



## Communication with physicians and family about breast Cancer recurrence

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### ABSTRACT

**Objective:** Adequate physician-patient communication about cancer recurrence is vital to quality of life and to informed decision-making related to survivorship care. The current study was guided by a cognitive-affective framework to examine communication with family and physicians about breast cancer recurrence risk.

**Methods:** A survey of recently-diagnosed, early-stage breast cancer patients in Appalachia investigated physician-patient and familial communication about breast cancer recurrence risk.

**Results:** Over 30% of participants reported not talking to family or physicians about breast cancer recurrence risk. Younger patients reported more conversations, and speaking with physicians was associated with greater perception risk factors associated with recurrence risk. Greater worry about recurrence was associated with more communication with family and plans to talk to family, physicians, and friends about recurrence risk in the future.

**Conclusion:** Additional supports for patients and physicians are needed to improve understanding of breast cancer recurrence risk and risk factors for recurrence.

**Innovation:** Family communication about breast cancer recurrence risk is understudied. The combination of physician and family communication adds novelty to our analysis.

### 1. Introduction

In 2023, breast cancer will be the leading incident cancer and the second leading cause of cancer death in women [1], with over 300,000 cancer cases of invasive breast cancer and nearly 44,000 deaths, and the 10 year survival rate with breast cancer is approximately 85% [1]. Approximately 20–40% of women with early-stage breast cancer had a breast cancer recurrence (BCR) within 5–15 years in the United States (US) [2]. Recurrence is even more of a concern in underserved populations, where sub-optimal treatment and inadequate follow-up may lead to elevated mortality from the initial cancer and cancer recurrence [3,4]. Appalachia, one of the largest, disproportionately rural geographic regions in the US, includes over 26 million people, is medically-underserved, experiences significant cancer disparities, and exemplifies the adverse effects of rurality, poverty, and lower educational status on cancer-related outcomes [5]. A prominent cultural

characteristic of Appalachian individuals is the importance of family and caring for family members [6]. Because cancer occurs in a family context, communication about cancer within the family is important to understand, as it may ultimately be associated with quality and quantity of life [7–9].

We identified no studies of family communication about BCR risk, which may help cancer survivors make decisions about treatment, surveillance, end-of-life issues, and coping with the threat of recurrence. Cancer-related communication may include spouses/partners and other family members [7,9–11]. Although communication with the family about initial treatment is important, breast cancer patients also need to consider their BCR risk and engage in appropriate strategies to prevent and detect subsequent, early-stage cancer. Despite recommendations from the Society of Behavioral Medicine Communication Workshop [7], most studies of family communication are focused on high risk families due to hereditary cancers (e.g., [10–12]). Studies have explored how

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couples communicate and navigate the breast cancer experience [13,14], with some including couple communication about fear of BCR [15], yet larger family communication about cancer and cancer recurrence is relatively understudied.

In addition to family communication, physician-patient communication about cancer recurrence risk is important as individuals need this information to make decisions about treatment [16-18]. Historically, surveys of survivors reported that approximately 40% of patients undergoing adjuvant therapy reported never discussing their BCR with any of their physicians [17,19]. The Institute of Medicine and Commission on Cancer recommend that all cancer patients receive a Survivorship Care Plan to communicate individualized patient factors associated with recurrence risk and how recurrence risk can be managed [20,21]. However, BCR may be inadequately communicated with breast cancer survivors, such that survivors are unaware of (1) their recurrence risk, (2) factors that influence risk, and (3) health behaviors to decrease their risk [22-24]. Along with challenges of limited clinician time restricting communication, patients may not remember that risk information was being communicated (perhaps due to the trauma of diagnosis [25,26], chemotoxicity [27], or challenges with numeracy [28] or health disparities [29]). Adequate physician-patient communication about recurrence is vital to quality of life [30] and to informed decision-making about survivorship care [21,31,32].

Two key functions of communication are to gather information (cognition) and reduce anxiety (affect) [33-35]. Along with communication, cognitive-affective frameworks have been shown to be key predictors of a variety of behaviors [36,37]. Guided by a cognitive-affective framework, this study examined the role of cognitive and affective factors in communication between patient and family and physicians about BCR risk.

## 2. Methods

Study procedures were approved by Institutional Review Boards of participating universities. Medical records were reviewed to identify patients meeting eligibility criteria: women with a single diagnosis of early-stage breast cancer within the past 6 months, age 30–69, and treated at a participating breast oncology clinic in an Appalachian state ( $n = 2$ ), consistent with the parent study. Eligible individuals were approached as soon as possible after diagnosis by study staff with the assistance of participating physicians. After consenting, women completed a brief survey (Supplement) to understand their communication with family and physicians in a larger intervention trial. Demographics included age, education, ethnicity and race [38]. Cancer worry was assessed with the Cancer Worry Scale [39], modified to assess BCR worry [40]. Perceived BCR risk in the next 10 years as a percentage was assessed [41]. Perception of risk factors were assessed with our newly-developed 8-item scale, and a single item assessed subjective knowledge of risk. Individuals were asked if they had talked to family and to a physician/healthcare provider about their BCR risk and intentions for future communication with family, physicians, and friends [42,43]. Also, participants were asked the estimated number of communications about BCR and the initiator of communications [43]. Time to complete was approximately 20–30 min. A medical record review recorded type, stage, grade, ER/PR status, Her2Neu status and family cancer history. Individuals were compensated \$10 for survey completion.

### 2.1. Statistical analysis

A paired *t*-test compared whether patients talked more to family or physicians about their cancer risk. Using a model-building approach, six regression analyses explored correlates (demographics, clinical variables, perceived BCR risk, perception of risk factors, BCR worry) of whether participants had talked to their family and physician, the number of times they spoke for family and physician, and who initiated

the communication for family or physician. Three additional regression analyses using the same predictors examined future communication with family, physician, and friends. The SAS System for Windows was used for all analyses; two-sided alpha-levels of 0.05 were used for statistical tests.

## 3. Results

Sample characteristics are included in Table 1, evidencing that patients discussed BCR risk with physicians (69.2%) and family (62.1%). Patients talked more frequently to family than physicians ( $t(1,92) = 2.0, p < .05$ ). Table 2 includes regression analyses for communication with family and physician. Older participants were less likely to have talked with family about their BCR risk and talked fewer times to them than

**Table 1**  
Sample characteristics ( $n = 220$ ).

	Mean (SD) Percent		Mean (SD) Percent
<b>Age (in years)</b>	57.2 (12.1)	<b>Cancer Worry Scale</b> (mean scale: 1=not at all to 4=a lot)	1.8 (0.8)
<b>Race</b>		<b>Perception of Risk Factors</b> (mean scale: 1=not at all to 5=very much)	2.9 (1.3)
• White	95.3%	<b>Subjective Knowledge of Risk</b> (1= not at all to 5=very much)	3.5 (1.2)
• merican Indian	4.9%	<b>Perceived Risk in the next 10 yrs</b> (0-100%)	19.3 (24.4)
• African American	5.4%	<b>Ever Talked to Family</b>	
• sian	1.2%	• No	37.9%
• Pacific Islander	0.6%	• Yes	62.1%
<b>Ethnicity</b>		<b># of Times Talked to Family</b>	5.3 (13.4)
• Hispanic	2.1%	<b>Most Recent Time: Initiators of the Talk</b>	
<b>Education</b>		• Me	68.9%
• < High School	6.0%	• Family Member	22.4%
• High School/GED	25.4%	<b>Ever Talked to Physician</b>	
• Some College	35.5%	• No	30.8%
• Bachelor's Degree	18.6%	• Yes	69.2%
• Graduate School	14.5%	<b># of Times Talked to Physician</b>	2.5 (4.9)
<b>Type of Cancer</b>		<b>Most Recent Time: Initiators of the Talk</b>	
• DCIS	18.1%	• Me	47.6%
• Ductal	79.1%	• My physician	46.4%
• Lobular	9.3%	<b>Future Communication with Family</b>	
• Other	1.9%	• No	22.6%
<b>Stage of Cancer</b>		• Yes	77.4%
• 0	15.7%	<b>Future Communication with Physician</b>	
• 1	53.2%	• No	8.8%
• 2	31.1%	• Yes	91.2%
<b>Grade</b>		<b>Future Communication with Friends</b>	
• 1	20.0%	• No	25.2%
• `2	46.9%	• Yes	74.8%
• 3	13.1%		
<b>ER/PR Status</b>			
• ER+	78.9%		
• PR+	64.5%		
<b>Her2Neu Status</b>			
• 0	79.7%		
• 1+	20.3%		
<b>Family history of cancer</b>			
• No	23.6%		
• Yes	76.4%		
<b>Time Since Diagnosis (in days)</b>	64.0 (30.6)		

**Table 2**  
Family and physician communication.

Family communication (3 Regressions)					
	Ever talked to family (Ref = No) OR (95% CI)	Number of times talked to family β (95% CI)	Most recent time: who started the talk		
Age	0.6 (0.5–0.8) ***	–0.5 (–1.0 - -0.08) *	Not significant		
Cancer Worry Scale		0.7 (0.04–1.4) *			

  

PHYSICIAN COMMUNICATION (3 Regressions)					
	Ever talked to physician (Ref = No) OR (95% CI)	Number of times talked to physician β (95% CI)	Most recent time: who started the talk		
			My Physician	Other	Not talked
			(Ref = Me)		
			OR (95% CI)	OR (95% CI)	OR (95% CI)
Age	0.6 (0.5–0.9) **	–0.5 (–0.7 - -0.3) ***			
Perception of Risk Factors	1.4 (1.0–1.9) +				
Perceived Risk			0.8 (0.6–0.9) **	0.6 (0.1–2.6)	0.8 (0.7–1.0)
Subjective Knowledge of Risk			0.8 (0.5–1.2)	0.4 (0.08–2.5)	0.6 (0.4–0.9) *

  

FUTURE COMMUNICATION (3 Regressions)			
	Family (Ref = No) OR (95% CI)	Physician (Ref = No) OR (95% CI)	Friends (Ref = No) OR (95% CI)
Cancer Worry Score (CWS)	2.1 (1.3–3.6) **	4.9 (1.6–15.1) **	3.0 (1.7–5.2) ***

+  $p = .05$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

younger participants. Those with more BCR worry talked more to family about their BCR risk. Older participants were less likely to have talked to their physician about their BCR risk and talked fewer times than younger participants. Participants who had higher perceptions of risk factors were more likely to have talked to their physician. Those who initiated discussions about their BCR risk with their physicians reported higher perceived risk and subjective knowledge of risk. Finally, those with more cancer worry were more likely to plan to talk to family, physicians, and friends about their BCR risk in the future.

#### 4. Discussion and conclusion

##### 4.1. Discussion

This study explored BCR risk communication with family and physicians, with some (30.8%) reporting never speaking to a physician about recurrence risk, slightly lower than previous estimates [17,19]. Further, most (62.1%) had talked to their family and initiated a discussion about their BCR risk, which is lower than a previous study of melanoma cancer survivors with family members (70%) [44]; however, that study included individuals from a hereditary cancer registry who are typically encouraged to discuss cancer history and genetic test results. Lower reports notwithstanding, it is notable that most women reported speaking to their family about recurrence, which may reflect the close kinship ties noted in the Appalachian population [6]. Age was predictive of family and physician communication, such that younger women were more likely to talk and were talking more, perhaps due to an increased likelihood of hereditary cancer [45], additional need for support [46], or cohort effects such that younger women feel more comfortable asking questions of physicians [47]. Future research should explore the content of communications surrounding BCR risk [48].

For physician communication, having greater perception of risk factors was associated with greater physician communication, which may indicate greater learning with more discussion. Recent initiators of discussion were almost equally divided among patient and physician, indicating that both physicians and patients were engaging in

discussions about BCR. Patients who initiated discussions about recurrence risk with their physicians reported higher perceived risk and subjective knowledge of recurrence risk. There was a considerable range (0–100%) in perceptions of recurrence risk with the average perception falling at the low end of the 20–40% range [2] This may reflect challenges with numeracy or risk comprehension by patients in the study. Indeed, lower levels of education in Appalachia [49] may pose problems with the ability to comprehend risk information and utilize it to make decisions. Complicating matters, individuals who initiated discussions with their physician believed their knowledge of BCR risk to be high, but this was not reflected in their perception of risk factors. Thus, individuals may feel that they know their risk but not really understand the factors associated with this risk, or affect could be driving subjective knowledge [36,37]. Educational efforts may help to improve the understanding of risk factors and their role in BCR. Yet, desire for communication in the future with friends, family, and physicians was largely associated with worry. Thus, combining affect/worry management while providing objective information about BCR is needed.

##### 4.2. Limitations

Although the study was limited by small sample size, lack of adjustment for multiple testing, more high school completers than in Census data, few variables, no men, self-report data, and cross-sectional data, our study provides important insights into BCR risk communication.

##### 4.3. Innovation

Our study explored communication with family and physicians about BCR risk. Outside of studies of hereditary cancer, family communication about BCR risk has received little attention. Our combined analysis of communication with family and physicians provides novel data regarding BCR risk discussions.

#### 4.4. Conclusion

Patients are talking more with physicians about individual recurrence risk, and considerable communication is happening within families about BCR risk, especially among younger women. Additional supports for patients and physicians are needed to improve understanding of and to support informed decisions about managing BCR risk.

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#### Declaration of Competing Interest

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#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pecinn.2023.100237>.

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