

## Patient-centered communication during oncology follow-up visits for breast cancer survivors: content and temporal structure

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### **Abstract:**

**Purpose/Objectives:** To understand the content and temporal structure of survivor-provider communication during breast cancer survivor follow-up visits.

**Design:** Descriptive correlational.

**Setting:** Private outpatient oncology practice.

**Sample:** 55 breast cancer survivors; 6 oncology providers.

**Methods:** A secondary analysis of audio recordings of survivor follow-up visits.

**Main Research Variables: Survivors:** demographics, uncertainty, mood, length of survival, years receiving care from providers, survivor expectations. **Providers:** demographics, medical uncertainty, specialty (physician, nurse practitioner, or physician assistant). **Outcomes:** time spent in patient-centered communication, perception of patient-centeredness.

**Findings:** Most visit time (55%) was spent waiting. Of the remaining 45%, silence represented the most time spent with providers, followed by symptom conversations. More specific survivor discussion plans predicted more time spent discussing symptoms and in reassurance interactions. More specificity of visit purpose predicted survivor perceptions of less patient-centeredness; however, more time in contextual conversations predicted a greater perception of patient-centeredness. Provider factors were not associated with time spent in patient-centered communication or survivor perceptions of patient-centeredness. All dimensions of patient-centered communication occurred during each visit section (before, during, and after the physical examination).

**Conclusions:** Discussing symptoms and concerns with providers offers reassurance about cancer recurrence. When visit expectations are very high, achieving a survivor perception of patient-centered communication may be difficult. However, time spent understanding a survivor within the context of her life can enhance survivor perceptions of patient-centeredness.

**Implications for Nursing:** Providers must be sensitive to concerns that are presented throughout a visit. When visit time is short, a second appointment may be necessary to address survivor concerns.

### **Article:**

Many breast cancer survivors attend routine oncology-related medical office follow-up visits throughout survivorship (Clayton, Dudley, & Musters, 2008; Clayton, Mishel, & Belyea, 2006). Most of these survivors successfully adapt to survivorship and resume their daily lives without significant depression or anxiety (Ganz et al., 2002; Tomich & Helgeson, 2002; Wonghongkul, Dechaprom, Phumivichuvate, & Losawatkul, 2006). In addition, most women learn to live beyond cancer and some even report finding benefit (empowerment to make lifestyle changes, personal growth, improved family relationships) in the cancer experience (Gil et al., 2006; Lechner, Carver, Antoni, Weaver, & Phillips, 2006; Tomich & Helgeson, 2004).

Despite this successful adaptation to survivorship, virtually all breast cancer survivors have occasional thoughts about cancer recurrence and uncertainty about the future (Gil et al., 2004). These thoughts can be caused by unexplained physical symptoms, medical testing, and even attending a routine medical office visit (Gil et al.,

2004). Although office visits can trigger thoughts of recurrence and subsequent uncertainty, survivors report that the visits are a highly valuable way to obtain information and reassurance about cancer recurrence (Clayton et al., 2008; Thomas, Glynne-Jones, & Chait, 1997). Uncertainty theory suggests that communication with providers reduces survivor uncertainty by providing information (Mishel & Clayton, 2003). In addition, although follow-up visits are important to breast cancer survivors, little is known about the structure and content of appropriate survivor-provider interaction during routine follow-up visits.

## *Literature Review*

### *Conceptual Framework*

Patient-centeredness is a multifaceted concept reflecting a style of communication interaction that addresses patient needs and concerns as well as being a goal of healthcare delivery systems (Epstein et al., 2005). Each participant possesses unique attributes that can influence interactions (Epstein et al.; Epstein & Street, 2007; Feldman-Stewart, Brundage, & Tishelman, 2005). In addition, patient-centered communication is flexible and, therefore, able to address multiple patient concerns over the course of an office visit.

Dimensions of patient-centered communication, as proposed by Mead and Bower (2000), include exploration of illness and symptoms, including attempts to understand the illness experience; exploration of the whole person, or understanding the survivor within the context of family, work, and culture; and a mutual definition of the issue, including decision-making roles and the establishment of treatment goals. Feldman-Stewart et al. (2005) expanded upon Mead and Bower's framework, focusing on patient and provider goals as well as the actual communication process. The authors noted that silence, as well as verbal and nonverbal interactions, imparted meaning. The importance of environmental factors (e.g., patient and provider values; recent media events; contextual, social, and legal factors) on patient-provider communication also was acknowledged. Finally, Epstein et al. (2005) expanded on Mead and Bower's original framework, noting the importance of system factors, such as the physical environment and amount of waiting time.

### *Patient-Centered Communication With Breast Cancer Survivors*

Specific goals of patient-centered communication in oncology-related follow-up visits might be to address symptom concerns that are creating uncertainty and anxiety about cancer recurrence and to provide information about physical examinations and test results. Contextually focused patient-centered communication might address issues such as how financial constraints or family events are affecting a survivor's health. However, the importance of specific communication dimensions may be weighed differently by providers and patients (Ogden et al., 2002). For example, among breast cancer survivors, although conversations about symptoms had low patient-centered communication scores, conversations about symptoms were the strongest predictor of desirable survivor outcomes (reduced uncertainty and a positive perception of patient-centered communication) and, despite statistical analyses to the contrary, survivors thought their visits were highly patient-centered (Clayton et al., 2008). To address this paradox and improve understanding of complex events such as communication interactions, a mixture of qualitative and quantitative methods is recommended (Epstein et al., 2005).

### *Survivor Factors Influencing Patient-Centered Communication*

Although 89% of the 178,480 women diagnosed with invasive breast cancer in 2007 will survive five or more years after diagnosis (American Cancer Society [ACS], 2007a, 2007b), the majority will experience long-term side effects from their original breast cancer treatment (ACS, 2005, 2007a, 2007b). Symptoms related to the long-term side effects of treatment and symptoms from existing comorbid illnesses can create uncertainty (defined as the inability to assign meaning to illness events) about whether or not they represent cancer recurrence, as opposed to normal aging or another illness (Foley et al., 2006; Mishel, 1988).

Successful adaptation to cancer survivorship does not preclude the experience of episodic cognitive uncertainty and the associated anxiety and worry about the future associated with an oncology focused follow-up visit (Carver, Smith, Petronis, & Antoni, 2006; Foley et al., 2006; Gaudine, Sturge-Jacobs, & Kennedy, 2003). Uncertainty and the accompanying fear of cancer recurrence (or a second cancer diagnosis) is a well documented, albeit episodic, experience for breast cancer survivors (Carver et al., 2006; Gil et al., 2004; Mast, 1998; Nissen, Swenson, & Kind, 2002). The cyclical fluctuation of uncertainty in response to triggers, such as follow-up medical visits, also has been consistently documented (Ganz et al., 1996; Gil et al., 2004, 2006). This episodic uncertainty and associated emotional distress is valid, given that breast cancer recurrence can occur 10-15 years or more after initial treatment and the risk of new primary cancers remains elevated for life (Curtis, Ron, Hankey, & Hoover, 2006).

### *Provider Factors Influencing Patient-Centered Communication*

Provider factors (i.e., knowing the patient for a long time, medical uncertainty, and a patient-centered orientation) and demographic characteristics (i.e., length of time in practice, race, and gender) can affect patient-provider communication (Beach, Roter, Wang, Duggan, & Cooper, 2006; Cooper-Patrick et al., 1999; Epstein et al., 2005). Research findings exploring whether a gender concordance between survivors and providers influences patient-centered communication are mixed (Beach & Roter, 2000).

### *Health System Factors Influencing Patient-Centered Communication*

Health system factors include the amount of time available for each patient, length of the visit, available resources, and the environment (i.e., noise, space, and temperature) (Epstein et al., 2005). Investigating the influence of these factors on patient-provider communication, two national surveys evaluated patient perceptions of their medical care and patient-centeredness: The Consumer Assessment of Healthcare Providers and Systems suggested that patients feel providers do not spend enough time with them (Agency for Healthcare Research and Quality, 2005); and the Health Information National Trends Survey reported that many types of patients with cancer, including breast cancer survivors, feel their concerns are ignored or not listened to by providers (Hesse, 2003). The surveys jointly suggest that the concerns of breast cancer survivors are not being met, possibly as a result of timing constraints. This conclusion is important because, when patient concerns are not addressed or needs are not met, time spent in extra or subsequent visits may be longer and result in increased healthcare costs (Thorne, 1999; Thorne, Bultz, & Baile, 2005). However, despite patient complaints that providers do not spend enough time with them, the amount of time actually needed to effectively address concerns is unknown. No studies could be located that directly compared a cancer survivor's subjective sense of the adequacy of patient-provider communication with an objective measure of time spent in a follow-up visit.

### *Relationship Factors Influencing Patient-Centered Communication*

Many patients express a desire to be known as an individual by providers (Thorne, 1999). In addition, many patients receive care from the same provider for many years. Therefore, duration of the relationship between a provider and a patient is important when evaluating communication interactions (Epstein et al., 2005).

### Temporal Structure of Follow-Up Visits

The temporal organization of a medical office visit can influence a patient's perception of the amount of patient-centered communication. The logical progression of a medical office visit often is taught as if it followed a script.

\* The reason for the visit is discovered and the patient's health history is updated.

\* A physical examination is conducted.

\* The visit concludes with planning discussions about treatment, follow-up, and possible referrals to other providers.

In reality, the temporal structure and lines of demarcation between these sections often become blurred. For example, new symptoms and concerns are sometimes initiated in the closing moments of the visit. In other cases, patients may open a visit by requesting a referral to a specialty provider. One study of family practice patients ( $n = 88$ ) and their providers ( $n = 20$ ) found that 21% of new concerns were introduced in the closing moments of the visit (White, Levinson, & Roter, 1994). Therefore, a patient-centered style of communication requires provider responsiveness and flexibility (Epstein et al., 2005).

In summary, many factors can influence patient-centered communication and patient outcomes. Therefore, the purpose of this secondary analysis was to discover specific survivor issues and concerns discussed during survivor-provider interactions within the conceptual dimensions of patient-centered communication, to explore the amount of time spent in dimensions of patient-centered communication, and investigate placement of concerns within the structure of the visit. Patient, provider, health system, and relationship factors were evaluated for their association with time spent. Breast cancer survivors' perceptions of the patient-centeredness of their visits also were evaluated.

## *Methods*

### *Design*

This descriptive, secondary analysis re-examined 55 audio recordings from a previous study of interactions between breast cancer survivors and their providers (Clayton et al., 2008) for content and timing variables. Previously collected self-report measures were used in regression analyses to describe the sample. Appropriate institutional review board approvals were obtained for the parent study and again for the secondary analysis, although no new data were collected for the secondary analysis and subjects were not recontacted. SPSS[R] 15.0 was used for statistical analysis.

### *Sample*

Sixty breast cancer survivors two or more years after treatment, and six oncology providers initially were consented into the parent study from a private oncology practice in the southeastern United States. All usable audio recordings ( $N = 55$ ) and associated self-report data from the parent study were included.

### *Parent Study Self-Report Measures*

Patient and provider self-report measures were collected as part of the parent study. The following patient measures were collected immediately after the visit: mood state (Curran, Andrykowski, & Studts, 1995), uncertainty (Mishel, 1997), and survivor perception of patient-centeredness (Stewart et al., 2000). Provider medical uncertainty (Gerrity, White, DeVellis, & Dittus, 1995) was collected once (after providers were consented). Reliability (Cronbach alpha) of all instruments ranged from 0.82-0.97. Detailed reports of reliability and validity for self-report measures in this sample can be found in Clayton et al. (2008). Survivor expectations of the visit were collected but not analyzed in the parent study. Survivors were asked open-ended questions about concerns or topics they planned to discuss with their provider, if they had a plan for how they wanted to use their visit time, and the purpose of their visit. Free text answers were coded for level of specificity as either no expectations (defined as "none" or "no plan"), a general expectation (survivors wrote general statements such as "make sure I'm okay" or "get my cancer checkup"), or specific expectations (responses were focused, such as "I want to see when I can stop tamoxifen" or "I plan to discuss my left ankle pain").

## *Analyses*

Content analysis: Although the parent study (Clayton et al., 2008) analyzed audio recordings using a communication coding scheme to evaluate and compare average patient-centeredness scores, the current study subjected audio recordings to a thematic-based deductive content analysis (Waltz, Strickland, & Lenz, 2005) to discover specific topics that were discussed between breast cancer survivors and their oncology providers. Twenty-five independent and mutually exclusive content categories were derived from the empirical literature and investigator clinical experience prior to classification of the statements. A definition was written for each category. Each statement was compared with the definition to ensure accurate classification of the statements within each category (Waltz et al.). Using clustering, as described by Krippendorff (1980), statements were deductively abstracted into the theoretical dimensions of patient-centered communication suggested by Brown, Stewart, and Ryan (2001). The conceptual dimensions included exploring disease and illness, understanding the whole person, and finding common ground in management. Statements that did not fit into theoretical dimensions revealed conversations about office issues (i.e., cold examining rooms and lengthy waiting times). Epstein et al.'s (2005) theoretical identification of system factors was used to cluster statements about "waiting" and "office issues." Interactions involving instructions (undressing or redressing) were coded as procedural interactions. Finally, conversations related to a future cancer diagnosis defined as asking for or receiving reassurance were abstracted into a new cluster labeled reassurance.

All content data were entered into an SPSS dataset. Every sentence of each audio recording was coded by a research assistant and then checked by the principal investigator for coding accuracy. Data consisted of appropriate content codes (as described earlier) entered sequentially for each individually numbered audio recording. An excerpt from each comment was included for additional verification of content coding. For example, if a new pain was mentioned, this was coded specifically as "symptoms: current" (as opposed to "symptoms: history"), and more broadly as "exploration of illness" (instead of "context" or "planning comments"). The content verification statement might read "new pain in left shoulder for the past week," entered into a free text field. Start and stop times (in seconds) for each statement were entered using the digital time stamps on the recordings.

Because many fields were free text, the SPSS dataset were inspected and corrected for typographical coding errors (for example "symptom" versus "symptoms"), misspellings ("symptom" versus "smptom"), and alternate wording ("symptoms: medication" instead of "medication: symptoms"). Time spent in each of the 25 categories was examined for outliers or miscoding of time data entries. Standardized DfBetas were examined to detect cases with undue influence on regression co-efficients (Tabachnick & Fidell, 2001). One case strongly influenced the data as a result of a very long visit (over three hours) involving numerous survivor-initiated disagreements about medications. This case was deleted from the time analyses since it was not representative of the other 54 survivor-provider interactions.

Time analysis: Using the existing digital time stamps, audio recordings were coded for time spent (in seconds) within each communication category as well as for total visit length. This allowed the authors to compute and compare the percentage of time spent across each sub-category and within the broader conceptual categories of communication for the entire visit. Not every visit contained all 25 communication categories, demonstrating the uniqueness of survivor visits. For regression analyses, waiting time was excluded because the focus of this study was on time spent in patient-centered communication. Waiting was defined as the survivor being alone in the examining room. After excluding waiting time, the percent of nonwaiting time for each survivor within each communication category and each collapsed theoretical cluster was computed. Finally, percent time spent in differing types of communication interactions was stratified into three segments: before the physical examination, during the physical examination, and after the physical examination.



Correlations were performed to assess relationships between variables. Multiple linear regression analyses were used to examine the association between a set of predictors and percent time spent in four theoretical clusters: exploring disease and illness, understanding the whole person, finding common ground in management (called planning), and reassurance. The selection of predictors was guided by Epstein et al.'s (2005) framework of patient, provider, relationship, and health system factors that are thought to influence patient-centered communication. Variables were grouped for stepwise entry into the models with listwise deletion of missing data. Outcomes included time spent within conceptual clusters of patient-centered communication and survivors' perceptions of the patient-centeredness of the follow-up office visit. Silence was included when calculating time spent because silence is known to impart meaning (Feldman-Stewart et al., 2005). Silence occurred when providers were reading charts, performing physical examinations, and writing notes or prescriptions.

## Results

Complete demographic data on survivors and providers can be found in Tables 1 and 2. A total of 1,383 statements were evaluated and coded into 25 independent and mutually exclusive content categories (see Table 3). These statements were then clustered (collapsed) into the theoretical dimensions of patient-centered communication. The largest amount of total visit time was spent waiting. Waiting, defined as a survivor being alone in the examination room, took up 55% of the average total visit time. Most waiting time occurred immediately before and after the physical examination, reflecting undressing and redressing. Another period of waiting occurred just before the end of the visit as providers left the room to write prescriptions or schedule future appointments and tests. No association was found between waiting time and patient factors. Waiting was, therefore, excluded from subsequent analyses, leaving the remaining 45% of the visit as the basis for each category or cluster. Because the information is presented as percent times and not all patients spent time in all 25 topical categories, percentages do not always add up to 100.

Table 1. Breast Cancer Survivor Characteristics

Characteristic	[bar.X]	SD	Range
Age (years)	62	11.4	31-87
Education (years) (N = 53)	13.3	2.5	7-19
Years of survival	6.1	3.4	2-17
Years treated by practice	5.5	3.1	2-13
Characteristic		n	%
Ethnicity			
White		41	75
Nonwhite		14	25
Education (N = 53)			
High school		28	51
Some college		13	24
College graduate		12	22
Treatment			
Chemotherapy		1	2
Surgery		5	9
Surgery and chemotherapy		17	31
Surgery and radiation		9	16

Surgery, chemotherapy, and radiation	23	42
Marital status		
Partnered (companion or spouse)	33	60
Without partner	22	40
Employment status		
Retired	30	55
Unemployed	12	22
Employed full- or part-time	13	24
Income per month (\$) (N = 53)		
Less than 1,000	9	17
1,001-4,000	32	58
More than 4,000	12	22

N = 55, unless otherwise noted.

Note. Percentages may not equal 100 because of rounding or no response from a participant.

Table 2. Provider Characteristics

Provider	n
Gender	
Male	2
Female	4
Ethnicity	
White	5
Black	1
Years in practice	
Less than five	4
More than five	2

N = 6

Table 3. Content Categories Recoded Into Theoretical Clusters of Patient-Centered Communication, Visits That Included a Category, and Average Percent Time Spent Within a Category

Content Category	Theoretical Clusters (Dimensions)	Visits, Including Category	[bar.X] Time Spent in Category (%)
Symptoms: medication	Exploring disease and illness	25	2.42
Symptoms: history	Exploring disease and illness	40	4.43
Symptoms: current	Exploring disease and illness	55	12.1
Asking questions	Exploring disease and	21	4.59

	illness		
Giving results	Exploring disease and illness	43	3.12
Giving information	Exploring disease and illness	20	3.03
Planning: treatment	Finding common ground in management	13	1.91
Planning: referral	Finding common ground in management	6	3.75
Planning: other physicians	Finding common ground in management	20	1.37
Planning: next appointment	Finding common ground in management	35	1.67
Planning: medicines	Finding common ground in management	13	2.82
Planning: laboratory tests	Finding common ground in management	23	5.8
Office issues	Health system factors	13	1.83
Waiting	Health system factors	-	-
Instructions	Procedural interactions	34	2.46
Offering reassurance	Reassurance	14	1.58
Giving reassurance	Reassurance	1	0.53
Seeking reassurance	Reassurance	9	2.35
Silence	Silence	55	61.7
Context: social	Understanding the whole person	3	3.23
Context: lifestyle	Understanding the whole person	3	6.17
Context: insurance	Understanding the whole person	1	0.53
Context: family	Understanding the whole person	26	4.96
Context: employment	Understanding the whole person	12	4.23
Small talk	Understanding the whole person	42	3.5



Relationship building	Understanding the whole person	48	2.28
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Note. Because N varies across content categories (not every subject had comments in each category), the mean percentages do not sum to 100%.

## Illness and Symptom Conversations

Exploration of illness and symptom events consumed an average of 9% of time spent in survivor-provider communication interactions. Survivors discussed many symptoms with their oncology providers, as well as results of recent tests (e.g., blood glucose results, joint pain, back pain, hair loss, weight gain). More exploration of illness was associated with survivors' plans for discussion topics and how they used visit time (see Table 4).

Table 4. Correlation Matrix of Percentage of Time Spent by Patient and Provider Factors

Factor	Planning	Exploring Illness	Understanding Whole Person
Survivors			
Years of survival	0.123	0.161	0.172
Survivor age	-0.075	-0.1	-0.196
Length of time coming to practice	0.203	0.191	0.215
Purpose of visit	-0.049	0.255	-0.184
Plan for use of time	0.205	0.284 *	0.132
Plan for discussion topics	0.164	0.36 **	0.105

### Providers

Provider clinical uncertainty	0.285 *	0.055	0.125
Gender	0.162	0.054	0.232

Factor	Reassurance	Patient Perception of Patient-Centeredness
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### Survivors

Years of survival	-0.024	-0.027
Survivor age	0.27	0.09
Length of time coming to practice	-0.039	0.051
Purpose of visit	-0.213	-0.288 *
Plan for use of time	-0.022	-0.209
Plan for discussion topics	0.44 *	-0.158

### Providers

Provider clinical uncertainty	-0.019	-0.23
Gender	0.067	0.197

\* p = 0.05 level (two-tailed); \*\* p = 0.01 level (two-tailed)

The results of regression analyses evaluating potential predictors of patient-centered communication showed

moderately strong models with an adjusted [R.sup.2] ranging from 0.089-0.469 (see Table 5). Each model is presented separately. In Model 1, exploring illness events is the outcome variable. A more specific survivor plan for discussion predicted more time spent in survivor-provider communication exploring illness-related topics. Following the model, the regression coefficient of 0.028 indicated that, for every one point increase in discussion plan specificity, the percent of time spent exploring illness events increased by 2.8%. With this single predictor, the adjusted [R.sup.2] was 0.114 (therefore, the first predictor explained about 11% of the variance;  $p = 0.014$ ). The authors chose to report the adjusted [R.sup.2] because the analyses were conducted on a relatively small sample and the adjusted [R.sup.2] provides a more conservative estimate of the proportion of variance. In step 2, partner (spouse or companion) status entered the model and the adjusted [R.sup.2] increased to 0.153. This increase was not statistically significant ( $p = 0.093$ ), but the overall model remained significant ( $p = 0.012$ ). Survivors with partners spent more time exploring illness events than survivors without partners. The stepwise process ceased at this point because no additional predictors emerged.

Table 5. Stepwise Regression Models of Predictors of Dimensions of Patient-Centered Communication

Variable	B	SEB	[beta]	Adjusted [R.sup.2]	p for Change in [R.sup.2] (for Model)
Model 1: Exploring illness events					
* Step 1				0.114	0.014 (0.014)
- Discussion plan specificity	0.028 **	0.011	0.366		
* Step 2				0.153	0.093 (0.012)
- Discussion plan specificity	0.03 **	0.011	0.389		
- Partnered	-0.032	0.018	-0.243		
* Step 1				0.089	0.029 (0.029)
Model 2: Understanding the whole person					
- POMS tension	0.002 *	0.001	0.332		
Model 3: Finding common ground in management (planning)					
* Step 1				0.249	0.001 (0.001)
- Total visit length (minus waiting)	-0.001 **	-	-0.519		
Model 4: Reassurance					
* Step 1				0.185	0.043 (0.043)
- Discussion plan	0.013 *	0.006	0.482		

specificity					
* Step 2				0.322	0.058 (0.021)
- Discussion plan specificity	0.013 *	0.005	0.491		
- POMS confusion	0.003 *	0.001	0.411		
* Step 3				0.469	0.039 (0.008)
- Discussion plan specificity	0.013 *	0.005	0.492		
- POMS confusion	0.004 **	0.001	0.621		
- POMS anger	-0.002 *	0.001	-0.453		
Model 5: Survivor perception of patient-centeredness					
* Step 1				0.166	0.006 (0.006)
- POMS confusion	0.057 **	0.02	0.433		
* Step 2				0.271	0.017 (0.001)
- POMS confusion	0.053 **	0.018	0.402		
- Specificity of visit purpose	-0.522 *	0.208	-0.35		
* Step 3				0.31	0.090 (0.001)
- POMS confusion	0.063	0.019	0.48		
- Specificity of visit purpose	-0.386	0.217	-0.258		
- Specificity of plan for visit time	-0.17	0.097	-0.261		
* Step 4				0.402	0.016 (-)
- POMS confusion	0.062 **	0.017	0.47		
- Specificity of visit purpose	-0.227	0.211	-0.152		
- Specificity of plan for visit time	-0.231 *	0.094	-0.356		
- Time spent in understanding the whole person	4.701 *	1.857	0.34		
* Step 5				0.441	0.076 (-)
- POMS confusion	0.061 **	0.017	0.464		

- Specificity of visit purpose	-0.212	0.204	-0.142
- Specificity of plan for visit time	-0.201 *	0.092	-0.311
- Time spent in understanding the whole person	5.371 **	1.833	0.388
- Time spent in planning	-6.292	3.439	-0.233

\* p = 0.05; \*\* p = 0.01

POMS--Profile of Mood States; SEB--standard error B

Note. Variables entered into the models were (a) patient and relationship factors: length of survival, age, race, partnered, education, length of time coming to practice, uncertainty, and POMS depression, vigor, anger, fatigue, confusion, and tension scales (specificity of visit, purpose of visit, specificity of plan for using time, and specificity of plan for discussion also are included); (b) provider factors: clinical uncertainty, provider gender, provider type (physician or nonphysician); and (c) system factors: total visit length (excluding waiting time).

The regression coefficients are small because the units of measure in the outcome variable are percentages. The other regression models can be interpreted similarly.

### *Understanding the Survivor in Context*

Time spent in conversations about understanding the patient in context made up 4% of an average visit. Statements associated with these interactions included conversations about past or future vacation plans. Other interactions were more personal, such as discussions about the arrival of a grandchild, asking about a survivor's adult children, or about an employment situation. One woman mentioned insurance concerns. Again, not every visit contained every specific category. Providers often were familiar with the existing "troubles" of spouses and children and how the survivor was influenced by these factors. The survivors also were knowledgeable about the lives of their providers, asking about events such as weight loss. The only variable associated with time spent in survivor-focused contextual conversations was a survivor's self-reported amount of tension (as measured by the Profile of Mood States [POMS] tension subscale). More tension predicted more time spent in contextual communication.

### *Planning Conversations*

Communication interactions about treatment goals and options were collectively referred to as planning statements. Planning made up 2% of an average visit. Planning interactions involved scheduling the next office appointment, making referrals to other providers, and scheduling mammograms, x-rays, and laboratory tests.

Other planning interactions involved how long a survivor should remain on a specific medication, prescription of new medications, and creating a surveillance plan for current symptoms. In addition, many survivors kept their providers abreast of other appointments, such as with a cardiologist. Bivariate correlation analyses indicated that time spent in planning was weakly correlated with provider clinical uncertainty. Providers who

reported more clinical uncertainty also spent slightly more time in planning conversations; however, provider uncertainty did not attain significance in regression models.

### *Reassurance Conversations*

Reassurance interactions accounted for 2% of an average visit. Comments all revolved around the probability of a breast cancer reoccurring. Many of the statements were imbedded in symptom discussions, with survivors wanting to know if they were "okay." Some reassurance interactions were more direct. For example, one woman asked whether the cyst on her finger indicated that her "cancer had come back." Other reassurance interactions were related to length of survival.

Many survivors discussed the chances of their cancer returning after the "five-year mark." One survivor asked what her chances of a recurrence were after 17 years of being cancer-free. More time spent in reassurance interactions was associated with the specificity of a survivor's initial plans for discussion. Regression analyses indicated that more survivor confusion, greater specificity of the discussion plan, and less anger were associated with more time spent in conversations about reassurance.

### *Survivor Perception of Patient-Centeredness*

Relationships between time spent in the dimensions of patient-centered communication and a survivor's perception of the amount of patient-centeredness of the visit showed that greater self-reported confusion (measured by the POMS confusion subscale) and more time spent in contextual discussions predicted a survivor perception of more patient-centeredness. In contrast, less specificity of a survivor's initial plan for using her visit time, a less specific visit purpose, and less time spent planning predicted a survivor perception of greater patient-centeredness.

### *Temporal Sequence*

The temporal sequence of conceptual clusters was examined with respect to events that occurred before, during, or after the physical examination. Conversations representing all conceptual clusters occurred in all segments of the visit rather than in a preconceived order (see Figure 1).

### *Discussion*

The integration of qualitative and quantitative methods is useful when addressing complex communication interactions and aids in the interpretation of results (Epstein et al., 2005; Thorne, 1999). Because audio recordings represent survivor visits in a naturalistic setting, the use of qualitative methodology captures what survivors discussed with providers, contributing to improved understanding of the needs and concerns important to a growing population of breast cancer survivors.

Quantitative self-report measures reveal how survivor and provider characteristics influence time spent in the dimensions of patient-centered communication. Investigating specifically when types of interactions occur during follow-up visits illustrates the need for flexibility when adopting a patient-centered approach to communication. Finally, the inclusion of nurse practitioners and physician assistants evaluated differences in interaction resulting from provider type (Druss, Marcus, Olfson, Tanielian, & Pincus, 2003).

Breast cancer survivors bring a multitude of personal factors to patient-provider communication interactions. However, no single patient factor predicted time spent in all dimensions of patient-centered communication, suggesting that these theoretical dimensions are distinct, with different factors influencing different portions of the overall communication interaction. Most demographic characteristics of survivors were not influential in predicting time spent in either patient-centered communication or survivors' perceptions of the visit. However, survivors' levels of anger, confusion, and tension (emotional status), as well as preformed expectations of the

visit, were associated with the amount of time spent in dimensions of patient-centered communication and survivors' perceptions of patient-centered communication.

Time spent in the conceptual dimension of understanding the whole person (patient-focused contextual conversations) was influential in facilitating a survivor perception of patient-centered communication. Although a comparatively small amount of visit time was spent in these interactions, comments indicated consistent and ongoing familiarity between providers and survivors, possibly reflecting the need to be "known" by providers. The need to be known is a pervasive theme among patients with cancer (Thorne, Kuo, et al., 2005) and survivors. Supporting the finding that time spent in patient-focused conversations enhances a perception of patient-centeredness is the corresponding finding that when more time is spent planning, a lesser perception of patient-centeredness is found. The findings illustrate that not all conceptual dimensions may be equally important to breast cancer survivors, particularly when visit time is limited. In the current study, time spent in conversations that reflect survivors' being known as a unique individual by their providers appears to be more important in facilitating a positive perception of the overall visit than increased time spent planning for future medical care and surveillance.

Meeting survivor expectations influenced the amount of time spent in specific dimensions of patient-centered communication as well as survivors' perception of the visit after the visit has ended. Breast cancer survivorship studies of follow-up care have demonstrated that survivors seek emotional support and information from providers (Rutgers, 2004). Research also suggests that ambulatory patients with cancer have high expectations of providers' professional and personal skills (Sapir et al., 2000). When survivors have very high expectations, it may be difficult for even the most skilled providers to meet these expectations (Beach & Roter, 2000). In the current study, more specificity of a survivor's initial plan for discussions with the provider was associated with more time spent in illness exploration and in reassurance, as was expected. However, a more specific visit purpose and predetermined plan for using visit time were associated with a perception of less patient-centeredness, indicating that survivor expectations had not been met.

The examination of provider and relationship factors moves the study of patient-provider communication beyond a "deficiency model," the suggestion that providers are lacking in certain attributes (and the corresponding assumption that these deficiencies should be corrected), to an improved understanding of how provider characteristics influence communication interactions (Epstein et al., 2005). In the current study, provider factors had no influence on time spent in dimensions of patient-centered communication or on a survivor's perception of the visit. The findings add to the mixed literature regarding the importance of concordance between survivors and their providers (Beach & Roter, 2000; Roter & Hall, 2004; Schmid Mast, Hall, & Roter, 2007). In contrast, providers who reported more clinical uncertainty spent more time on average in planning conversations, likely to the detriment of a survivor's perception of patient-centeredness, as previously mentioned, because less time was devoted to understanding the survivor in context.

Unexpectedly, length of survival did not influence time spent in any dimension of patient-centered communication. Length of survival originally was included in all regression models because many studies suggested that long-term survivors have different concerns and visit goals than survivors closer to diagnosis (Cameron & Horsburgh, 1998; Cassileth, Zupkis, Sutton-Smith, & March, 1980; Turk-Charles, Meyerowitz, & Gatz, 1997). The authors believed that these different goals and concerns would be reflected in the time spent in the dimensions of patient-centered communication. However, on reflection, the lack of influence of length of survival on time spent in specific patient-centered communication dimensions may illustrate the flexibility of patient-centered interactions. Although different concerns may have been discussed by survivors with varying time since original diagnosis, the global dimensions of patient-centered communication remain relevant to all breast cancer survivors. For example, specific symptoms may change over time; however, understanding existing symptoms remains important to all breast cancer survivors. Similarly, although life events may change over time, being able to relate them to providers continues to be important to survivors.

Finally, instead of assuming a temporal visit structure during the visit, providers should be aware that dimensions of patient-centered communication are intermingled throughout the visit. Therefore, to achieve patient-centered communication interactions, flexibility of providers is required to adapt to the variable timing of interactions, as well as meet current needs and expectations of breast cancer survivors.

### *Limitations*

Limitations of this research concern the smaller sample size and, therefore, the generalizability of results. In addition, the sample size is associated with the number of analyzed statements in that not every statement category is found in every visit, limiting the sampling units available for regression analyses. This study collapsed providers into MD and non-MD because only six (100% of employed) providers were videotaped.

Greater numbers of providers would allow for more sophisticated statistical techniques (such as nesting for provider specialty) in future research. Finally, this study was conducted solely among breast cancer survivors. Whether the findings would pertain to survivors of other types of cancer is unknown.

### *Implications for Nursing*

In the current healthcare environment, ambulatory care providers are charged with managing an efficient and productive practice while delivering care in a manner that enhances patient satisfaction and provides for optimal outcomes. The competing nature of the demands on practitioners is a repetitive theme throughout the literature (Reschovsky, Hadley, & Landon, 2006; Snyder & Neubauer, 2007; Walker, 2000; Wilensky, 2004). Some breast cancer survivors have expressed a desire for a longer visit length. However, although providers are aware of survivor complaints relating to time spent with them, meeting survivors' needs by increasing the actual visit time may not be practical for providers working in organizations that have explicit productivity requirements. Instead, greater flexibility for meeting concerns occurring throughout the visit and asking what concerns are most important to survivors by eliciting expectations at the beginning of the visit might facilitate better use of available time. For example, providers should be aware of a survivor's emotional status and expectations to ensure a perception of patient-centeredness. This might be accomplished by simply asking about a survivor's goals for the visit and asking if anything in particular is causing confusion or anxiety at the beginning of the office visit. Providers also could make a point of asking how survivors (particularly survivors new to the practice) are managing in their day-to-day lives and if any issues are significantly affecting well-being. Remembering that being known is highly important to survivors, providers could budget time to meet this need, even scheduling a second appointment, if possible, for testing and planning.

Understanding how survivors and providers interact, as well as how system constraints, such as time, are associated with communication, helps to identify areas for potential interventions that will address the multiple needs of breast cancer survivors. For example, breast cancer survivors could be offered care that meets their needs (i.e., patient-centered), but in a more comprehensive manner that uses other professional and community resources (Druss et al., 2003). Research suggests that many oncology nurses remain unaware of existing community oncology resources, despite a clear desire on their part to advocate for their patients (Gosselin-Acomb, Schneider, Clough, & Veenstra, 2007). Increased knowledge of community resources would allow for better use of these resources, alleviating the need for oncology providers to spend large amounts of time with survivors while continuing to meet the needs of a growing population of breast cancer survivors who request follow-up care and surveillance well into survivorship.

This study found that the largest amount of time spent on average was in conversations about illness-related events, reflecting the importance of these discussions to survivors and providers. Conversations included current and previous symptoms. When symptoms were not understood by survivors, conversations often reflected uncertainty about the possibility of cancer recurrence. Although not influential in this smaller sample,



focusing on this dimension of patient-centered communication might more completely address survivor concerns and enhance survivors' perceptions of patient-centered communication without requiring an increase in time spent with providers.

In summary, patient-centered communication is a complex event influenced by many factors. In addition, the dimensions of patient-centered communication are not equally weighted as important by survivors, nor are they consistently influenced by survivor or provider factors. This study demonstrates the influence of preformed expectations and individualized factors, such as anger and confusion, on survivor perceptions of patient-centeredness. Finally, achieving patient-centered communication requires flexibility in terms of adjusting to the specific content of the visit as well as in temporal sequencing of conversations.

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