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# Sexual Well-Being Among Survivors of Non-Hodgkin Lymphoma

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**N**on-Hodgkin lymphoma (NHL) ranks sixth in cancer incidence among women and seventh among men (American Cancer Society, 2011), with rising incidence rates documented since 1973 (Fisher & Fisher, 2004). Adult NHLs are divided into two main groups: indolent (low-grade lymphomas, which grow slowly) and aggressive (intermediate- and high-grade lymphomas, which grow quickly). Without intervention, aggressive NHL can be fatal within months (Johnston, 1999; Sehn & Connors, 2005). Individuals diagnosed with aggressive NHL undergo extensive treatment for the disease, including multi-agent chemotherapy regimens (with or without radiation) and, potentially, bone marrow or stem cell transplantation (Sehn & Connors, 2005). Although advances in NHL treatment have led to a rise in survival rates (Jemal et al., 2004; Mahadevan & Fisher, 2011; Sehn & Connors, 2005; Shipp et al., 1993) by months and even years postdiagnosis, survivors are at risk for significant adverse effects of their treatment, such as second cancers and cardiovascular complications (Andre et al., 2004; Brennan et al., 2005). In this way, aggressive treatment among NHL survivors may result in long-term complications that require both medical and psychosocial interventions. One such area that may be affected is survivors' sexual well-being (Hewitt, Greenfield, & Stovall, 2006; Institute of Medicine, 2008; Monga, 2002; Rowland & Bellizzi, 2008).

Sexual well-being includes factors associated with sexual experience (Taylor & Davis, 2007), such as participation in sexual activity, satisfaction with sexual experiences, and sexual function. Sexual well-being has been identified as a common concern among survivors (Baker, Denniston, Smith, & West, 2005) and as an area in need of continued attention in research (Hewitt et al., 2006). Previous studies have addressed sexual outcomes for cancer survivors, mainly among individuals diagnosed with breast, gynecologic, or prostate cancers (Andersen,

**Purpose/Objectives:** To describe sexual well-being among non-Hodgkin lymphoma (NHL) survivors.

**Design:** Descriptive, correlational, cross-sectional study.

**Setting:** NHL survivors identified via the Los Angeles County Cancer Surveillance Program.

**Sample:** 222 NHL survivors two- to five-years postdiagnosis.

**Methods:** Data were collected via mailed questionnaire. Multivariate models were used to examine sexual well-being.

**Main Research Variables:** Three indices of sexual well-being were examined in relation to sociodemographic and medical variables: participation in sexual activity, satisfaction with sex life, and sexual function.

**Findings:** Most NHL survivors were participating in sexual activity; however, more than half were dissatisfied with their sex life. A substantial minority "usually or always" experienced problems with sexual function. Associations between study variables and outcomes differed across indices of sexual well-being and by gender; older age was associated with decreased participation, decreased satisfaction, and impaired sexual function for men as well as with decreased participation for women. Poorer physical functioning was associated with decreased participation for men and women as well as poorer sexual function for women. Finally, poorer mental functioning was associated with less satisfaction and poorer sexual function for men and women; shorter times since diagnosis were associated with poorer sexual function for women.

**Conclusions:** Most NHL survivors were sexually active, but many reported difficulties with satisfaction and function. Sexual well-being is a multifaceted construct that requires continued attention throughout survivorship.

**Implications for Nursing:** Oncology nurses are in an excellent position to ensure that survivors' sexual concerns are addressed. Survivorship care plans may help to facilitate communication about survivors' sexual well-being.

Anderson, & deProse, 1989; Beckjord & Campas, 2007; Can et al., 2008; Carmack Taylor, Basen-Engquist, Shinn, & Bodurka, 2004; Ganz, Desmond, Belin, Meyerowitz, & Rowland, 1999; Henson, 2002; Incrocci, 2006; Kao, Jani,

& Vijayakumar, 2002; Kornblith & Ligibel, 2003; Lagana, MacGarvey, Classen, & Koopman, 2001; Oliffe, 2005; Rogers & Kristjanson, 2002; Stead, 2003; Wyatt et al., 1998), but survivors of aggressive NHL are not well represented in the literature. A general conclusion from the research is that survivors often report persistent sexual difficulties for years after diagnosis and treatment for their disease (Meyerowitz, Desmond, Rowland, Wyatt, & Ganz, 1999; Syrjala et al., 1998) and that addressing the sexual concerns of survivors is an important part of follow-up care (Hewitt et al., 2006; Monga, 2002).

Much has been learned about sexual well-being for cancer survivors and the association with medical, sociodemographic, and psychosocial variables (Monga, 2002; Syrjala et al., 1998; Tan, Waldman, & Bostick, 2002). The direct physical effects of cancer and its treatment can negatively impact sexual function (Monga, 2002). Consistent evidence exists that treatment with chemotherapy predicts poorer sexual outcomes among breast cancer survivors (Beckjord & Campas, 2007; Burwell, Case, Kaelin, & Avis, 2006; Ganz, Rowland, Desmond, Meyerowitz, & Wyatt, 1998), particularly for younger women experiencing premature chemotherapy-induced menopause (Burwell et al., 2006; Ganz et al., 1998; Rogers & Kristjanson, 2002). Longer time since diagnosis has been associated with a higher probability of participation in sexual activity (Carmack Taylor et al., 2004; Mumma, Mashberg, & Lesko, 1992), but also with poorer satisfaction with sexual experiences (Mumma et al., 1992).

Some evidence suggests that younger survivors experience more sexual difficulties than older gynecologic and breast cancer survivors (Stead, 2003), although null effects for age also have been observed (Beckjord & Campas, 2007). Survivors' race and ethnicity have been associated with variability in sexual outcomes; for example, African American survivors have reported less comfort with some sexual behaviors compared to Caucasian survivors, whereas Caucasian survivors have been more likely to report that breast cancer negatively impacted their sexual well-being (Wyatt et al., 1998). Finally, psychosocial variables such as poorer mental function or increased emotional distress have been consistently negatively associated with survivors' sexual well-being (Beckjord & Campas, 2007; Can et al., 2008; Ganz et al., 1999; Syrjala et al., 1998).

The current study investigates sexual well-being among survivors of aggressive NHL who were two- to five-years postdiagnosis. Specifically, the authors evaluated the association of survivors' sociodemographics, medical history, and psychosocial factors with three indicators of their sexual well-being: participation in sexual activity, satisfaction with sexual experiences, and sexual function. With a focus on survivors who are two- to five-years postdiagnosis, the authors were able to investigate sexual well-being at a time in the cancer trajectory when survivors are likely to begin experiencing late effects of

cancer treatment, but less likely to have access to intensive psychosocial support (Hewitt et al., 2006; Institute of Medicine, 2008). Based on the results of previous research, the authors expected that sexual problems would be common among NHL survivors, particularly for those reporting difficulties with mental and physical function.

## Methods

### Participants and Procedures

The Experience of Care and Health Outcomes of Survivors of Non-Hodgkin Lymphoma (ECHOS-NHL) study assessed quality of care and health-related quality of life among 408 adult NHL survivors identified via the Los Angeles County Cancer Surveillance Program. All survivors had been diagnosed with intermediate- (91%) or high-grade (9%) lymphomas two to five years prior to the study ( $\bar{X}$  = 3.54 years, SD = 0.84). The study was conducted after all necessary human subject approvals were obtained. Additional details on the study methods, design, and recruitment were published in Arora et al. (2007). The participation rate for eligible respondents able to be located was 73%.

### Measures

**Sexual well-being:** The authors examined three indices of sexual well-being (i.e., participation, satisfaction, and function). Respondents reported on sexual well-being in the past four weeks. Sexual activity was defined as any form of intimate contact that might result in sexual pleasure, with or without a partner, and not limited to intercourse alone.

Respondents reported participation in sexual activity using one item modified from the Sexual Activity Questionnaire (Thirlaway, Fallowfield, & Cuzick, 1996): "In the last four weeks, how often did you engage in any sexual activity either alone or with a partner?" Responses were recorded on a five-point scale from 1 (not at all) to 5 (five times or more). For analyses, responses were dichotomized into "yes" or "no" answers.

Three items (two modified from the Sexual Activity Questionnaire [Thirlaway et al., 1996] and one from measures used in the Prostate Cancer Outcomes Study [Potosky et al., 1999]) were used to assess satisfaction with current sexual experiences. Respondents were asked whether they were satisfied with their sex life, satisfied with their frequency of sexual activity, and how big a problem they considered their sexual functioning to be. Responses were recorded on a five-point scale from 1 (not at all satisfied/a big problem) to 5 (completely satisfied/no problem). Scores from these three items were combined to create a satisfaction index, wherein a mean score for the three items was calculated if at least two were answered. These items had good internal consistency ( $\alpha$  = 0.87). Higher scores indicate better satisfaction.

Three items from the Sexual Functioning Questionnaire (Syrjala et al., 2000) were used to assess sexual function. Respondents were asked how often they experienced a lack of sexual desire, a lack of sexual arousal, and difficulty reaching orgasm. Responses were recorded on a four-point scale from 1 (never) to 4 (always). These three items were combined to create a function index, wherein a mean score for the items was calculated if at least two were answered. These items had good internal consistency ( $\alpha = 0.9$ ). Higher scores indicate better function.

**Psychosocial variables and perceived health status:** The mental component summary (MCS) and physical component summary (PCS) scores of the SF-36® health survey were used to assess survivors' self-report of their mental and physical health status, respectively (Ware, Kosinski, & Dewey, 2000; Ware, Kosinski, & Gandek, 2000). The MCS and PCS scores were derived from the eight subscales of the SF-36 and were standardized based on 1999 U.S. population norms with a mean value of 50 (SD = 10). Scores of 50 and higher represent at or above average function in the general population. To examine differences in sexual well-being among NHL survivors whose perceived health status was either similar to, better than, or worse than that of the average person in the United States, the authors dichotomized the MCS and PCS into those at or above the mean value of the U.S. population norms or below the population norm.

**Sociodemographic characteristics and cancer-related variables:** In keeping with previous studies of sexual outcomes among cancer survivors (Carmack Taylor et al., 2004; Meyerowitz et al., 1999; Syrjala et al., 1998), the authors examined sociodemographic characteristics and cancer-related variables in relation to sexual well-being including age, gender, race and ethnicity, marital status, education, time since diagnosis, and treatment history. For women, menopausal status also was included.

## Data Analysis

Analyses were conducted using SPSS®, version 15.0. Descriptive statistics characterized the sexual well-being of the sample and bivariate and multivariate (linear and logistic regression) analyses were used to examine associations between sexual well-being and medical, sociodemographic, and psychosocial variables. The authors stratified multivariate analyses by gender; models were identical except that menopausal status was included for women.

## Results

### Participants

Data for the ECHOS-NHL were primarily collected via a mailed questionnaire; however, about 20% of the sample who initially refused to complete the mailed survey completed an abbreviated version of the survey

by phone ( $n = 89$ ). Because of the sensitive nature of the topics, this abbreviated telephone survey did not include the measures of sexual well-being. Therefore, the baseline population for the current study included 319 NHL survivors. Of these, 222 had complete data available on outcomes of interest; 68 participants were missing data on whether they had participated in sexual activity or on items assessing satisfaction with their sex life. An additional 29 participants were missing data on independent variables. The participants with missing data were excluded from the present study; compared to the overall ECHOS-NHL population, they were older (by about 4.3 years;  $p < 0.01$ ) and were less likely to be married or partnered ( $p < 0.01$ ). Finally, of the 222 survivors included in the current study, only 160 reported data on the specific outcome of sexual function; therefore, analyses of this outcome exclude the 62 survivors with missing sexual function data. Compared to participants who reported on function, these survivors were older (by about 7.7 years), were more likely to be women, and

**Table 1. Participant Characteristics**

Characteristic	$\bar{X}$	SD
Age (years)	57.73	14.81
Time since diagnosis (years)	3.54	0.84
Characteristic	n	%
<b>Gender</b>		
Male	123	55
Female	99	45
<b>Race and ethnicity</b>		
Caucasian	157	71
Non-Caucasian	65	29
<b>Marital or partner status</b>		
Married or partnered	159	72
Separated, divorced, widowed, or single	63	28
<b>Education</b>		
High school or less	63	28
Some college	70	32
College or more	89	40
<b>Treatment history</b>		
Chemotherapy only	113	51
Chemotherapy plus other treatment <sup>a</sup>	109	49
<b>Experienced a recurrence</b>		
Yes	32	14
No	190	86
<b>SF-36® mental component summary</b>		
Below average	90	41
At or above average	132	60
<b>SF-36® physical component summary</b>		
Below average	119	54
At or above average	103	46
<b>Current menopausal status (N = 99)</b>		
Pre- or perimenopausal	18	18
Postmenopausal	81	82

N = 222 unless otherwise noted.

<sup>a</sup> Including radiation, surgery, or stem cell or bone marrow transplantation

Note. Because of rounding, not all percentages total 100.



were less likely to have attended college (all,  $p < 0.01$ ). Participant characteristics can be found in Table 1.

Descriptive Statistics: Sexual Well-Being

Table 2 displays data on sexual well-being, including the responses on the item components for the satisfaction and function indices. A majority of survivors (69%) had participated in sexual activity in the past four

weeks. Regarding satisfaction, 25% reported being “not at all” satisfied with their sexual functioning or their frequency of sexual activity and 26% identified their sex life as a “moderate or big” problem. As with satisfaction, a minority of survivors reported “usually or always” experiencing a lack of sexual desire (29%), a lack of sexual arousal (26%), or difficulty reaching orgasm (24%). These indices of sexual well-being were positively associated: survivors who had participated in sexual activity reported better satisfaction and function than those who had not ( $t = 3.9$  for function;  $t = 2.78$  for satisfaction) and survivors who reported better satisfaction reported better sexual function ( $r = 0.42$ ) (all,  $p < 0.01$ ; data not shown).

Table 2. Descriptive Statistics for Study Outcomes			
Variable	$\bar{X}$	SD	Range
Composite satisfaction score ( $\alpha = 0.87$ ) <sup>a</sup>	3.2	1.3	1–5
Composite function score ( $\alpha = 0.9$ ) <sup>a</sup>	1.94	0.94	0–3
Variable	n	%	
Participation in Sexual Activity			
In the past four weeks, did you engage in any sexual activity either alone or with a partner?			
Yes	154	69	
No	68	31	
Satisfaction With Sex Life			
In the past four weeks, how satisfied were you with your sex life?			
Not at all	56	25	
A little or somewhat	82	37	
Very or completely	84	38	
In the past four weeks, how satisfied were you with the frequency of your sexual activity?			
Not at all	51	23	
A little or somewhat	82	37	
Very or completely	89	40	
In the past four weeks, how big a problem did you consider your sexual functioning to be?			
No problem	98	44	
Very small or small	66	30	
Moderate or big	58	26	
Sexual Function (N = 160)			
In the past four weeks, how often did you experience a lack of sexual desire?			
Never	40	25	
Sometimes	74	46	
Usually or always	46	29	
In the past four weeks, how often did you experience a lack of sexual arousal?			
Never	56	35	
Sometimes	63	40	
Usually or always	41	26	
In the past four weeks, how often did you experience difficulty reaching orgasm?			
Never	72	45	
Sometimes	50	31	
Usually or always	38	24	
<sup>a</sup> Higher scores indicate better satisfaction or function. Note. Because of rounding, not all percentages total 100. N = 222 unless otherwise noted.			

Bivariate Analyses

Several variables were associated with sexual well-being (see Table 3): younger age, male gender, and being married or partnered were all associated with a significantly higher probability of having engaged in sexual activity (all,  $p < 0.01$ ). No sociodemographic or medical variables were associated with satisfaction, but younger age ( $p < 0.01$ ), longer time since diagnosis, never having experienced a recurrence and, for women, reporting pre- or perimenopausal status (both,  $p < 0.05$ ) were associated with better reported sexual function. Finally, perceived health status was associated with all three indices of sexual well-being: survivors who reported at or above average MCS or PCS function were more likely to have participated in sexual activity, were more satisfied with their sexual experiences, and reported better sexual function (all,  $p < 0.01$ ;  $p = 0.06$  for association between participation and MCS).

Multivariate Analyses

Table 4 displays the results of multivariate analyses stratified by gender. Regarding participation, for men and women, older age, not being married or partnered, and below average physical function were all associated with lower odds of having participated in sexual activity (all,  $p < 0.05$ ). In addition, for men, longer time since diagnosis was associated with lower odds of participation ( $p < 0.05$ ). In the model of satisfaction, only below average mental function was associated with worse satisfaction for men ( $p < 0.05$ ) and women ( $p < 0.01$ ). For men, older age also was related to poorer satisfaction ( $p < 0.01$ ). Older age ( $p < 0.01$ ) was associated with poorer function for men, whereas below average physical function and shorter time since diagnosis (both,  $p < 0.05$ ) were associated with worse sexual function for women.

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## Discussion

The authors investigated sexual well-being among survivors of aggressive NHL in the context of several sociodemographic, medical, and psychosocial variables for a population whose sexual well-being is likely to be

negatively affected by their intense treatment regimens but for whom little literature to date has addressed.

Consistent with findings from studies focused on other survivor populations, the authors found substantial numbers of NHL survivors to be sexually active but reporting difficulties with sexual satisfaction and

**Table 3. Bivariate Associations Between Study Variables and Sexual Outcomes**

	Participation in Sexual Activity (N = 222)			Satisfaction <sup>b</sup> (N = 222)		Function <sup>b</sup> (N = 160)			
Variable	$\bar{X}$	SD	p <sup>a</sup>	r	p <sup>c</sup>	r	p <sup>c</sup>		
Age (years)			< 0.01	−0.04	0.53	−0.23	< 0.01		
Of those responding “Yes”	55.05	14.63							
Of those responding “No”	63.79	13.42							
Time since diagnosis (years)			0.06	0.01	0.94	0.18	0.02		
For those responding “Yes”	3.47	0.86							
For those responding “No”	3.71	0.83							
Variable	n	%	p <sup>a</sup>	$\bar{X}$	SD	p <sup>c</sup>	$\bar{X}$	SD	p <sup>c</sup>
Gender			< 0.01			0.16			0.09
Male	140	63		3.09	1.16		2.04	0.91	
Female	82	37		3.34	1.44		1.77	0.97	
Race			0.19			0.64			0.54
Caucasian	163	73		3.23	1.3		1.91	0.96	
Non-Caucasian	59	27		3.14	1.3		2.02	0.88	
Marital status			< 0.01			0.45			0.45
Married or partnered	180	81		3.16	1.29		1.97	0.92	
Separated, widowed, divorced, or single	42	19		3.31	1.32		1.84	1.01	
Education			0.1			0.19			0.84
High school or less	53	24		3.36	1.39		1.91	1.01	
Some college	75	34		3.3	1.19		1.89	0.9	
College or more	94	42		3.01	1.3		1.98	0.94	
Treatment history			0.64			0.69			0.43
Chemotherapy only	115	52		3.23	1.27		1.99	0.9	
Chemotherapy plus other treatment	107	48		3.17	1.34		1.88	0.99	
Experienced a recurrence			0.19			0.06			0.02
Yes	27	12		2.8	1.37		1.51	1.09	
No	195	88		3.27	1.28		2	0.9	
Menopausal status (N = 99)			0.06			0.46			0.02
Pre- or perimenopausal	25	25		3.56	1.14		2.28	0.61	
Postmenopausal	74	75		3.29	1.5		1.6	1.02	
SF-36® mental component summary			0.06			< 0.01			< 0.01
Below average	81	36		2.75	1.22		1.66	0.97	
At or above average	141	64		3.52	1.27		2.1	0.89	
SF-36® physical component summary			< 0.01			< 0.01			< 0.01
Below average	94	42		2.99	1.34		1.71	0.98	
At or above average	128	58		3.45	1.21		2.16	0.85	

<sup>a</sup> Test statistic for continuous variables: independent samples t test; test statistic for categorical variables:  $\chi^2$  with (# categories − 1) degrees of freedom

<sup>b</sup> Higher scores indicate better satisfaction or function.

<sup>c</sup> Test statistic for continuous variables: bivariate correlation; test statistic for categorical variables: independent samples t test or analysis of variance (for education)

function. These results add to an existing evidence base that identifies issues with sexual well-being as common among cancer survivors, supports recommendations for sexual well-being to be routinely addressed in cancer care, and champions sexual well-being as an area of continued investigation within the evolving survivorship research agenda.

The authors investigated three indices of sexual well-being and found different patterns of association with study variables and by gender for each. Among men and women, participation in sexual activity was lowest among survivors who were older, without a spouse or partner, and who reported below average physical function. These survivors may require information on ways to participate in sexual activity while coping with physical limitations (McCabe, Cummins, & Deeks, 2000), strategies for initiating new intimate relationships after diagnosis and treatment for cancer (Ganz et al., 1996), and recommendations on ways to maintain sexual activity despite common age-related obstacles such as menopausal symptoms or erectile dysfunction (Bachmann & Leiblum, 2004; Goldstein, 2004). The men in the sample who were further from time of diagnosis were less likely to have participated in sexual activity. Previous reports have shown the opposite; however, in those studies, substantial portions of the samples were either in treatment (Carmack Taylor et al., 2004) or significantly younger (Mumma et al., 1992) than those in the current study.

Reported sexual satisfaction was worse among survivors with below average mental function and older men. These same survivors reported poorer sexual function as well (although the effect was marginal for mental function in the models of sexual function;  $p = 0.06$  for both men and women). Although mental function was not associated with participation in sexual activity, physical function was, suggesting that poor physical function may be a significant barrier to *engaging* in sexual activity, whereas poor mental function may disrupt the *experience* of sexual activity. This result is consistent with previous studies showing that psychological factors have an impact on sexual experience, both in the general population (American Psychiatric Association, 2000; Van Minnen & Kampman, 2000) and for cancer survivors (Beckjord & Campas, 2007; Can et al., 2008; Ganz et al., 1999; Syrjala et al., 1998), highlighting the relevance of sexual-well being to survivors' overall psychosocial functioning. The results also support the suggestion that interventions aimed at benefiting survivors' psychosocial outcomes may positively impact sexual satisfaction and function as well (Beckjord & Campas, 2007).

In contrast to previous studies of breast cancer survivors that have suggested younger women are more likely to report poorer sexual outcomes (Stead, 2003), older women in this study reported worse sexual well-

being in that they were less likely to participate in sexual activity. One reason for this may have to do with average age at diagnosis, which is younger for women diagnosed with breast cancer than for women diagnosed with NHL (Howlader et al., 2011). In addition, previous reports of poorer sexual outcomes among younger women have specifically indicated young survivors experiencing premature menopause as being at particular risk (Burwell et al., 2006; Ganz et al., 1998). Although the authors included current menopausal status in the analyses, no significant associations with any study outcome were noted and the authors were unable to ascertain whether menopause occurred prematurely or as a result of cancer treatment.

Two additional gender differences observed were that below average physical function and shorter time since diagnosis were associated with poorer sexual function for women but not for men. Attention to indicators of physical function—such as pain (Schantz Laursen, Overvad, Olesen, Delmar, & Arendt-Nielsen, 2006; Schlesinger, 1996)—as they relate to sexual function may be of particular importance to women. In addition, for women, problems with sexual function may require increased attention earlier in survivorship (Kao et al., 2002). Finally, education, race and ethnicity, treatment history, and whether a survivor had experienced a recurrence were unrelated to sexual well-being in this study. In this relatively homogeneous group of survivors diagnosed with aggressive NHL, relatively few had experienced a recurrence and all had received chemotherapy. Therefore, the authors were limited in the ability to examine variability in recurrence and treatment history against indices of sexual well-being.

## Limitations

By using cross-sectional data, the authors were unable to make causal claims about associations observed. Generalizability of the results may be limited by the exclusion of participants with missing data. In addition, the authors lacked data on sexual well-being before NHL diagnosis or comparison data from a nonsurvivor control group. Although some studies have shown cancer survivors to report poorer sexual outcomes than non-survivor controls (Broeckel, Thors, Jacobsen, Small, & Cox, 2002; Mumma et al., 1992; Syrjala et al., 2000), others have shown that survivors' sexual well-being is comparable to individuals without a history of cancer (Ganz et al., 1998). Although the authors' results cannot provide evidence that survivors' sexual well-being differs from nonsurvivors', the findings do suggest that sexual difficulties are fairly common among NHL survivors two- to five-years postdiagnosis, and survivors with physical and mental functioning below that of the average person in the United States are likely to be at greater risk for sexual problems. The authors did not

Table 4. Multivariate Regressions of Participation in Sexual Activity, Satisfaction With Sex Life, and Sexual Function<sup>a</sup>

Variable	Participation (N = 222)						Satisfaction <sup>b</sup> (N = 222)				Function <sup>b</sup> (N = 160)			
	Men			Women			Men		Women		Men		Women	
	OR	95% CI	p	OR	95% CI	p	β	p	β	p	β	p	β	p
Age (years)	0.94	[0.89, 0.98]	< 0.01	0.93	[0.88, 0.98]	< 0.01	−0.02	0.01	0.02	0.22	−0.02	< 0.01	−0.01	0.2
Years since diagnosis	0.48	[0.25, 0.94]	0.03	0.74	[0.4, 1.35]	0.32	−0.06	0.62	−0.01	0.97	0.011	0.34	0.33	0.02
Race or ethnicity														
Caucasian	1			1			0		0		0		0	
Non-Caucasian	0.45	[0.12, 1.68]	0.24	0.87	[0.26, 2.93]	0.82	−0.13	0.62	−0.3	0.34	0.26	0.27	0.29	0.26
Marital status														
Married or partnered	1			1			0		0		0		0	
Separated, widowed, divorced, or single	0.12	[0.03, 0.54]	< 0.01	0.13	[0.04, 0.42]	< 0.01	−0.01	0.98	0.52	0.08	−0.37	0.12	−0.21	0.42
Education														
High school or less	0.51	[0.14, 1.8]	0.29	1.49	[0.4, 5.65]	0.55	0.52	0.05	0.51	0.16	0.17	0.48	−0.07	0.81
Some college	3.25	[0.67, 15.8]	0.14	3.48	[0.91, 13.37]	0.07	0.43	0.11	0.33	0.32	−0.14	0.52	0.1	0.71
College or more	1			1			0		0		0		0	
Treatment history														
Chemotherapy only	1			1			0		0		0		0	
Chemotherapy plus other treatment	0.78	[0.26, 2.35]	0.65	0.87	[0.28, 2.75]	0.81	0.09	0.67	−0.3	0.32	−0.01	0.6	−0.18	0.49
Recurrence														
Yes	0.61	[0.14, 2.69]	0.51	1.28	[0.28, 5.84]	0.75	−0.43	0.19	−0.2	0.59	−0.32	0.29	−0.32	0.3
No	1			1			0		0		0		0	
SF-36 <sup>®</sup> mental component summary														
Below average	1.12	[0.33, 3.79]	0.86	0.56	[0.18, 1.73]	0.32	0		0		0		0	
At or above average	1			1			0.56	0.02	1.13	< 0.01	0.41	0.06	0.48	0.06
SF-36 <sup>®</sup> physical component summary														
Below average	0.21	[0.06, 0.7]	0.01	0.28	[0.09, 0.9]	0.03	0		0		0		0	
At or above average	1			1			0.16	0.48	0.54	0.08	0.02	0.93	0.5	0.04
Menopausal status														
Pre- or perimenopausal	—	—	—	0.64	[0.1, 4.21]	0.64	—	—	0		—	—	0	
Postmenopausal				1					−0.5	0.27			−0.16	0.64

<sup>a</sup>Adjusted R<sup>2</sup> for men: satisfaction model = 0.08; for women, 0.19. Adjusted R<sup>2</sup> for men: function model = 0.1; for women, 0.27.<sup>b</sup>Higher scores indicate better satisfaction or function.

CI—confidence interval; OR—overall response



asses some variables that are likely related to sexual well-being; for example, concerns about body image and relationship issues with a partner are psychological factors that can play a role in sexual outcomes for cancer survivors (Ganz et al., 1999; Rogers & Kristjanson, 2002), but these variables were not included in the current study.

## Implications for Nursing and Survivorship Care

As an important component of psychosocial adjustment, sexual well-being should be routinely addressed in follow-up cancer care for all survivors, including NHL survivors, for several years postdiagnosis (McKee & Schover, 2001; Stead, 2003). Communication with providers and partners is key to effectively addressing survivors' sexual concerns (Jonker-Pool et al., 2004), and oncology nurses are in an excellent position to assess the sexual concerns of cancer survivors (Dean, 2008; Wilmoth, 2006). Survivorship care plans may help nurses to address survivors' sexual well-being by providing a communication tool that can facilitate nurse-survivor communication about sensitive topics (e.g., details of sexual behavior, sexual response experiences) (Hewitt et al., 2006; Hughes, 2009). Adequately addressing sexual concerns may involve several approaches, including education, pharmacotherapy, and psychosocial intervention (Kao et al., 2002; Tan et al., 2002). However, a need for more research exists—research in which oncology nurses will play a key role—to strengthen the evidence base supporting interventions to promote healthy and robust sexual function among cancer survivors (Shell, 2002; Wilmoth, 2006). In the interim, all providers involved in the care of patients with cancer need to legitimize survi-

vors' sexual concerns and to recognize that sexual well-being is a multifaceted, dynamic construct that deserves continued attention throughout survivorship (Taylor & Davis, 2007).

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