified as having ‘low trauma’ if they reported no traumatic
169 events or only one kind of traumatic event, whereas participants were classified as ‘high trauma’
170 if they reported experiencing two or more kinds of traumatic events³⁰. It was not possible to
171 distinguish individuals who had experienced a specific type of traumatic event (e.g., physical
172 assault) once from those who had experienced that type on multiple occasions.

173 Racism-related experiences were measured using the Racism and Life Experience Scale –
174 Brief version, a general overview measure of racism-related experiences and stress that includes
175 9 questions that assess direct, vicarious, and collective experiences of racism, as well as
176 perceived stress associated with racism³¹. Seven questions assess the extent of influence of
177 racism in different areas of the participant's life using a 5-point Likert scale ranging from 0 to 4,
178 and two questions assess for frequency of racism-related incidents in the prior year and over
179 one’s lifetime, also on a scale ranging from 0 to 4. A summed summary score represents the
180 degree of perceived racism experienced; possible scores range from 0 to 36 with an internal
181 reliability of 0.86 in this sample.

182 The Modified Schedule of Sexist Events (SSE-LM) was used to assess experiences of
183 sexism³². This modified scale has previously been shown to be correlated with women’s sexual
184 risk behaviors³². The modified scale was composed of thirteen items that measure lifetime
185 experiences of sexism (e.g., “As a woman, have often have people made inappropriate or
186 unwanted sexual advances at you?”). Each sexism scale item had four response options (0 =
187 never; 1 = rarely; 2 = sometimes; and 3 = often). Responses were summed to create a sexism
188 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.

206

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

212 frequency. Minority stress variables included scores for chronic burden, racism, sexism, sexual
213 abuse, and other (non-sexual) trauma; potentially protective variables included social support and
214 spiritual beliefs; and potential confounders included age, sexual orientation, and whether the
215 respondent had at least one main male sexual partner. We then ran a multiple linear regression
216 for each FSFI outcome, including variables that showed a univariate association at the level of p
217 < 0.2 . For regressions, we used $p < 0.05$ to determine significance. All analyses were performed
218 using SAS 9.2.

219

220 **Results**

221 *Demographic and clinical characteristics of participants*

222 Socio-demographic characteristics of the participants are shown in Table 1. The median age was
223 33 years (IQR 25), with the modal group being between 18 and 29 years. Although nearly three
224 quarters of the participants had completed high school, a general equivalency diploma (GED), or
225 higher educational attainment, 63.1% had a monthly income of less than \$1000 and 46.6% were
226 unemployed. Seventy-seven percent had experienced housing instability and 56.6% had been
227 incarcerated in their lifetimes.

228 Most participants self-identified as heterosexual (78.7%), and, per the eligibility criteria,
229 all reported having oral, vaginal, or anal sex in the prior 90 days with at-risk male partners, with
230 88.0% reporting having at least one main sexual partner during the prior 90 days.

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

235 not related to sexual abuse. Childhood sexual abuse was reported by 65.8%, and non-consensual
236 sexual contact or rape in adulthood was reported by 45.5%. Almost three-quarters of participants
237 reported personally experiencing at least some racism in their lifetime (74.8%), and 65.5%
238 reported being treated unfairly by family or important men in their lives due to being a woman.
239 Stress related to experiences of racism (mean score = 18.7 ± 7.2 out of 36) and sexism (mean
240 score = 17.5 ± 8.9 out of 39) was moderate. It was a highly religious sample (mean score = 20.1
241 ± 4.4 out of possible 24) with moderate-to-high levels of social support (91.9%).

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

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

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

256 Desire frequency was not significantly associated with any of the hypothesized minority
257 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

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

282 Negative associations of sexual arousal with chronic burden, which includes day-to-day
283 stress associated with economic difficulties, were consistent with preliminary studies conducted
284 by Hamilton and colleagues^{40,41} wherein financial stressors were associated with lower scores on
285 all aspects of sexual functioning in women. In addition to economic and employment problems
286 assessed in the chronic burden scale, it also measures stresses related to concerns about crime,
287 housing, immigration, caregiving, and incarceration -- all factors that disproportionately burden
288 women of color. Black women are often caregivers for older relatives, in addition to their
289 children, and at times, their partners⁴² and often experience involvement with the child welfare
290 system⁴³. African Americans are incarcerated at nearly six times the rate of their white
291 counterparts and seek refuge in homeless shelters at rates seven times higher than do whites^{44,45}.

292 Prior research suggests that experiences of sexism can lead to psychological distress,
293 compromised sexual agency, and condomless sexual intercourse⁴⁶. Experiences of racism have
294 also been shown to contribute to decreased sexual satisfaction and condom efficacy⁴⁷. The
295 present study tested associations with three aspects of female sexual functioning (desire, arousal,
296 and satisfaction) and examined several minority stressors, providing a holistic picture of the
297 effects of minority stress on female sexual health. Higher scores on the Modified Schedule of
298 Sexist Events scale, but not the Racism and Life Experiences Scale were negatively associated
299 with sexual satisfaction, providing evidence of the direct impact of sexism-induced stress on
300 health outcomes. Although self-reported experiences of racism were not associated with female
301 sexual function, chronic burden was. Due to the multiple pathways through which systemic

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

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

314 We observed a significant negative association between the oldest age group (50+ years)
315 and satisfaction in univariate analysis, although the association was not significant in the adjusted
316 multivariable analysis. In a study of middle-aged women (40-70), sexual satisfaction was
317 strongly associated with psychological wellbeing⁴⁹. The lack of a significant association in our
318 multivariable analysis, which adjusted for several aspects of psychological wellbeing, may
319 suggest that reduced psychological wellbeing accounted for the association observed in the
320 univariate analysis. Finally, we note the positive associations of having a main partner and of
321 identifying as other than heterosexual with sexual satisfaction. We suspect that these findings
322 speak to something about relationship dynamics and perhaps participants’ level of comfort with
323 their own sexuality. However, our study was not designed to examine these associations, hence
324 further research is warranted.

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

337

338 **Recommendations and Conclusion**

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

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

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

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

365

366

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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 ±	1.9 ± 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 Questionnaire – Revised)	
History of adult non-consensual sexual abuse (from Wyatt Sexual History Questionnaire – Revised)	110 (45.5)
History of two or more other traumatic events (Traumatic History Questionnaire)	206 (84.4)
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**

Desire

Age (ref = 18-29)

20-39 -0.01 (-0.41, 0.40) 0.964

40-49 0.07 (-0.37, 0.52) 0.747

50+ -0.39 (-0.90, 0.11) 0.127

Adult sexual abuse (from Wyatt Sexual History Questionnaire –

Revised) (ref = no)

yes -0.20 (-0.54, 0.14) 0.242

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