



Assessing similarities and differences in health-related quality of life among African-American women with and without breast cancer

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Abstract

Background: While current incidence rates are 4% lower for African American compared to white women (118 v. 123 per 100,000); African-American women are more likely to be diagnosed with breast cancer at younger ages with more aggressive and advanced tumors. Consequently, death rates are 41% higher for African-American women as compared to whites. This disparity may also extend to nonclinical outcomes, including health-related quality of life (HR-QoL). When compared to their white counterparts, consistent patterns in HR-QoL deficits have been noted among African-American women with and without breast cancer. It is important to examine the impact of physical, social and psychological factors on health outcomes in greater detail. The present study compares HR-QoL among African-American women without breast cancer, to those with breast cancer and other cancers from a national representative sample to a community cohort. The primary purpose was to assess similarities and differences in HR-QoL among African-American women with and without a history of breast cancer. We hypothesized that African American women with breast cancer would report poorer HR-QoL than those without breast cancer. **Methods:** Three cohorts of African-American women from the 2010 National Health Interview Survey (NHIS): without cancer (n=1,348); with breast cancer (n=50) and with other cancers (n=82) were compared to participants from Survivors Involving Supporters to Take Action in Advancing Health (SISTA AH Talk) breast cancer support group (n=70) to assess HR-QoL characterized by recent physical and mental health using the Patient Reported Outcomes Measurement Information System (PROMIS) v. 1.0 Global Health Scale. Descriptive statistics were completed to characterize study participants demographics. Multivariate regression analyses estimated differences in respondents' HR-QoL. **Results:** Demographic differences were noted among study cohorts. Proportionately, more African-American women with any cancer were 50 years or older compared to respondents without cancer. Significantly more SISTA AH Talk respondents were: 1) married when compared to NHIS respondents with breast cancer (p=0.0148) and with other cancers (p = 0.0042) and 2) better educated than NHIS respondents without cancer (p<.0001) or with breast cancer (p<.0001). When we controlled for these differences, compared to SISTA AH Talk respondents, NHIS respondents without cancer were significantly more likely to report: 1) good-to-excellent physical functioning; 2) little-to-no-pain; 3) little fatigue and 4) rarely-or-never experiencing emotional difficulties for the past seven days. In contrast, NHIS respondents with other cancers were more likely to report: 1) little-to-no fatigue and 2) never-to-rarely experience emotional difficulties than SISTA AH Talk respondents.

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Introduction

There are currently more than 2.8 million breast cancer survivors (BCS) in the United States (US). In 2013, an estimated 232,240 new cases of invasive breast cancer will be diagnosed among women as well as an estimated 64,640 additional cases of in situ breast cancer. In addition, BCS are the largest group of female cancer survivors worldwide.

Although the number of BCS is increasing as a result of continual improvements in diagnostic screening and anticancer treatments, there are still survival disparities by race/ethnicity. African American women have the lowest breast cancer survival rate of any racial/ethnic group with a death rate 41% higher than that of white women. For survivors of breast cancer, problems include higher co-morbidity and mortality related to some breast cancer regimens and functional impairment. This disparity may also extend to nonclinical outcomes, including health-related quality of life (HR-QoL).

There has been considerable interest in the HR-QoL of BCS in recent years. HR-QoL is a multidimensional population health outcome that supplements more traditional measures of mortality and morbidity and is useful in providing broad summary measures of perceived health. HR-QoL constructs include measures of overall health, physical health, mental health, and social functioning.

When compared to their white counterparts, consistent patterns in HR-QoL deficits have been noted among African-American women with and without breast cancer. As a result, it is important to examine the impact of physical, social and psychological factors on health outcomes in greater detail. The public health community has become more focused on understanding how to improve HR-QoL among individuals with multiple chronic conditions and disabilities.

Methods

This study analyzed three cohorts of African-American women from the 2010 National Health Interview Survey (NHIS): without cancer (n=1,348); with breast cancer (n=50) and with other cancers (n=82). These cohorts were compared to participants from Survivors Involving Supporters to Take Action in Advancing Health (SISTA AH Talk), a breast cancer support group (n=70), to assess HR-QoL characterized by recent physical and mental health using the Patient Reported Outcomes Measurement Information System (PROMIS) v. 1.0 Global Health Scale. Descriptive statistics were completed to characterize study participants demographics. Multivariate regression analyses estimated differences in respondents' HR-QoL.

Results

Table 1. Demographics for Comparison Groups by Cancer Status

Characteristic	Comparison group (n=70) n (%)	Without cancer (n=1348) n (%)	Breast cancer (n=50) n (%)	Other cancer (n=82) n (%)
Age		p=0.0006	p= 0.3347	p=0.8629
35-49	16 (23)	594 (44)	8 (16)	20 (24)
50+	53 (77)	754 (56)	42 (84)	62 (76)
Marital Status		p=0.6914	p= 0.0148	p = 0.0042
Currently married	26 (37)	361 (27)	14 (28)	12 (19)
Separated, divorced, widowed	29 (41)	591 (44)	28 (56)	40 (62)
Never married or Unmarried couple	15 (21)	396 (29)	8 (16)	12 (19)
Education		p<.0001	p<.0001	p=0.6427
High school graduate	18 (32)	1034 (77)	34 (71)	19 (22)
Some college, college graduate, graduate	38 (68)	301 (23)	14 (29)	56 (64)
Income		p= 0.0678	p=0.4602	p=0.6427
Less than \$25,000	26 (38)	299 (41)	13 (50)	11 (44)
\$25,000-\$49,000	22 (32)	314 (43)	6 (23)	11 (44)
\$50,000+	21 (30)	113 (16)	7 (27)	3 (12)

Table 2. Differences in health-related quality of life among African American women by cancer status

Variable	Comparison group n=70 n (%)	Without Cancer n=1348 n (%)	p-value	Breast cancer n=50 n (%)	p-value	Other cancer n=82 n (%)	p-value
Physical Health good-excellent	59 (86)	937 (78)	p = 0.1476	33 (75)	p= 0.1615	45 (62)	p = 0.0013
fair - poor	10 (14)	262 (22)		11 (25)		28 (38)	
Physical Functioning good - excellent	61 (87)	1063 (89)	p = 0.6987	33 (75)	p = 0.0970	49 (67)	p = 0.0045
fair - poor	9 (13)	186 (11)		11 (25)		24 (33)	
Pain	40 (59)	939 (78)	p = 0.0002	32 (73)	p = 0.1337	43 (60)	p = 0.9139
No pain/Little pain/Moderate pain	28 (41)	258 (22)		12 (27)		29 (40)	
Fatigue not at all - somewhat a bit - very much	14 (20)	100 (92)	p = <.0001	40 (91)	p = <.0001	62 (85)	p = <.0001
fair - poor	55 (80)	97 (8)		4 (9)		11 (15)	
Social Functioning good-excellent	63 (90)	1034 (86)	p = 0.3881	35 (80)	p = 0.1177	52 (71)	p = 0.0047
fair - poor	7 (10)	163 (14)		9 (20)		21 (29)	
Mental Health good-excellent	60 (87)	1059 (88)	p = 0.7317	40 (91)	p = 0.7859	57 (79)	p = 0.0209
fair - poor	9 (13)	140 (12)		4 (9)		16 (21)	
General health good - excellent	65 (93)	1050 (88)	p = 0.1933	36 (82)	p = 0.0710	58 (79)	p = 0.0236
fair - poor	5 (7)	148 (12)		8 (18)		15 (20)	
Role emotional good-excellent	22 (31)	103 (92)	p = <.0001	42 (95)	p = <.0001	62 (85)	p = <.0001
fair - poor	48 (69)	94 (8)		2 (5)		11 (15)	

Table 3. Multivariate Regression Models for quality of life subscales by cancer status

Variable	Odds Ratio (CI)	P-value
Physical Health (Excellent, Very Good, Good)		
Non-Cancer Survivors	1.00	0.1638
VOICE	0.565 [0.253, 1.262]	
Other Cancer Survivors	1.00	0.3523
VOICE	2.162 [0.426-10.972]	
Breast Cancer Survivors	1.00	0.8958
VOICE	1.21 [0.203-6.180]	
Physical Functioning (Excellent, Very Good, Good)		
Non-Cancer Survivors	1.00	0.0025
VOICE	0.228 [0.087, 0.594]	
Other Cancer Survivors	1.00	0.2067
VOICE	2.792 [0.466-16.714]	
Breast Cancer Survivors	1.00	0.8242
VOICE	0.809 [0.125-5.241]	
Social Functioning (Excellent, Very Good, Good)		
Non-Cancer Survivors	1.00	0.5011
VOICE	0.729 [0.289-1.833]	
Other Cancer Survivors	1.00	0.0765
VOICE	4.796 [0.846-27.179]	
Breast Cancer Survivors	1.00	0.5918
VOICE	1.575 [0.299-8.283]	
Pain (1 to 5 - No pain to A little pain)		
Non-Cancer Survivors	1.00	0.0250
VOICE	0.443 [0.218-0.903]	
Other Cancer Survivors	1.00	0.0407
VOICE	9.042 [1.098-74.471]	
Breast Cancer Survivors	1.00	0.1384
VOICE	0.236 [0.035-1.593]	
Fatigue (Not at all, A little bit, Somewhat)		
Non-Cancer Survivors	1.00	<.0001
VOICE	0.009 [0.003-0.024]	
Other Cancer Survivors	1.00	0.0008
VOICE	0.037 [0.005-0.256]	
Breast Cancer Survivors	-	-
Mental Health (Excellent, Very Good, Good)		
Non-Cancer Survivors	1.00	0.0811
VOICE	0.445 [0.179-1.105]	
Other Cancer Survivors	1.00	0.4822
VOICE	1.867 [0.327-10.649]	

Discussion/Conclusion

DISCUSSION: This study suggests that African American BCS report lower HR-QoL than African American women without cancer and this notion is supported by other literature. Knowing that African American breast cancer survivors are at risk for poorer HR-QoL, implementing interventions focused on increasing physical activity and physical health and managing emotional health and mental health among breast cancer survivors may serve beneficial in diminishing the HR-QoL problems experienced by this population.

CONCLUSIONS: Further research should investigate HR-QoL among African American women who have survived breast cancer and other cancers. It is important to consider factors that affect HR-QoL among breast cancer survivors and develop strategies that may help improve quality of life.

In lieu of these findings, public health agencies should adopt effective practices to improve African American BCS mental and physical health as well as continue efforts to improve overall quality of life among African American BCS and women with other cancers.