Breast-Cancer Patients’ Participation Behavior and Coping During Presurgical Consultations: A Pilot Study

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Published online: 14 Aug 2014.

To cite this article: Maria K. Venetis, Jeffrey D. Robinson & Thomas Kearney (2014): Breast-Cancer Patients’ Participation Behavior and Coping During Presurgical Consultations: A Pilot Study, Health Communication, DOI: 10.1080/10410236.2014.943633

To link to this article: http://dx.doi.org/10.1080/10410236.2014.943633

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In the context of breast-cancer care, there is extremely little research on the association between observed (i.e., taped and coded) communication behaviors and patients’ health outcomes, especially those other than satisfaction. In the context of presurgical consultations between female breast cancer patients and a surgeon, the aim of this exploratory study was to test the association between communication-based participation behaviors and pre–post consultation changes in aspects of patients’ mental adjustment to cancer (i.e., coping). Participants included 51 women newly diagnosed with breast cancer and a surgical oncologist from a National Cancer Institute (NCI)-designated cancer center in the northeastern United States. Outcomes were changes in patients’ fighting spirit, helplessness/hopelessness, anxious preoccupation, cognitive avoidance, and fatalism (measured immediately before and after consultations via survey), and the main predictors were three communication-based participation behaviors coded from videotapes of consultations: patient question asking, patient assertion of treatment preferences, and surgeon solicitation of patient question/concern/opinion. Patients who more frequently asserted their treatment preferences experienced increases in their fighting spirit ($p = .01$) and decreases in their anxious preoccupation ($p = .02$). When companions (e.g., sister, spouse) asked more questions, patients experienced decreases in their anxious preoccupation ($p = .05$). These findings suggest that, in the present context, there may be specific, trainable communication behaviors, such as patients asserting their treatment preferences and companions asking questions, that may improve patients’ psychosocial health outcomes.

Cancer diagnoses, especially those of the breast, are associated with high levels of psychosocial distress (Butow et al., 1996), which lead to myriad negative health outcomes (Hewitt, Herdman, & Holland, 2004). Immediately after women are diagnosed with breast cancer, one of their first next contacts with the medical profession is with a surgeon to discuss the nature of the cancer and a (surgical) treatment plan (American Cancer Society [ACS], 2011). In the context of these consultations, the present pilot study examines the association between observed (i.e., taped and coded) communication-based participation behaviors (Street & Millay, 2001) and pre–post consultation changes in patients’ mental adjustment to cancer (i.e., cancer coping).
PATIENTS’ MENTAL ADJUSTMENT TO CANCER

Patients’ mental adjustment to cancer involves both adaptive and maladaptive cognitive and behavioral responses that patients make to cancer diagnoses (Watson et al., 1988), such as the adaptive coping style of fighting spirit and the maladaptive style of helplessness/hopelessness. Increases in adaptive coping and decreases in maladaptive coping matter for cancer patients’ psychosocial health. For example, among breast-cancer patients, increases in fighting spirit have been associated with decreases in anxiety/depression (Watson et al., 1991) and emotional/psychological distress (Ferrero, Barreto, & Toledo, 1994), and increases in energy and mental health (Anagnostopulos, Kokokotroni, Spanea, & Chryssochou, 2006), regimen adherence (Ayres et al., 1994), quality of life (Schnoll, Harlow, Stolbach, & Brandt, 1998), and medical-care satisfaction (Ferrero et al., 1994). Alternatively, maladaptive coping is associated with decreases in cancer patients’ quality of life and increases in their anxiety and depression (Watson et al., 1991). Maladaptive coping is also associated with decreases in patients’ life satisfaction (Herbert, Zdaniuk, Schulz, & Scheier, 2009) and increases in patients’ sexual problems (Ferrero et al., 1994) and cancer-related worries concerning physical, emotional, and relational problems (Grassi et al., 2004). The negative psychosocial effects of being diagnosed with breast cancer, including maladaptive coping, can hamper women’s abilities to effectively process medical information and make appropriate treatment decisions (Sheehan, Sherman, Lam, & Boyages, 2007).

COMMUNICATION AND PSYCHOSOCIAL HEALTH OUTCOMES

One fundamental component of quality medical care, especially cancer care, is patient-centered communication (Bensing, 2000; Institute of Medicine, 1999). Although there are numerous operationalizations of patient-centered communication, it is most frequently measured in terms of communication-based participation behaviors (e.g., Bensing, 2000; Street & Millay, 2001), which are mechanisms through which patients actively participate in their care and through which providers facilitate patients’ active participation. In various health care contexts, research has found participation behaviors to be associated with improved psychosocial health outcomes such as reductions in anxiety and improvements in emotional health (e.g., Stewart et al., 2000; Venetis, Robinson, Turkiewicz, & Allen, 2009).

The present exploratory study responds to the National Academy of Sciences Institute of Medicine’s report on ensuring quality cancer care (Institute of Medicine, 1999), which called for studies of the “reality” of breast-cancer care. This call stems largely from the fact that patients’ reports of communication behaviors are rarely significantly correlated with their actual occurrences (Street, 1992) and the fact that there is virtually no research involving the relationship between observed (i.e., taped and coded) communication variables and breast-cancer patients’ health outcomes, especially those other than satisfaction (Venetis et al., 2009). This pilot study examines the relationship between taped and coded participation behavior and pre–post consultation changes in patients’ cancer coping.

METHOD

This study was approved by all relevant institutional review boards. Data were collected in a National Cancer Institute-designated Comprehensive Cancer Center located in the northeastern United States. As an exploratory study, in order to promote contextually rich explanations that have increased ecological validity, this study focused exclusively on one specific cancer-care context, that of a newly diagnosed woman with breast cancer consulting with a surgeon to discuss the nature of the cancer and a surgical treatment plan. During the period of data collection (April–December 2009), 95% of all breast surgeries (and thus of all presurgical consultations) were conducted by a single, male, surgical oncologist, who participated in the current study. All eligible patients—that is, newly diagnosed women with breast cancer, who had been informed of their diagnosis (commonly within the last 2 weeks), who were fluent in English—were recruited as they became available, and 74/88 agreed (84%). Of consenting patients, one dropped out, one was not videotaped due to camera failure, and 21 did not complete either the pre- or postvisit survey, resulting in 51 complete data sets (i.e., pre- and postvisit survey and videotaped visit). Of the 51 patients analyzed, 39 (76%) brought one to three companions, all of whom consented to participate (100%). Patients who provided informed consent filled out a previsit survey (12 minutes), had their consultation videotaped with a small, battery-operated, ceiling-mounted, digital camera (research staff were not present), filled out a postvisit survey (12 minutes), and were finally paid $20 for their participation. The surgeon was not paid.

The focal independent variables included three communication-based participation behaviors identified by Venetis (2010). Coding was guided by Street’s interaction coding schema (Street & Millay, 2001) and conducted by three undergraduates who were blinded to the purposes of this study and who were trained on separate materials. Coders’ unit of analysis was the “utterance” (Stiles, 1992). Coders’ interrater reliability for all communication behaviors was acceptable (Scott’s pi = .77) (Lombard, 2010). The first participation behavior was patient question asking, which included attempts to seek information about medical-related topics (e.g., “What about the HER-2 receptor?”). This behavior occurred in 49 visits (96%; M = 12.22, SD = 8.43, range 1–34). The second participation behavior was...
patient assertion of treatment preference, which included patients’ self-initiated assertions of treatment-related preferences or opinions (e.g., “I’m totally against expanders and my own tissue”). This behavior occurred in 28 visits (55%; $M = 1.25, SD = 1.44$, range 1–5). The third participation behavior was surgeon solicitation of participation (hereafter, surgeon solicitation), which included surgeons explicitly soliciting patients’ questions, understanding, concerns, or opinions (e.g., “So what questions can I answer for you?”). This behavior occurred in 45 visits (88%; $M = 1.64, SD = 1.05$, range 1–5). Additionally, as a covariate (see later description), coders identified the variable companion question asking (e.g., patients’ spouse, sister). This behavior occurred in 35 visits (69%; $M = 5.18, SD = 6.09$, range 1–20).

The dependent variables were five aspects of patients’ mental adjustment to cancer (i.e., cancer coping), which were measured in both the pre- and postvisit survey with the Mini-Mental Adjustment to Cancer Scale (Watson et al., 1994). All subvariables were measured with 6-point, Likert-type items with responses ranging from 1 (does not apply to me) to 6 (very strongly applies to me). Because coping is rarely measured immediately before and after consultations, all coping subvariables were subjected to confirmatory factor analyses (Tabachnick & Fidell, 2007; see Venetis, 2010, for final solutions). The factor structure of the previsit variable was maintained for the corresponding postvisit variable (Wright, 2003). Dependent variables were change scores (for appropriateness, see Vickers & Altman, 2001), which were derived by subtracting postvisit scores from previsit scores (see Allison, 1999). As such, negative change scores (i.e., negative $t$-scores in regression models) indicate pre–post consultation increases in related coping variables (Table 1).

The present study measured seven potential covariates (which were subsequently screened for inclusion in regression models; see later discussion), including (a) companion question asking (described earlier); (b) patient age in years ($M = 53.88, SD = 11.35$); (c) patients’ educational attainment dichotomized as less than BA (43%), or BA or greater (57%); (d) patients’ household income dichotomized using the region’s median household income of $\leq$75,000 (46%), or greater (54%); (e) patients’ race/ethnicity dichotomized as non-Hispanic White (80%), or other (20%); (f) patients’ marital status dichotomized as currently married (63%), or not (37%); and (g) patients’ frequency of religious-service attendance, which prior research has found to be positively associated with cancer coping (Bowie, Sydnor, Granot, & Pargament, 2005). Frequency of religious attendance was measured with a widely used, single-item measure, “Prior to your cancer diagnosis, how often did you attend religious services?” (Idler et al., 2003), and was dichotomized, in line with prior research (Strawbridge, Cohen, Shema, & Kaplan, 1997), as at least weekly (24%), or less frequently (76%).

Linear regressions were the mode of analysis, with significance levels set at $p < .05$ (Tabachnick & Fidell, 2007). Correlations were computed between all potential predictor variables to test for multicollinearity, none of which were intercorrelated at $r = .45$ or higher, warranting inclusion in statistical models (Tabachnick & Fidell, 2007). All regression models included three predictor variables: patient question asking, patient assertion of treatment preference, and surgeon solicitation. Using GPower3.0.10 software, a post hoc power analysis indicated that with a sample size of 51, in order to retain a recommended power of .85 (Moore, McCabe, & Craig, 2007), regression models could not exceed five predictor variables. Thus, for parsimony, for each regression model we estimated the bivariate association of each covariate (described earlier) with each of the five coping outcomes (as already described) and only retained those for which $p < .20$, which is a standard screening threshold designed to prevent the premature elimination of variables with stronger multivariate than bivariate effects (Hosmer & Lemeshow, 2000).

**RESULTS**

A standardized multiple regression was performed using the dependent variable fighting-spirit change. After screening for covariates (as already described), none were retained. The full model accounted for a significant amount of variance of fighting-spirit change, $F(3, 46) = 3.54, p = .02$, adj. $R^2 = .14$. Individually, only the variable patient assertion of treatment preference ($\beta = -.39, t = -2.83, p = .01$) was significantly associated with fighting-spirit change; patient question asking ($t = -1.00, p = .32$) and surgeon solicitation ($t = -0.45, p = .66$) were not associated (Table 2). Patients who more frequently asserted their treatment preferences left visits with increased levels of fighting spirit.

A standardized multiple regression was performed using the dependent variable helplessness–hopelessness change. After screening for covariates (see earlier description), two
were retained: household income and race/ethnicity. The full model did not account for a significant amount of variance of helplessness–hopelessness change, $F(5, 40) = 1.21, p = .32, \text{adj. } R^2 = .02$. Individually, no predictor variables were significantly associated with helplessness–hopelessness change: patient assertion of treatment preference ($t = -.23, p = .82$), patient question asking ($t = -.29, p = .77$), surgeon solicitation ($t = -.91, p = .37$), household income ($t = -1.35, p = .19$), and ethnicity ($t = -1.52, p = .14$) (table not included).

A standardized multiple regression was performed using the dependent variable anxious-preoccupation change. After screening for covariates (described earlier), one was retained: companion question asking. The full model accounted for a significant amount of variance of anxious-preoccupation change, $F(4, 45) = 2.50, p = .02, \text{adj. } R^2 = .15$. Individually, the variables patient assertion of treatment preference ($\beta = .37, t = 2.45, p = .02$) and companion question asking ($\beta = .37, t = 2.24, p = .03$) were significantly associated with anxious-preoccupation change: patient question asking ($\beta = .29, t = .77$) and surgeon solicitation ($t = -.43, p = .67$) were not associated (Table 3). Patients who more frequently asserted their treatment preferences and patients whose companions asked more questions left visits with decreased levels of anxious preoccupation.

A standardized multiple regression was performed using the dependent variable cognitive-avoidance change. After screening for covariates (see earlier description), none were retained. The full model did not account for a significant amount of variance of cognitive-avoidance change, $F(4, 45) = 1.42, p = .24, \text{adj. } R^2 = .03$. The individual variable religious attendance ($\beta = -.30, t = -.210, p = .04$) was significantly associated with cognitive-avoidance change, but no communication behavior predictor variables were significantly associated with cognitive-avoidance change: patient assertion of treatment preferences ($t = -.81, p = .42$), patient question asking ($t = .87, p = .39$), and surgeon solicitation ($t = .27, p = .79$) (table not included). Patients who attended formal religious services at least once per week left visits with decreased levels of cognitive avoidance.

A standardized multiple regression was performed using the dependent variable fatalism change. After screening for covariates (as described earlier), none were retained. The full model did not account for a significant amount of variance of fatalism change, $F(3, 45) = .87, p = .47, \text{adj. } R^2 = -.01$. Individually, no predictor variables were significantly associated with fatalism change: patient assertion of treatment preferences ($t = -1.15, p = .26$), patient question asking ($t = 1.07, p = .29$), and surgeon solicitation ($t = .65, p = .52$) (table not included).

### DISCUSSION

In the context of presurgical consultations between women newly diagnosed with breast cancer and a surgeon, the present pilot study examined the relationship between observed (i.e., taped and coded) communication-based participation behaviors—specifically, patient question asking, patient assertion of treatment preferences, and surgeon solicitation—and pre-post consultation changes in aspects of patients’ mental adjustment to cancer, including fighting spirit, helplessness/hopelessness, anxious preoccupation, cognitive avoidance, and fatalism (Watson et al., 1988; Watson et al., 1994). Significant associations were found between communication variables and both fighting spirit and anxious preoccupation.

Fighting spirit is a positive/adaptive coping style characterized by patients’ acceptance of the diagnosis of cancer, having an optimistic attitude relative to the diagnosis, perceiving that they can control the disease, and being determined to overcome it (Greer, 1991). Increases in fighting spirit have been associated with decreases in anxiety, depression, and emotional and psychological distress, and with increases in energy, mental health, adherence, quality of life, and medical-care satisfaction (e.g., Ayres et al., 1994; Schnoll et al., 1998; Watson et al., 1991). Although by no means definitive (Petticrew, Bell, & Hunter, 2002), Osbourne et al. (2004) found fighting spirit to be positively associated with breast-cancer survival 6–8 years following diagnosis. Prior studies have found an association between patients’ self-reported desire to participate (e.g., ask questions and assert treatment preferences) and increases in their fighting spirit.
spirit (Lerman et al., 1993). In line with this, the present study found the participation variable patient assertion of treatment preference to be significantly associated with pre-post consultation increases in patients’ fighting spirit. This finding has strong face validity insofar as asserting treatment preferences is a behavioral index of some degree of patients’ acceptance of the diagnosis and is a method for asserting personal control over the disease, both of which are features of fighting spirit.

Anxious preoccupation is a maladaptive coping style characterized by anxiety and a pessimistic attitude that leads patients to negatively evaluate medical information and physical symptoms (Greer, 1991). Within breast-cancer patients, increases in anxious preoccupation have been associated with increases in anxiety/depression and distress (Reuter et al., 2006; Watson et al., 1991) and with decreases in emotional health, social functioning, vitality (energy levels), and mental health (Anagnostopoulos et al., 2006), and in quality of life (Schnoll et al., 1998). The present study found the communication-participation variable patient assertion of treatment preference, as well as the variable companion question asking, to be significantly associated with pre-post consultation decreases in patients’ anxious preoccupation.

Because the associations between patient assertion of treatment preference and changes in coping outcomes (i.e., increased fighting spirit and decreased anxious preoccupation) are correlational, there are at least two interpretations. First, it might be that increases in these coping outcomes throughout visits (via potential mechanisms such as receiving encouraging or pleasantly unexpected treatment information from surgeons, etc.) “causes” patients to assert their preferences more frequently. Alternatively, it might be that increases in patient assertions (via potential mechanisms such as increasing agency, or even surgeons’ responses to such assertions) “cause” increases in patients’ coping outcomes. Although future research needs to explore alternative explanations, there is at least some evidence for the causal power of communication behavior to be found in the association between companion question asking and changes in patients’ anxious preoccupation. Both theoretically and conceptually, it is less likely that patients’ anxiety is driving companions’ communication behavior. Conceptually, this explanation relies on companions’ tenuous ability to (at least directly) recognize and monitor changes in patients’ anxious preoccupation, which is a psychological state. Furthermore, this explanation runs counter to theory and research suggesting that at least one form of participation, that being information seeking, can drive reductions in anxiety (e.g., as patients’ levels of anxious preoccupation subside, we would expect less, not more, question asking; e.g., Brashers, 2001).

In terms of explaining the present findings, another possibility, which we did not test, is that the effects of patient-centered care on psychosocial health outcomes are mediated through more proximal outcomes, such as patients’ satisfaction with surgeons’ communication (Epstein & Street, 2007). For example, previous research suggest that patient question asking is actually negatively associated with satisfaction (Venetis, Robinson, & Kearney, 2013), and perhaps this begins to explain the lack of association between question asking and coping outcomes.

Over the years, with the goal of developing concrete and targeted communication-training interventions, research has shifted from examining the health effects of macro operationalizations of patient-centered communication (e.g., the sum of all patient-centered behavior) to more micro operationalizations (e.g., shift from Roter, 1977, to Street & Millay, 2001). A key contribution of the present study is the discovery that, at least in the present context, very specific communication-based participation behaviors—that is, patients asserting their treatment preferences and companions asking questions—have the potential to improve patients’ psychosocial health outcomes. These communication behaviors are easily and reliably trainable (Cegala, Marinell, & Post, 2000), and such training can apply to both patients/companions and surgeons, insofar as such behaviors can be either self-initiated by patients/companions or solicited by surgeons.

The present pilot study has a number of limitations. First, in an effort to increase ecological validity at the expense of generalizability (Bollen, 1989), this study examined one specific cancer-care context, that of a newly diagnosed woman with breast cancer consulting with a surgeon to discuss the nature of the cancer and surgical treatment options. Second, this study included a single surgical oncologist (vs. a general surgeon) practicing at a hospital-based, National Cancer Institute-designated cancer center of excellence (vs. a community practice). The result is that this article is a case study of sorts with further limits to its generalizability. Third, this study only included 51 patients, and although a post hoc power analysis supported the robustness of the regression models, future studies need to be more expansive. Fourth, this study examined immediate postconsultation levels of patients’ satisfaction, and did not track continuing changes longitudinally; communication may not associate with coping in the same patterns at different stages of treatment. Fifth, results are correlational, not causal. A final limitation involves the possibility that, by virtue of being videotaped, the surgeon altered his behavior (via the Hawthorne effect; Roethlisberger & Dickson, 1939) so as to increase “best clinical practices” (Mangione-Smith, Elliot, McDonald, & McGlynn, 2002).

Future research needs to replicate the current study while addressing the aforementioned limitations. Beyond that, although existing literature does not provide grounds for expecting that the specific content of participation behaviors affects patients’ cancer coping, this possibility is worth exploring. For example, does the nature of patients’ assertions of treatment preferences matter, such as assertions being “about” surgical procedures themselves (e.g.,...
lumpectomy vs. mastectomy), reconstruction, chemotherapy, and so on? Furthermore, insofar as patients’ participation behaviors shape surgeons’ next conversational moves (Cegala, Street, & Clinch, 2007), future research needs to determine whether surgeons’ responses play a role in patients’ cancer coping. For example, do surgeons respond fully, partially, or at all, or with expected/unexpected news, or with good/bad news? In sum, future studies need to examine significantly larger and more diversified data sets with statistical techniques, such as structural equation modeling, that allow for a more rigorous exploration of indirect and direct effect pathways from communication behavior to outcomes.

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