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Sexuality and Health-Related Quality of Life After Prostate Cancer in African-American and White Men Treated for Localized Disease

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The purpose of this study was to examine differences in sexual attitudes and quality of life of White and African-American men who have undergone radical prostatectomy or radiation therapy for localized prostate cancer. Respondents included 1,112 White and 118 African-American men. Response rates differed by race, with 51% of White men and 28% of African-American men returning the questionnaire assessing demographics, medical history, sexual functioning, attitudes about seeking help for sexual problems, sexual self-schema, and health-related quality of life. African Americans were more likely than Whites to have undergone radiation therapy ($p < .0001$) and were more likely to indicate that a desire to maintain sexual functioning influenced their treatment choice ($p < .0001$). African-American men also had more positive attitudes than did White men toward seeking help for sexual problems and were more likely to report seeking past help and intending to seek future help. African-American men reported more problems with sexual desire ($p = .0003$), although their sexual function scores did not differ significantly from those of Whites. African-American men may be more at risk for distress when prostate cancer treatment causes sexual dysfunction.

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African-American men are at higher risk for prostate cancer than are men of any other ethnicity in the United States; compared to Whites, African Americans also experience diagnosis at an earlier average age, more advanced disease at diagnosis, and increased mortality, even when matched with White men by cancer stage at diagnosis (Lubeck et al., 2001). Despite extensive research on quality of life after treatment for localized prostate cancer (Schover et al., 2002a), few studies have examined the influence of ethnicity on long-term health outcomes. Analysis of data on 1,178 newly diagnosed men from the Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE) database found that African-American men reported poorer health-related quality of life both before and after treatment for prostate cancer (Lubeck et al., 2001).

It is unclear whether African-American men are treated with different prostate cancer therapies than are White men. Some studies suggest that African-American men are more likely than are White men to have radiation therapy rather than prostatectomy, either because they present at a later stage of disease (Horner, 1998; Zietman, Moughan, Owen, & Hanks, 2001) or because of their ethnicity or socioeconomic status (Morris, Snipes, Schlag, & Wright, 1999). When African-American men were diagnosed and treated at an equal-access Veterans Administration medical center, however, no ethnic differences were found in stage at diagnosis of prostate cancer (Freedland et al., 2000). Also, ethnicity was not predictive of type of cancer treatment for the men in the Lubeck et al. (2001) CaPSURE analysis or for a large cohort of men under 60 years of age from the Prostate Cancer Outcomes Study (Harlan et al., 2001). In the latter study, however, African-American men over age 60 were less likely than Whites with a similar stage of disease to have aggressive treatment with surgery or radiation therapy.

One of the most common and persistent health problems after radical prostatectomy or radiation therapy for prostate cancer is sexual dysfunction (Potosky et al., 2000; Schover et al., 2002a; Stanford et al., 2000; Steineck et al., 2002). Despite efforts to minimize erectile dysfunction (ED) by using nerve-sparing prostatectomy or newer techniques of radiotherapy such as brachytherapy and intensity-modulated external beam therapy, large cohort studies using standardized assessment techniques show that only 20% of men or fewer maintain or recover normal erections (Potosky et al., 2000; Schover et al., 2002a; Stanford et al., 2000; Steineck et al., 2002). Men not only are distressed about loss of erectile rigidity but also about decreased sexual desire and orgasmic pleasure (Schover et al., 2002a; Steineck et al., 2002). Having ED has psychological consequences for men. A qualitative study of prostate cancer survivors found that ED impacts men's perceptions about their masculinity, their level of intimacy, and their self-confidence (Bokhour, Clark, Inui, Silliman, & Talcott, 2001). Similar findings were seen in a study assessing men's needs for support after prostate cancer treatment (Steginga et al., 2001).

ED also is associated in general with poorer health-related quality of life, especially with measures of mental health (Litwin, Nied, & Dhanani, 1998).

Sexual dysfunction after prostate cancer treatment may have a more negative emotional and behavioral impact on African-American men than on White men. Among men in the CaPSURE database, African-Americans rated their erectile function before cancer treatment more positively than did White men. By follow-up, rates of ED were equally high in both groups (Lubeck et al., 2002), however, African American men were more "bothered" about their loss of erections. In a study asking men to decide how much survival time they would trade in order to avoid sexual complications of prostate cancer treatment, African-American men were significantly more willing to trade survival for sex than were White men (Saigal, Gornbein, Nease, & Litwin, 2001).

Schover et al. (2002a, 2002b) recently reported sexual outcomes and use of medical therapies for ED in a large cohort of men from the Prostate Cancer Registry at the Cleveland Clinic Foundation. This analysis of the registry data, however, focuses on differences in sexual attitudes and quality of life observed between African-American and White men. If ethnicity is associated with adaptation to sexual dysfunction, this information will aid in designing sexual rehabilitation interventions that are culturally sensitive.

METHODS AND MATERIALS

Procedures

We mailed the questionnaire along with a letter explaining the study to all eligible men (i.e., those treated for radiation therapy or radical prostatectomy for localized disease). Return of the completed survey indicated informed consent. We mailed one reminder letter to men who did not return the questionnaire within one month. As a small incentive, respondents received a booklet, worth $6.60, of United States Prostate Cancer Awareness postage stamps.

Participants

Study participants were recruited from the Prostate Cancer Registry of the Cleveland Clinic Foundation. The registry included 2,636 consecutive patients treated for localized prostate cancer between 1986 and 1999. A more detailed description of the registry and a comparison of men who responded to the postal survey on sexuality versus those who did not participate can be found in Schover et al. (2002a).

Questionnaire

The assessment instrument included four standardized measures and a fifth scale developed specifically for this study. The Sexual Self-Schema

Scale–Male Version (SSSS–M; Andersen, Cyranowski, & Espindle, 1999) assesses the positive versus negative valence of a man's self-image as a sexual person, using a 27-item adjective checklist that yields three subscores: passionate/loving (Cronbach's alpha = .9412 for African-American, .8824 for White male respondents), powerful/aggressive (Cronbach's alpha = .7813 for African-American, .7655 for White male respondents), and open/liberal (Cronbach's alpha = .3948 for African-American, .6182 for White male respondents). These scores combine to create a global summary score (Cronbach's alpha = .9236 for African-American, .8570 for White male respondents).

Another scale that we used was the International Index of Erectile Function (IIEF; Rosen et al., 1997), which includes 15 items divided into subscales measuring erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall sexual satisfaction. The scale is sensitive to changes in sexual function as part of response to treatment and has demonstrated good discriminant validity between men with sexual dysfunction and controls. In this article, we focus on the global score, which includes both sexual function and satisfaction and provides a summary measure of sexual outcome (Cronbach's alpha = .8484 for African-American, .8210 for White male respondents). Men completing this scale were asked to indicate whether or not they were using a medical treatment for ED during their sexual activity over the past 4 weeks.

The third scale, the urinary and bowel symptom scales of the Los Angeles Prostate Cancer Index (PCI; Litwin et al., 1998), assesses common urinary or bowel symptoms after prostate cancer treatment and the degree of bother caused by these symptoms (urinary function and bother scale: Cronbach's alpha = .8257 for African-American, .8776 for White male respondents; bowel function and bother: Cronbach's alpha = .7959 for African-American, .7531 for White male respondents). Finally, we included the Short Form Health Survey (SF-36; Ware, 1993), a widely used measure of health-related quality of life, and used both the physical component (Cronbach's alpha = .92 for African-American, .93 for White male respondents) and the mental health component (Cronbach's alpha = .89 for African-American, .88 for White male respondents) scores of the SF-36.

The Help-Seeking Questionnaire created for this study examines cognitive attitudes and beliefs that we believed were important in men's help-seeking behavior for sexual dysfunction. We revised the scale using two separate waves of questionnaire responses. After mailing one quarter of the questionnaires, we analyzed and revised it before mailing the remaining questionnaires. Only Wave II respondents are included in questionnaire validation and analyses that included data from the Help-Seeking Questionnaire. Validation of the scale (Schover et al., 2003) yielded two subscales with adequate reliability. One subscale, the importance of erections, includes 9 items assessing sexual beliefs regarding the need for a man to have

erections to please a partner and be sexually active. Cronbach's alpha for this scale was .5886 for African-American and .6613 for White men. The 16-item Attitudes toward Help-Seeking scale (Cronbach's alpha = .7880 for African-American, .8369 for White men) includes items regarding the belief that sexual activity is part of a healthy lifestyle, partner supportiveness in resolving a sexual problem, and assertiveness in finding help for a sexual problem.

In addition to the scales, we also asked questions to determine demographic and other medical and sexual information. Items included multiple-choice questions about erectile function in the year before prostate cancer diagnosis, influence of desire to maintain sexual function on choice of cancer treatment, changes after cancer treatment in erectile function and sexual satisfaction, presence of problems with sexual desire, erections, and orgasms in the past 6 months, the level of distress regarding these problems, number of lifetime and recent sexual partners, sexual orientation, age of current sexual partner, and sexual problems experienced by the partner. To determine use of treatment of ED, we listed all current ED treatments and asked participants to indicate their past and current use of each treatment and how much each treatment had improved their sex life. We also asked participants whether they had ever sought help for a sexual problem before or after their prostate cancer diagnosis.

Statistical Analysis

We described demographic characteristics and medical treatment history of the survey participants using descriptive statistics, including frequencies, means, and standard deviations, as appropriate. To detect differences by ethnicity, we used two-sample *t*-tests, chi-square tests, and Pearson correlation coefficients. We examined correlational patterns between seven variables: the SSSS-M total score, the three SSSS-M subscales, the pros and cons of help seeking score, the essential nature of erections score, and the global IIEF score. To detect ethnic differences in the correlational patterns among these variables, we used appropriate covariance structure analysis with maximum likelihood estimation (Steiger, 1995).

RESULTS

Registry Population

The registry included 427 African-American and 2,199 White men. We excluded 10 men of other ethnicity from these analyses. African-American and White men did not significantly differ on age, stage of disease at diagnosis, or mortality. However, African-American men had a slightly shorter duration of follow-up (mean of 4.0, $SD = 2.4$ years versus a mean of 4.5, $SD = 3.0$ years for White men, $p = 0.0002$) and were more likely to be treated with

radiation therapy rather than surgery (70% of African-American men had radiation therapy versus 51% of White men, χ^2 [1, $N = 2626$] = 49.99, $p < 0.0001$). African Americans also had higher rates of biochemical failure, as measured by most recent prostate specific antigen (PSA) levels (24% versus 16% of White men, $\chi^2 = [1, N = 2626] = 13.29$, $p = 0.0003$) and were more likely to have had neoadjuvant hormonal therapy (32% of African-American men versus 27% of White men, $\chi^2 = [1, N = 2626] = 4.24$, $p = 0.0395$). Also, African-American men were more likely to report ED at the time of prostate cancer diagnosis (45% versus 39% of White men, $\chi^2 = [1, N = 2614] = 6.24$, $p = 0.0125$).

Respondent Sample

Response rate

The response rate differed by ethnicity, with 51% of White men returning their survey compared with only 28% returned by African Americans, $\chi^2 = (1, N = 2626) = 75.53$, $p < 0.0001$. The ethnic difference in return rate resulted from lack of response from African-American men who received the questionnaire. There were no statistically significant ethnic differences among men who were ineligible to participate because they were deceased (2%) or disabled (<1%) or because we did not have their current address (2%). White men ($N = 1089$) completed 90% of the returned questionnaires, and African-American men ($N = 120$) completed 10% of the questionnaires.

Demographics

Respondent ages ranged from 42 years to 88 years (mean = 68.6 years, $SD = 7.6$ years); and we found no significant age difference by ethnicity. Ninety-two percent of men had a high-school education or higher, and African Americans had significantly less education than did Whites, $\chi^2(4, N = 1200) = 82.31$, $p < .0001$. The majority of men (96%) reported a religious affiliation. African-American men were more likely to be Protestant (77%) than were White men (51%), however, there was no ethnic difference in religious observance, with 63% of men indicating that they were moderately to very active in practicing their religion. African-American men were more likely than White men to be single (72% married, 14% unmarried but with a partner, and 14% without a partner, compared to 88% of White men married, 5% unmarried with a partner, and 7% without a partner, $\chi^2 = [2, N = 1192] = 20.66$, $p < 0.0001$). African-American men were also more likely than White men to be 10 or more years older than their current sexual partner (21% African-American versus 11% White), χ^2 (1, $N = 1209$) = 8.93, $p = .0028$.

Medical factors

The average duration of follow-up since prostate cancer treatment was 4.3 years ($SD = 2.9$). As in the registry population, there was a trend for the

length of follow-up of African-American men to be shorter than the length of follow-up of White men (mean of 3.9, $SD = 2.3$ years versus 4.4, $SD = 2.9$ years for White men, $p = 0.0582$). Ethnicity was significantly related to modality of prostate cancer treatment, χ^2 (1, $N = 1209$) = 25.88, $p < 0.0001$, with 70% of African-Americans receiving radiation therapy compared with 46% of Whites. Twenty-three percent of African-American men, versus 16% of White men, had abnormal PSAs on follow-up, χ^2 (1, $N = 1209$) = 3.32, $p = 0.0686$, however, neither history of neoadjuvant therapy nor current use of antiandrogen treatment differed between ethnic groups in the respondent sample.

Health outcome measures

Table 1 illustrates average scores on health outcome measures. Compared to Whites, African-Americans scored, on average, lower on the physical component (PCS), $t(1158) = 3.38$, $p = 0.0008$, and on the mental health component (MCS), $t(124) = 1.97$, $p = 0.0506$, of the SF-36. This suggests that African Americans perceived that they had poorer physical and mental health after prostate cancer treatment. On the PCI urinary and bowel scales, African Americans reported more bowel symptoms and bother, $t(130) = 2.41$, $p = 0.0172$. No ethnic differences were observed in urinary symptoms or bother.

Sexual function and behavior

African-American and White men in the respondent sample did not differ in rates of ED before cancer treatment. However, 41% of African-American men, compared with 22% of White men, indicated that a wish to preserve erections

TABLE 1. Means and Standard Deviations for Study Scales

	Ethnicity					
	African American			White		
Measure	*n*	*M*	*SD*	*n*	*M*	*SD*
SF-36: Physical health*	109	44.85	10.87	1051	48.14	9.55
SF-36: Mental health	109	50.66	10.51	1051	52.72	8.85
PCI: Urinary function and bother	112	82.87	19.88	1062	79.64	22.37
PCI: Bowel function and bother*	116	81.03	19.95	1070	85.65	15.32
IIEF	105	28.51	21.60	971	27.49	21.63
SSSS-M: total score*	75	110.92	22.71	978	105.24	15.92
SSSS-M: subscale 1	91	45.43	10.89	1036	43.55	8.17
SSSS-M: subscale 2	85	48.70	10.68	1010	48.01	8.95
SSSS-M: subscale 3)*	87	16.26	3.21	1018	13.70	3.63
Sexual beliefs: Help-seeking*	79	49.61	7.74	735	45.89	8.34
Sexual beliefs: Importance of erections*	70	24.50	4.12	638	25.90	4.03

*Denotes mean differences at $p < .05$ using *t*-test statistic.

SSSS-M = Sexual Self-Schema Scale for Men; Subscale 1 = Passionate/loving; Subscale 2 = Powerful/aggressive; Subscale 3 = Open/liberal; IIEF = International Index of Erectile Functioning.

had a major influence on their choice of treatment for prostate cancer, $\chi^2(2, N = 1183) = 23.69$, $p < 0.0001$. Reports of sexual morbidity from cancer treatment differed slightly by ethnicity, although the disparities did not reach significance. African-American men were less likely than White men to report a severe impact of prostate cancer on erections, χ^2 (2, $N = 1175$) = 5.07, $p = 0.0791$ or sexual satisfaction, χ^2 (2, $N = 1176$) = 5.18, $p = 0.0749$, but were significantly more likely to report current problems with loss of sexual desire after prostate cancer (61% versus 43%, respectively), χ^2 (1, $N = 1190$) = 12.91, $p = 0.0003$. We did not find a significant ethnic difference in level of distress over lack of sexual desire among the men who reported having a problem with desire in the past 6 months, and we also did not find ethnic differences in the relationship between sexual desire and current rates of hormonal therapy. No ethnic differences were seen in the prevalence of erectile or orgasmic dysfunction, in men's distress about these problems, or on the IIEF global score or the five subscale scores measuring domains of sexual dysfunction and dissatisfaction.

Number of lifetime sexual partners differed by ethnicity, χ^2 (7, $N = 1115$) = 93.57, $p < 0.0001$. Fifty-two percent of African Americans, compared to 16% of Whites, reported having had 15 or more sexual partners since age 18. African-American men were less likely than White men to report having had only one sexual partner since age 18 (9% versus 33%, respectively). African-American men maintained a shorter duration of sexual relationships, χ^2 (5, $N = 1163$) = 21.62, $p = 0.0006$. Among men who reported having a current sexual partner, sixty-eight percent of African Americans had been sexually active with their current partner for 10 years or more, compared with 85% of Whites, χ^2 (1, $N = 1013$) = 18.41, $p < 0.0001$. However, 55% of African-American men indicated they had no sexual partner in the past year, compared with 44% of White men, χ^2 (2, $N = 1169$) = 27.97, $p < 0.0001$. For men who had a current sexual partner, the percentage indicating that their partners had sexual problems (66%) did not differ significantly by ethnicity.

Sexual self-image and attitudes

African Americans' total score on the SSSS-M was significantly higher than Whites' total score, $t(80) = -2.12$, $p = 0.0367$. African-American men scored as significantly more open and liberal sexually than did White men on the SSSS-M subscale measuring that dimension, $t(1103) = -6.38$, $p < 0.0001$. Means and standard deviations can be found in Table 1.

According to the Help-Seeking scale created for this study, African-American men had attitudes significantly more indicative of a willingness to seek help for a sexual problem, $t(812) = -3.79$, $p = 0.0002$. We examined individual items on this scale to determine if agreement with statements varied by ethnicity. Each item on this scale and the percentage of agreement by ethnicity is listed in Table 2. African Americans were significantly more

TABLE 2. Degree of Agreement with Help-Seeking Sexual Belief Statements by Race ($N = 815$ Whites, 88 African Americans)

Sexual beliefs: Help-seeking	Race	% Agree strongly	% Agree somewhat	% Disagree somewhat	% Disagree strongly	P^a
I have too many health problems to be concerned about sex	White	8	13	15	64	.7326
	Af Amer[b]	6	12	19	63	
I think a man of my age should just accept sexual problems as normal	White	12	28	22	37	.2707
	Af Amer	14	19	23	44	
I would not discuss sex problems in a support group	White	33	24	23	21	.0109
	Af Amer	16	27	26	31	
Sexual activity is important to a man's health	White	35	42	14	9	.0030
	Af Amer	55	30	7	8	
My partner would not mind living without sex	White	25	32	25	19	<.0001
	Af Amer	17	26	14	43	
I think it is healthy to have sex, even after prostate cancer	White	70	25	2	2	.3849
	Af Amer	77	21	0	2	
My wife or partner would want me to seek help for a sexual problem	White	27	37	19	17	.0003
	Af Amer	48	35	8	10	
I admire Bob Dole for going public about his erection problem	White	51	31	10	8	.4716
	Af Amer	54	24	12	11	
It is worthwhile to get help for sexual problems, even if partner does not seem to care about sex	White	30	51	12	6	.0002
	Af Amer	54	31	12	4	
If I saw a doctor for a sexual problem, my partner would want to accompany me	White	37	33	19	11	.3216
	Af Amer	47	27	18	8	
Media coverage regarding treatments for sexual problems makes it easier to seek help	White	25	49	15	11	.0282
	Af Amer	40	37	12	11	
I would not bother to search the internet to find information on sex after prostate cancer	White	44	20	19	17	.6214
	Af Amer	40	20	17	23	
These days, I just don't have the energy to think about sex	White	4	15	27	54	.0930
	Af Amer	10	14	23	53	
I would not answer an ad for a nearby clinic offering help for a sexual problem	White	44	28	19	9	<.0001
	Af Amer	29	20	22	28	
My partner would be too embarrassed to discuss our sex life with a doctor	White	14	28	27	30	.3504
	Af Amer	12	23	25	40	
I would obtain insurance coverage information regarding treatment for a sexual problem	White	37	35	16	13	.0006
	Af Amer	60	23	10	7	

Note. Percentages may be based on a somewhat lower number of men in some cases because of missing data and because of inclusion of only Wave II respondents for these analyses.

[a] *P*-values are based on chi-square statistic.

[b] Af Amer = African American.

likely to have sought help for sexual problems than Whites (59% of African Americans versus 47% of Whites had sought help before or during prostate cancer treatment, χ^2 [1, $N = 1196$] = 6.14, $p = 0.0132$). A higher percentage of African Americans also reported intentions to seek help for sexual problems within the next year (62% versus 41%, χ^2 [1, $N = 1181$] = 19.73, $p < 0.0001$).

African-American men also were significantly more likely to agree with statements on the Importance of Erections Scale indicating that erections are essential to sex, $t(706) = 2.75$, $p = 0.0062$. Table 3 lists all items from

TABLE 3. Degree of Agreement by Race with Essential Nature of Erections Sexual Belief Statements ($N = 815$ Whites, 88 African Americans)

Sexual beliefs: Erections	Race	% Agree strongly	% Agree somewhat	% Disagree somewhat	% Disagree strongly	P^a
A man does not need firm erections to stay sexually active and satisfied	White	12	33	30	24	.4959
	Af Amer[b]	16	27	34	22	
Women gossip about a new lover who cannot get an erection	White	14	32	35	20	<.0001
	Af Amer	40	31	19	10	
Having a sexual problem makes me feel like less of a man	White	9	34	23	33	.2455
	Af Amer	14	27	20	39	
Most partners faithful and supportive when a man has an erection problem	White	50	42	6	2	.0448
	Af Amer	47	41	6	6	
I do not think that I could find a new relationship if I had an erection problem	White	27	35	27	11	.3399
	Af Amer	28	37	19	16	
My partner would lose desire for me if I could not perform	White	8	35	29	27	.0021
	Af Amer	21	34	27	18	
A man who can not have good erections should still feel free to date or marry	White	53	34	10	3	.0088
	Af Amer	44	29	19	8	
Many women can be satisfied with sex even if it does not include intercourse with an erection	White	23	59	15	3	.1235
	Af Amer	25	48	21	6	
It is still worth trying sexual touching, even if a man cannot get a firm erection	White	63	31	4	2	.1411
	Af Amer	71	20	6	4	

Note. Percentages may be based on a somewhat lower number of men in some cases because of missing data and because of inclusion of only Wave II respondents for these analyses.

[a] *P*-values are based on chi-square statistic or Fisher's exact test when expected counts were small.

[b] Af Amer = African American.

this scale and percentage of agreement with items by ethnicity, according to chi-square analyses. African-American men's scores on the importance-of-erections scale correlated significantly with the subscale measuring self-perception as being powerful/aggressive on the SSSS-M scale, $p = 0.0033$, $r(50) = 0.41$. The correlation for Whites was not significant, $p = .3949$, $r(602) = .03$. The difference in the degree of correlation between these two scales for African Americans versus Whites was also significant, χ^2 (1, $N = 652$) = 7.04, $p = 0.0080$. African Americans differed significantly from Whites on the correlation between their IIEF summary score and their importance of erections scale score, χ^2 (1, $N = 653$) = 4.25, $p = 0.0392$. We found a moderate correlation between these two scores was found for African-Americans ($r(60) = 0.30$), whereas we found almost no correlation for Whites ($r(593) = 0.03$).

DISCUSSION

Our data indicate that African-American men may be more distressed than White men about the sexual consequences of treatment for localized prostate cancer. We found that African-American men were more likely than White men to report that preserving sexual function weighed heavily in choosing a treatment for their prostate cancer. They had more positive attitudes about seeking medical treatment for an erection problem and seemed more likely to believe that the ability to achieve an erection was necessary for sexual acceptance by a partner. They also were more likely to indicate that they had sought help for their sexual problems prior to, during, and after prostate cancer treatment.

African-American men were more likely to be unmarried; their current sexual relationships were of shorter duration, on average, than those of Whites; and they also were more likely to date younger women. This could explain African-American men's greater concern over their sexual functioning and more frequent attempts at seeking help to remedy this problem. Also, a nonmarital relationship or a new relationship may be more easily disrupted by cancer-related sexual dysfunction.

Cultural differences in sexual practices and expectations could also contribute to African-American men's seemingly greater concern about the impact of prostate cancer treatment on their erectile functioning. Some have found that African-American couples are less likely than White couples to engage in noncoital sexual practices such as masturbation and oral stimulation (Laumann, Gagnon, Michael, & Michaels, 1994; Wyatt, 1997). Thus, African-American couples may not consider alternatives to intercourse to stay sexually active when a man has ED. In addition, African-American women may be more likely than White women to expect sexual pleasure from their relationships and to link relationship satisfaction to sexual satisfaction (Oggins, Leber, & Veroff, 1993; Staples, 1972). These factors could explain our finding

that African-American men were more likely than White men to report that a woman would not value a man with ED.

Among African Americans, but not among Whites, the belief that a man must have functional erections to satisfy a partner was associated with both perceiving oneself as traditionally masculine (in terms of sexual power and assertiveness) and with having good sexual function and satisfaction. Thus, erectile function may be more crucial for sexual satisfaction for African-American men than for White men. African-American men in our sample scored more positively than did White men on the SSSS-M scale measuring self perception as a sexual person, especially on the subscale that measures openness and liberality. Thus, it is also possible that the correlation is based on men who recovered good sexual function having more positive sexual self-views and attributing their sexual satisfaction to their ability to achieve an erection.

African-American men's lack of sexual activity after prostate cancer may be related to a loss of desire for sex. Despite the fact that we found no ethnic differences in sexual desire or other aspects of sexual function on the IIEF scale, African-Americans reported a higher rate of loss of sexual desire in the past 6 months. Further research is needed to find out if, compared to White men, African-American men have higher expectations for optimal sexual desire or if cancer treatment more strongly reduces their interest in sex. In addition, diminished sexual desire among African-American men could be a result of heightened anxiety about ED, the result of poorer physical or mental health, or the result of specific comorbid medical factors (Lubeck et al., 2001). African-American men's scores on the PCS and MCS indicated poorer physical and mental health. In addition, they reported more bowel symptoms. Our findings did not indicate ethnic differences in the relationship between sexual desire and current rates of hormonal therapy. Although African-American men were significantly more likely to be in biochemical cancer treatment failure (i.e., to have abnormal PSA values) and to have higher rates of neoadjuvant antiandrogen therapy. However, their rate of current hormonal therapy was identical to that of Whites.

African-American men reported more frequently than did White men that they chose their treatment based on the desire to maintain sexual function. In this registry, in contrast to others studied in the past (Harlan et al., 2001; Lubeck et al., 2001), African-American men were more likely to receive radiation therapy treatment instead of radical prostatectomy for prostate cancer. Because age and stage of cancer at diagnosis did not differ between the ethnic groups, it is possible that African-American men's wish to avoid the sexual morbidity of surgery influenced them to choose radiation therapy. In addition to concern about the impact of prostate cancer treatment on sexual function, Fearing, Newton, and Lambert (2000) found that African-American men believed that prostate cancer treatment was painful. Perhaps the perception that radiation therapy is less painful than surgery impacted men's

treatment decisions. Steginga et al. (2001) found that men who received radiation therapy reported more unmet needs with regard to patient care and support during their prostate cancer treatment. Thus, African-American men may have especially strong needs for psychoeducational interventions (Mishel et al., 2002), which also could explain why they were more likely than Whites to have sought help.

Although the ethnic differences that we observed are important and have implications for developing interventions, the similarities between African-American and White men are also noteworthy. The majority of men in both groups agreed that women could be sexually satisfied without intercourse and that engaging in sexual touching was valuable even without having an erection. Yet, as seen in Table 3, over half of the men endorsed the belief that a firm erection is needed to stay sexually active, and more than 40% affirmed that sexual dysfunction made them feel like less of a man. Sexual rehabilitation programs after prostate cancer treatment need to address men's negative beliefs about their masculinity and attractiveness to women. Interventions addressing concerns stemming from cultural differences in sexual practices and attitudes are necessary to effectively alter these beliefs.

Our survey has some important limitations, which include retrospective assessment of some aspects of sexual functioning, an overall response rate of 46% among African American and White men, differential rates of participation by eligible African-American men, and less-than-optimal numbers of African-American men eligible to participate in the study. Assessment of sexual functioning was retrospective in some regards, although men's reports of premorbid erectile function closely corresponded with documentation from their medical charts (Schover et al., 2002a). Although ED differed by ethnicity in the entire registry population, African-American and White men in the respondent sample did not differ in rates of ED before cancer treatment, probably because men who had better function premorbidly were more likely to participate in the study (Schover et al., 2002a).

Thus, those African-American men who chose to participate in the study were likely more concerned about their sexual functioning than those who did not participate in the study, which may explain differences observed between African-American and White participants on sexual variables in this study. Considering that low socioeconomic status is associated with poorer health-related quality of life, it is also possible that some of the ethnic differences that we found can be partially accounted for by socioeconomic differences (Penson et al., 2001). Our findings should be regarded as tentative but should guide future studies focusing on ethnicity and sexual rehabilitation after cancer.

Sexual functioning after prostate cancer is important to a majority of men, regardless of ethnicity. Giving men an accurate picture of the likelihood of recovering or maintaining sexual function after various treatments may influence choice of cancer treatment, especially for African-American

men. African-American men may need more support and counseling when they develop ED, particularly if they do not have a stable, long-term sexual relationship. Further study is needed to provide more information on cultural differences that may impact sexual dysfunction interventions.

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