HHS Public Access

Knowledge of the Relationship between Breastfeeding and Breast Cancer Risk Among Racial and Ethnic Minority Women

Jamilia R. Sly, Ph.D.[1], **Sarah J. Miller, Psy.D.**[1], **Linda Thelemaque, M.P.H**[1], **Fahd Yazdanie, B.A.**[1], **Rhoda Sperling, M.D.**[2], **Fahimeh Sasan, M.D.**[2], **Elizabeth A. Howell, M.D., M.P.P.**[1,2], **Holly Loudon, M.D., M.P.H.**[2], **Lina Jandorf, M.A.**[1]

[1]Department of Population Health Science and Policy, Icahn School of Medicine at Mount Sinai

[2]Department of Obstetrics, Gynecology and Reproductive Medicine, Icahn School of Medicine at Mount Sinai

Abstract

Research indicates breastfeeding can reduce the risk of breast cancer in women. Black and Hispanic women are more likely to die from breast cancer than non-Hispanic white women and are least likely to breastfeed. The current study was designed to evaluate women's knowledge of the link between breastfeeding and decreased breast cancer risk among a racially diverse cohort of pregnant women. Pregnant women 18 and older (N=89; 48.4% black; 28% Hispanic) were recruited during a prenatal visit to complete a survey. Women indicated limited understanding of the association between breastfeeding and breast cancer risk reduction; less than 40% of black and white women indicated knowledge, while 64.7% of Hispanic women were aware of the association. These findings underscore the need for interventions to educate women about the protective benefits of breastfeeding as a strategy to reduce their breast cancer incidence and mortality.

Keywords

INTRODUCTION

There are multiple known benefits of breastfeeding for both the baby and the mother. Researchers have also found that breastfeeding is protective against the development of some types of female cancers including ovarian[1]. endometrial[2] and breast cancer (BC) for

Corresponding Author: Jamilia R. Sly, Ph.D, **Address:** Department of Population Health Science and Policy, Icahn School of Medicine at Mount Sinai, One Gustave L. Levy Place, Box 1077, New York, New York, 10029, **Fax:** 1-212-849-2564, **Telephone:** 1-212-824-7813, Jamilia.sly@mssm.edu.

the mother herself.[3,4] Extensive evidence [5,6] suggests that breastfeeding is especially protective for triple negative breast cancer (TNBC), which is a more aggressive type of BC. A meta-analysis concluded that the relative risk reduction of BC and in particular, TNBC, associated with breastfeeding ranged from 10 to 20% and was larger than has been previously reported.[7]

The relationship between breastfeeding and decreased BC risk is especially relevant for black and Hispanic women because they are more likely to die from BC than other racial/ethnic groups.[8] Analyses have found that black and Hispanic women were 1.84 (95% CI 1.77 - 1.92) [9] and 1.4 times (95% CI 1.2-1.6),[10] more likely, respectively, to be diagnosed with TNBC compared to white women. Disparities in BC mortality can be attributed to several risk factors including lifestyle characteristics (e.g., obesity, poor nutrition) and genetic susceptibility. Reducing the incidence of TNBC among black and Hispanic women via increased breastfeeding may be a primary prevention approach to reduce TNBC risk. In addition to addressing other modifiable risk factors and promoting BC screening, breastfeeding could contribute to lower mortality rates by impacting the incidence of TNBC in these populations." Breastfeeding rates, however, continue to be below the Healthy People 2020 goals, especially among Black (initiation and continuation) and Hispanic (continuation) women.[11]

An integrative review of the literature on breastfeeding among black women reported that, among other barriers, knowledge of the benefits of breastfeeding significantly impacted a black woman's likelihood to initiate and continue breastfeeding.[12] Lack of knowledge about breastfeeding may be related to decreased rates of continuation among Hispanic women.[13] Thus, increasing knowledge about the benefits of breastfeeding, including the prevention of BC, may improve breastfeeding habits and subsequently reduce risk of developing TNBC. The lower rates of breastfeeding combined with the increased risk of developing TNBC among black women merits further attention and research.

The objective of the current descriptive study was to examine women's knowledge about the benefits of breastfeeding, particularly the link to risk for BC and TNBC among a racially and ethnically diverse cohort of pregnant women.

MATERIALS AND METHODS

Recruitment and Data Collection

This pilot study was approved by the Institutional Review Board. Pregnant women 18 years or older were recruited during a prenatal visit at the OB/GYN practice of an urban hospital. The practice primarily serves underinsured women and some are eligible for Women, Infant and Children (WIC) assistance. The one-time, anonymous self-report survey captured basic socio-demographic information such as age, race/ethnicity, education level and income, as well as breastfeeding knowledge and intentions. The survey took approximately 20 minutes to complete and participants were compensated with a two-trip pre-paid public transportation card upon completion.

Measures

The variables of interest included socio-demographics, breastfeeding knowledge and intentions to breastfeed.

Intention to Breastfeed—Participants were asked to indicate how likely they were to breastfeed their baby using a 4-point Likert-type scale. Responses ranged from 1 (extremely likely) to 4 (not likely at all). Women who indicated they intended to breastfeed were also asked how months they intended to breastfeed their baby.

Breastfeeding Knowledge—Breastfeeding knowledge was measured to determine the participants' understanding of the advantages of breastfeeding for both mother and child. For the current study, items from the "Advantages of breastfeeding to the mother" scale (6 items) were included.[14] The scale was adapted to include an additional statement regarding the benefits of breastfeeding to reduce BC risk. Participants were asked to indicate whether the statement was "True," "False," or "Not Sure". Knowledge scores were computed by summing the number of correct responses to the individual items and converting to an overall percentage. A higher score indicated greater knowledge about the advantages of breastfeeding for mothers. We also included an open-ended question asking participants to list some advantages of breastfeeding for mothers. This question was presented before the knowledge scale.

Statistical Analyses

Univariate analyses described participant characteristics and breastfeeding knowledge and attitudes. Equality of proportions for categorical variables was compared using a chi-square test. Equality of means was tested using one-way analyses of variance. All tests were two-sided and considered significant if $p \leq 0.05$. Some participants chose not to answer questions, but missing data was minimal and thus missing cases were excluded from analysis.

RESULTS

Overall, 89 pregnant women completed the questionnaire. Of these women, 45 (48.4%) were black, 18 (19.4%) were white, and 26 (28.0%) were Hispanic. No statistically significant differences were found for employment status, current school enrollment, insurance status, number of children, and plans to have additional children.

We examined participants' knowledge of the connection between breastfeeding and BC risk reduction. A greater number of Hispanic women correctly understood the relationship (64.7%) in comparison to black (37.8%) and white women (36.8%) but these differences were not statistically significant (p=0.13). When asked to list some advantages of breastfeeding for mothers, only six (67.4%) women mentioned reduced breast cancer risk.

We also examined women's intentions to breastfeed their baby. Black (96%), White (83%) and Hispanic (100%) women reported high intentions to breastfeed, and there were no significant differences among racial groups. Black, white and Hispanic women intended to

breastfeed for an average of 10.97 months (SD =8.50), 8.95 months (SD =8.44) and 8.83 months (SD =6.50), respectively. These differences were not statistically different.

DISCUSSION

The current study examined pregnant women's knowledge about the link between breastfeeding and breast cancer risk, as well as their intentions to breastfeed. All women had relatively low overall knowledge about the advantages of breastfeeding for mothers. Both black and white women had low knowledge that breastfeeding could reduce their risk of developing BC in the future. This study demonstrates the need for culturally targeted interventions to educate women about the potential impact of breastfeeding on overall health and future BC risk. Research is needed to evaluate the effectiveness of interventions to impact breastfeeding behavior, such as intent to breastfeed, initiation of breastfeeding and continuation of breastfeeding. All women reported high intentions to breastfeed but most indicated that they intended to breastfeed for *less* than the recommended duration of 12 months.[15]

This study was not without limitations. First, due to the relatively small sample size and single recruitment location, the results of the present study may not be generalizable to the larger population. Second, knowledge about the association between breastfeeding and BC risk was assessed using question with a two-item response category. This may have limited the range of responses elicited from participants. Qualitative assessments (e.g., in-depth interviews) of BC risk knowledge may have resulted in more nuanced descriptions of the women's awareness of the breast health benefits of breastfeeding. We also did not ask participants' pregnancy trimester, and we only asked about intentions to breastfeed and thus did not capture women's previous breastfeeding behavior, given that many of the women had previous pregnancies. Assessing the attitudes and knowledge of non-parous pregnant women could potentially eliminate any bias related to past breastfeeding behavior and should be assessed in future research.

CONCLUSION

Our study demonstrates that women have low knowledge about the link between BC and breastfeeding, particularly black women. While all women in this study demonstrated high intentions to breastfeed, breastfeeding rates still need improvement. Further research is needed explore specific barriers to breastfeeding for minority women to inform interventions to educate women about the benefits of breastfeeding and the steps they can take to reduce their risk of BC.

ACKNOWLEDGEMENTS

REFERENCES

1. Danforth KN, Tworoger SS, Hecht JL, Rosner BA, Colditz GA, Hankinson SE. Breastfeeding and risk of ovarian cancer in two prospective cohorts. Cancer causes & control. 2007;18(5):517–523. [PubMed: 17450440]

2. Jordan SJ, Na R, Johnatty SE, et al. Breastfeeding and Endometrial Cancer Risk: An Analysis From the Epidemiology of Endometrial Cancer Consortium. Obstetrics & Gynecology. 2017;129(6):1059–1067. [PubMed: 28486362]

3. Ambrosone CB, Zirpoli GR, Bovbjerg DH, et al. Associations between Estrogen Receptor–Negative Breast Cancer and Timing of Reproductive Events Differ between African American and European American Women. Cancer Epidemiology and Prevention Biomarkers. 2014.

4. Stuebe AM, Willett WC, Xue F, Michels KB. Lactation and incidence of premenopausal breast cancer: a longitudinal study. Archives of internal medicine. 2009;169(15):1364–1371. [PubMed: 19667298]

5. Anstey EH, Shoemaker ML, Barrera CM, O'Neil ME, Verma AB, Holman DM. Breastfeeding and Breast Cancer Risk Reduction: Implications for Black Mothers. Am J Prev Med 2017;53(3S1):S40–S46. [PubMed: 28818244]

6. John EM, Hines LM, Phipps AI, et al. Reproductive history, breast-feeding and risk of triple negative breast cancer: The Breast Cancer Etiology in Minorities (BEM) Study. International journal of cancer. 2018.

7. Islami F, Liu Y, Jemal A, et al. Breastfeeding and breast cancer risk by receptor status—a systematic review and meta-analysis. Annals of Oncology. 2015;26(12):2398–2407. [PubMed: 26504151]

8. American Cancer Society. Breast Cancer Facts & Figures 2017-2018. 2017; https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/breast-cancer-facts-and-figures-2017-2018.pdf Accessed May 22, 2018

9. Sineshaw HM, Gaudet M, Ward EM, et al. Association of race/ethnicity, socioeconomic status, and breast cancer subtypes in the National Cancer Data Base (2010-2011). Breast cancer research and treatment. 2014;145(3):753–763. [PubMed: 24794028]

10. Serrano-Gómez SJ, Fejerman L, Zabaleta J. Breast cancer in Latinas: a focus on intrinsic subtypes distribution. Cancer Epidemiology and Prevention Biomarkers. 2018;27(1):3–10.

11. United States Department of Health and Human Services. 2020 Topics & Objectives: Maternal, Infant and Child Health 2013; https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives Accessed May 22, 2018.

12. Spencer BS, Grassley JS. African American women and breastfeeding: an integrative literature review.Health care for women international. 2013;34(7):607–625. [PubMed: 23445372]

13. Besore CT. Barriers to breastfeeding for hispanic mothers. Breastfeeding Medicine. 2014;9(7):352–354. [PubMed: 25211460]

14. Ismail TAT, Sulaiman Z. Reliability and validity of a Malay-version questionnaire assessing knowledge of breastfeeding. The Malaysian journal of medical sciences: MJMS. 2010;17(3):32. [PubMed: 22135547]

15. Eidelman AI, Schanler RJ, Johnston M, et al. Breastfeeding and the use of human milk. Pediatrics.2012;129(3):e827–e841. [PubMed: 22371471]

Table 1.

Sociodemographic Characteristics of Study Sample

	Black		White		Hispanic		
	N	**%**	**N**	**%**	**N**	**%**	***p-value***
Education							***0.007*** [*]
HS Grad or less	18	40.0	5	26.3	13	76.5	
Some College or more	27	60.0	14	73.7	4	23.5	
Marital Status							*0.059*
Married or Partnered	18	40.9	2	10.5	6	35.3	
Single	26	59.1	17	89.5	11	64.7	
Employed							*0.530*
Yes, full time	3	6.8	1	5.3	0	0.0	
Yes, part time	3	6.8	3	15.8	4	23.5	
No	38	86.4	15	78.9	13	76.5	
Currently in school							*0.601*
Yes, full time	11	25.0	9	47.4	5	29.4	
Yes, part time	9	20.5	4	21.1	3	17.6	
No	24	54.5	6	31.6	9	52.9	
Insurance							*0.707*
Yes	41	93.2	19	100.0	16	94.1	
No	3	6.8	0	0.0	1	5.9	
Receiving WIC assistance?							***0.020*** [*]
Yes	36	83.7	9	47.4	14	82.4	
No	7	16.3	10	52.6	3	17.6	
Income							***0.008*** [*]
Less than $25,000	26	61.9	4	21.1	10	62.5	
More than $25,001	16	38.1	15	78.9	6	37.5	
How many kids do you have?							*0.821*
Zero	11	39.3	4	36.4	4	50.0	
One or More	17	60.7	7	63.6	4	50.0	
Plan to have (more) kids?							*0.727*
Yes	27	62.8	13	68.4	12	70.6	
No	16	37.2	6	31.6	5	29.4	

Note:

[*] p<.05.

Total Ns do not add due to missing data.