



Beliefs and Behaviors about Breast Cancer Recurrence Risk Reduction among African American Breast Cancer Survivors

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ABSTRACT

A growing body of evidence suggests that breast cancer recurrence risk is linked to lifestyle behaviors. The present study examined correlations between breast cancer recurrence, risk reduction beliefs, and related behaviors among African American breast cancer survivors (AA BCSs). Study participants included 191 AA BCSs, mean age = 56.3 years, who completed a lifestyle assessment tool. Most respondents believed that being overweight (52.7%), lack of physical activity (48.7%), and a high fat diet (63.2%) are associated with breast cancer recurrence. Over 65% considered themselves overweight; one third (33.5%) agreed that losing weight could prevent recurrence, 33.0% disagreed, the remaining 33.5% did not know; and nearly half (47.9%) believed that recurrence could be prevented by increasing physical activity. Almost 90% of survivors with body-mass index (BMI) values <25 Kg/M² reported no recurrence compared to 75.7% with BMI values ≤ 25 Kg/M² (p = 0.06); nearly all of the women (99.2%) answered “yes” to seeking professional help to lose weight, 79.7% of which were recurrence-free (p = 0.05). These results provide information about AA BCSs’ beliefs and behaviors protective against breast cancer recurrence. Additional research is warranted to determine, for AA BCSs, the effectiveness of educational interventions that promote consumption of a healthy diet and engaging in regular physical activity.
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INTRODUCTION

Except for skin cancers, breast cancer (BC) is the most common cancer among American women. In the US, there are 2.8 million breast cancer survivors (BCSs), representing ~41% of all female cancer survivors.

The recurrence risk for BC is 5% –13%. A primary means for reducing recurrence is by medical intervention; however, evidence suggests that the risk of BC recurrence is also linked to lifestyle behaviors (weight, physical activity, dietary intake).

The American Cancer Society (ACS) and the American Institute for Cancer Research (AICR) recommend that women with a history of BC eat fruits and vegetables regularly, be physically active, and maintain a healthy body weight.

Many BCSs report poor adherence to cancer prevention strategies aimed at reducing recurrence. Weight gain is a common problem among BCSs. Only ~ 1/3 BCSs engage in the recommended level of physical activity, and < 18% consume the recommended amounts of fruits and vegetables.

African American (AA) survivors face disparities in morbidity and mortality associated with BC. Compared to other racial/ethnic groups, AA BCSs are more likely to be obese, physically inactive, and not consume the recommended daily fruit and vegetable servings.

The current study examined correlations between BC recurrence and risk reduction beliefs and related behaviors among African American BCSs.

METHODS

Study participants: Members of a BC support group, Survivors Involving Supporters to Take Action in Advancing Health (SISTA AH) Talk, in Miami, Florida. The 2011 Behavioral Risk Factor Surveillance System (BRFSS) and the 2009-2010 National Health and Nutrition Examination Survey (NHANES) were used to develop a lifestyle assessment tool (LAT). Following consent, participants (n = 240) who were English-speaking/reading and at least one-year post-treatment completed the LAT through various modes (e.g., self-administered on-line or mailed version or facilitator-administered in-person or by telephone interview). Participants completed parts of the LAT relating to weight and BC history, physical activity, and dietary intake.

Measures: Socio-demographic variables were age, education, income, marital status and BMI. BC diagnosis and treatment history was captured as year of diagnosis, stage at diagnosis, hormone receptor status, type of treatment received, and history of recurrence. BC recurrence risk reduction beliefs and behaviors were related to lifestyle factors (weight, physical activity, and dietary intake).

Statistical analyses: Frequencies and proportions were used for all categorical data and to identify relationships between risk reduction beliefs and behaviors and BC recurrence. Multivariate logistic regression analyses were performed to assess the association of risk reduction beliefs and behavior performance with BC recurrence. Models were conducted for risk reduction beliefs and behavior performance of weight, physical activity, and dietary intake, separately. All statistical analyses were accomplished with SAS version 9.2 (SAS Institute, Cary, NC, USA).

RESULTS

Variable	Total N (%)	Recurrence N (%)	No Recurrence N (%)	p-value*
Age (Years)				0.7192
18-34	6 (3.2)	2 (33.3)	4 (66.7)	
35-54	69 (36.9)	14 (20.3)	55 (79.7)	
≥55	112 (59.9)	22 (19.6)	90 (80.4)	
Income (Annual)				0.8001
≤\$24,999	59 (31.5)	14 (23.7)	45 (76.3)	
\$25,000-\$50,000	68 (36.4)	13 (19.1)	55 (80.9)	
≥\$50,000	60 (32.1)	12 (20.0)	48 (80.0)	
Education				0.4875
High school or Less	40 (21.3)	11(27.5)	29 (72.5)	
College	118 (62.8)	22 (18.6)	96 (81.4)	
Graduate	30 (15.9)	6 (20.0)	24 (80.0)	
Marital Status				0.9265
Single	43 (23.0)	9 (20.9)	34 (79.1)	
Married	70 (37.4)	15 (21.4)	55 (78.6)	
Widowed or Divorced	74 (39.6)	14 (18.9)	60 (81.1)	
Stage at Diagnosis				<0.0001
Stage I	76 (41.1)	11 (14.5)	65 (85.5)	
Stage II	50 (27.0)	7 (14.0)	43 (86.0)	
Stage IIIA, IIIB & IV	40 (21.6)	19 (47.5)	21 (52.5)	
Don't Know	19 (10.3)	2 (10.5)	17 (89.5)	
BC Treatment				0.1269
Chemotherapy	110 (58.5)	27 (24.6)	83 (75.4)	
No Chemotherapy	78 (41.5)	12 (15.4)	66 (84.6)	
Surgery	166 (88.3)	37 (22.3)	129 (77.7)	0.1514
No Surgery	22 (11.7)	2 (9.1)	20 (90.9)	
Radiation	124 (66.0)	27 (21.8)	97 (78.2)	0.6280
No Radiation	64 (34.0)	12 (18.8)	52 (81.2)	
Hormone	58 (30.8)	11 (19.0)	47 (81.0)	0.6878
No Hormone	130 (69.2)	28	102	
BMI				0.0796
Healthy	71 (37.8)	9 (12.7)	62 (87.3)	
Overweight	60 (31.9)	17 (28.3)	43 (71.7)	
Obese	57 (30.3)	13 (22.8)	44 (77.2)	

* p- value <0.05 is significant

Lifestyle Variable	Total N (%)	BC Recurrence Yes	No (free)	p-value*
Weight				
BMI				0.0580
BMI <25Kg/M ²	71 (40.8)	9 (12.7)	62 (87.3)	
BMI >25Kg/M ²	103 (59.2)	25 (24.3)	78 (75.7)	
Have you tried to lose weight?				0.6806
Yes	122 (65.6)	26 (21.3)	96 (78.7)	
No	64 (34.4)	12 (18.8)	52 (81.2)	
Did you seek help from a professional to lose weight?				0.0508
Yes	133 (99.2)	27 (20.3)	106 (79.7)	
No	1 (0.8)	1 (100.0)	0 (0.0)	
Have you ever tried to lose weight?				0.1359
Yes	155 (82.4)	29 (18.7)	126 (81.3)	
No	33 (17.6)	10 (30.3)	23 (69.7)	
Physical Activity				0.4657
Did you participate in any physical activities/exercises in the past month?				
Yes	127 (69.8)	24 (18.9)	103 (81.1)	
No	55 (30.2)	13 (23.6)	42 (76.4)	
Did you do muscle strengthening in the past month?				0.8186
Yes	117 (68.0)	23 (19.7)	94 (80.3)	
No	55 (32.0)	10 (18.2)	45 (81.8)	
Dietary Intake				0.1148
Did you eat red meat?				
Yes	169 (94.9)	37 (21.9)	132 (78.1)	
No	9 (5.1)	0 (0.0)	9	
Did you eat processed meat?				0.2018
Yes	172 (96.6)	37 (21.5)	135 (78.49)	
No	6 (3.4)	0 (0.0)	6 (100.0)	
Did you eat fruits or vegetables?				(None)
Yes	181 (100.0)	39 (21.6)	142 (78.4)	
Did you eat salad?				(None)
Yes	184 (100.0)	39 (21.2)	145 (78.8)	
Did you eat whole grain?				(None)
Yes	178 (100.0)	35 (19.7)	143 (80.3)	
Did you eat sweets, sugar, candy?				0.3926
Yes	173 (98.3)	34 (19.6)	139 (80.4)	
No	3 (1.7)	0 (0.00)	3 (100.0)	

* p- value <0.05 is significant.

RESULTS

Lifestyle Variable	Total N (%)	BC Recurrence Yes	No (free)	p-value*
Weight				
Do you consider yourself overweight now?				0.2859
overweight	124 (66.3)	30 (24.2)	94 (75.8)	
underweight	6 (3.2)	0 (0.0)	6 (100.0)	
Right weight	54 (28.9)	9 (16.7)	45 (83.3)	
Don't Know	3 (1.6)	0 (0.0)	3 (100.0)	
Is being overweight associated with BC recurrence?				0.0358
Yes	98 (52.7)	18 (18.4)	80 (81.6)	
No	57 (30.6)	18 (31.6)	39 (68.4)	
Don't Know	31 (16.7)	3 (9.7)	28 (90.3)	
Will BC recurrence be prevented by losing weight?				0.4419
Yes	63 (33.5)	13 (20.6)	50 (79.4)	
No	62 (33.0)	10 (16.1)	52 (83.9)	
Don't know	63 (33.5)	16 (25.4)	47 (74.6)	
Physical Activity				
Is lack of physical activity/exercise associated with BC recurrence?				0.1831
Yes	91 (48.7)	16 (17.6)	75 (82.4)	
No	43 (23.0)	13 (30.2)	30 (69.8)	
Don't Know	53 (28.3)	9 (17.0)	44 (83.0)	
By increasing physical activity/exercise prevent BC recurrence?				0.1781
Yes	89 (47.9)	14 (15.7)	75 (84.3)	
No	41 (22.0)	9 (22.0)	32 (78.0)	
Don't Know	56 (30.1)	16 (28.6)	40 (71.4)	
Dietary Intake				0.0474
Is high fat diet associated with BC recurrence?				
Yes	117 (63.2)	24 (20.5)	93 (79.5)	
No	27 (14.6)	10 (37.0)	17 (63.0)	
Don't Know	41 (22.2)	5 (12.2)	36 (87.8)	

* p- value <0.05 is significant.

Factors	Weight OR (95% C.I.)	Physical activity OR (95% C.I.)	Dietary Intake OR (95% C.I.)
Belief *	0.90 (0.51, 1.59)	0.76 (0.56, 1.03)	0.82 (0.51, 1.32)
Behavior **	2.01 (0.84, 4.82)	0.88 (0.39, 2.02)	-
Age	0.67 (0.33, 1.43)	0.76 (0.38, 1.52)	0.77 (0.40, 1.50)
Income	0.77 (0.41, 1.40)	0.81 (0.46, 1.44)	0.85 (0.49, 1.46)
Education	0.56 (0.25, 1.26)	0.84 (0.39, 1.81)	0.77 (0.37, 1.58)
Marital status	0.69 (0.39, 1.24)	0.86 (0.50, 1.48)	0.98 (0.58, 1.66)
Stage at diagnosis	1.27 (0.84, 1.90)	1.31 (0.90, 1.90)	1.44 (1.00, 2.08)

* Questions relating to beliefs: Weight: Is being overweight associated with BC recurrence? Physical activity: Is lack of physical activity/exercise associated with BC recurrence? Dietary intake: Is a high fat diet associated with BC recurrence? ** Items/Questions relating to behaviors: Weight: Body mass index Physical activity: Did you participate in any physical activities/exercises in the past month? Dietary intake: Did you eat red meat (beef, pork, ham or sausage) in the past month?

DISCUSSION/CONCLUSIONS

Of 240 BC survivors who completed the LAT, 49 were excluded for failure to complete the weight and height questions. The overall response rate was 80%.

The total number of participants for the current study was 191, with a mean age of 56.3years (SD=11.6; Range= 18 - 55+); 62.2% were overweight/obese; and 20.7% reported BC recurrence.

Many AA BCSs who are overweight or obese and do not engage in recurrence risk reduction behaviors.

Only one third (33.5%) believed that weight loss could prevent BC recurrence, and another third (33.5%) did not know if this is true.

More than half of AA BCSs did not believe or did not know that physical activity is associated with/can prevent BC recurrence.

Culturally-appropriate and tailored interventions are needed to enhance a BC recurrence risk reduction lifestyle among AA BCSs.