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Verbal Social Support for Newly Diagnosed Breast Cancer Patients during Surgical Decision-Making Visits

Samantha Nazione,

Communication Department, Berry College, Mount Berry, Georgia, United States

Kami J. Silk, and

Communication Department, Michigan State University, East Lansing, Michigan, United States

Jeffrey Robinson

Department of Communication, Portland State University, Portland, Oregon, United States

Abstract

This study reports an analysis of verbal social support strategies directed by surgeons and patients' companions to breast cancer patients using the social support behavior code (SSBC). Additionally, the influence of companions on the provision of social support is examined. Forty-six videotapes of appointments where treatment regimens were being decided were analyzed. Results demonstrated that the majority of units spoken by surgeons were coded as verbal social support, primarily in the form of informational social support. Companions' social support was lower (relative to surgeons) in nearly every category of social support assessed. Patients who brought companions were found to receive more network social support from surgeons. Overall, these results point to low emotional support from surgeons and companions for patients during these appointments, which indicates a need for modifications in empathy training for medical providers.

Keywords

breast cancer; social support; communication; decision making; surgeons; patient companions; videotapes; medical interview

Literature review

Social support can be defined as “verbal and nonverbal communication between recipients and providers that helps manage uncertainty about the situation, the self, the other or the relationship and functions to enhance a perception of personal control in one’s life experience.¹” Social support for breast cancer patients has been repeatedly linked to improvements in their psychological health, physical health and quality of life.^{2–4} There are at least five types of social support⁵ (1) *emotional support* which conveys comfort and caring, (2) *network support* which allows individuals to feel connected to others like them, (3) *esteem support* which promotes an individual’s self-esteem, (4) *tangible aid* which

involves giving physical assistance, and (5) *informational support* which provides knowledge or ideas regarding problem resolution.

Research suggests that breast cancer patients value emotional support from family and friends, and emotional and informational support from healthcare providers.^{6–7} However, more specific information, such as the amount and types of social support enacted by both providers and companions in this medical setting, is needed. While multiple studies have focused on breast cancer patients' self-reports of social support provision,^{2–4, 8} studies that code actual social support as it takes place within medical settings are necessary. Specifically, research is necessary to better understand not only what types of social support are present but, perhaps more importantly, what types of social support are absent – that is, information that patients may need to better cope and process treatment decisions. The current study examines this gap in the literature through documenting the types and amounts of verbal social support provided by surgeons and companions to breast cancer patients in medical appointments made for the purpose of deciding a treatment regimen. Additionally, this research seeks to gain a greater understanding of the influence companions may have on social support provided by surgeons in this process. The following literature review will provide information relevant to the social support relationship between breast cancer patients, their surgeons, and their companions.

Breast cancer

Breast cancer is the second-most common female cancer (following skin cancer) in the United States.⁹ Worldwide, for women ages 20–59, breast cancer is the cause of more deaths than any other type of cancer.¹⁰ In 2015, nearly 300,000 women were newly diagnosed with breast cancer and over 40,000 women died from the disease.¹¹ Immediately after being diagnosed, patients must make crucial treatment decisions, and these typically begin with surgeons, as the majority of breast cancer patients undergo surgery as part of their treatment plan.⁹ Clear communication between surgeons and patients at this time is vital.

Surgeon-Patient Cancer Communication

Breast cancer patients interact with numerous physicians including their primary care provider, radiologist, oncologist, and surgeon. Surgeons are an important provider to consider given that, as previously mentioned, most breast cancer patients will undergo surgery during treatment.¹¹ Breast cancer surgeons are often tasked with providing information, yet keeping patients hopeful.¹² Surgeon-initiated communication has been linked to patients' sense of choice regarding treatment and overall satisfaction with their care.¹³ Similarly, a survey of breast cancer patients found the caring conveyed by their surgeon was of high importance, with information giving during this essential decision-making time valued much less.³ Unfortunately, research examining surgeon-patient communication is rare, as most provider-patient communication research focuses on primary care physicians.¹⁴ How surgeon-patient communication responds to patient emotion, such as through emotional social support, has been noted as a particularly important avenue for future research.¹⁵ Hence, surgeons are an important healthcare provider to examine for social support constructs.

Although surgeons and patients are at the center of these treatment decisions, this classic dyad is expanding to include patients' companions, that is, family members and friends of patients who accompany patients to medical appointments.

Companions in Healthcare Encounters

Approximately a quarter to a half of all patients bring companions to their medical appointments on a regular basis.^{16–17} Companions are more likely to be family members than friends, and most frequently are spouses followed by daughters and sons.^{18–19}

Patients who frequently bring companions to medical visits indicate they do so in order to receive assistance with communication and emotional support, along with tangible support with transportation or walking.^{17–19} Instrumental support in the form of such activities as note taking and question asking was found to be frequently performed by companions in a systematic review of companion research within the context of decision-making medical appointments.²⁰ Roles of companions for geriatric oncology patients have been found to include memory aid, emotional support, transcriber, decision-making aid, companionship, elaboration, advocate, partner, financial assistant, and interpreter.^{21–22} Similarly, telephone interviews with 18 cancer patients and 17 of their companions found that companions mostly attend medical visits in order to provide social support, harness understanding, ask questions, and ensure transportation.¹⁷ A continually re-occurring theme regarding the role of these companions is social support, particularly because social support is important for patients to receive from both their companions as well as medical providers.⁴

Social Support in Cancer Encounters

Cutrona and Russell⁵ identify five distinct social support types an individual can give to another in need: (1) emotional support, or - “the ability to turn to others for comfort and security during times of stress, leading the person to feel that he or she is cared for by others,” (2) network support, or - “a person feeling part of a group whose members have common interests and concerns,” (3) esteem support, or - “the bolstering of a person’s sense of competence or self-esteem by other people,” (4) tangible aid, or - “concrete instrumental assistance” and, (5) informational support, or - “advice or guidance concerning possible solutions to a problem.” These five types can be placed into two larger umbrella categories, including action-facilitating support (information and tangible support) and nurturant support (emotional, network and esteem support).²³

Emotional and informational social support specifically, have been found to lead to positive health outcomes. Emotional support from providers, family members and friends when receiving a breast cancer diagnosis has been linked to positive feelings of self-efficacy toward dealing with their health issue, better mental health, and improved health related quality of life for breast cancer patients.^{2,8} Informational support additionally has been related to self-efficacy and improved health related quality of life five months post diagnosis for breast cancer patients.²

Cancer patients repeatedly report needing their physicians to be able to provide emotional support, but physicians have reported struggling to deal with patient emotion.²⁴ For

example, one study of 472 British cancer patients found that receiving emotional support from senior doctors was as important as receiving emotional support from their family.⁴ As previously noted, emotional support has been valued over informational support specifically when the social support provider is a patient's breast cancer surgeon.³ Although informational support may be favored from providers, additional types of support provided by surgeons becomes particularly valuable because surgeon-patient encounters provide a unique opportunity to transmit the social support desired by patients. This leads to the current study's first research question:

RQ1: What types of social support (emotional support, network support, esteem support, tangible aid, and informational support) do surgeons and companions offer breast cancer patients, and in what amounts?

Companions

Finally, another interest of the present research is how companions may influence the amount and types of social support provided by breast cancer surgeons to patients in medical encounters. As discussed previously, past research has largely focused on the demographic characteristics of companions, types of companions, and perceptions of companions. Although providing social support is a known service of companions, relatively little is known about the types of social support enacted by companions in medical settings and how it may influence amount and types of social support given by providers. It is possible that the presence of companions conflicts with the provision of emotional support to patients by providers. Labrecque and colleagues¹⁶ recorded 473 oncologist visits, including 100 where a family member was present, and found that oncologists provided less emotional support to accompanied patients. Furthermore, Street and Gordon²⁵ analyzed transcripts of 48 unaccompanied and 84 accompanied patients who were newly diagnosed with lung cancer. Unaccompanied patients were found to express more negative affect during visits. Knowledge of the influence of companions in this setting will be beneficial for providers, in terms of knowing what to expect when a patient brings a companion, as it has been noted that some physicians feel untrained in this area,²⁶ and may also help forward guidelines for this setting. This leads to the second research question:

RQ2: Do companions influence the amount or types of social support received by patients from surgeons?

Method

Participants and Procedure

Human research protection approval was sought and achieved for this project. Patients of the participating surgeons were notified of the study by letter when possible and recruited at clinics before their appointments. Data were a subset of visits drawn from a prior study conducted in Portland, OR.²⁷ Participants in the larger study were 147 English-fluent women with newly diagnosed breast cancer (who were each paid \$20 for their participation; 73% consent rate) who consulted with one of nine surgeons (who were not paid; 60% consent rate) before surgery.

The primary purpose of all visits in the larger study was to educate patients on the nature of their cancer (e.g., approximate size/stage, level of invasion, receptivity to different treatments, etc.), general treatment pathways (e.g., chemotherapy before or after surgery), and specific surgical treatment options (e.g., lumpectomy with radiation vs. mastectomy, reconstruction, etc.). All visits took place in community-based clinics and were videotaped with wireless video cameras without the presence of researchers. Additionally, all participants filled out a short survey both immediately before and after their visits. All visits were completely transcribed for all verbal and vocal behavior.

For the present study, a subsample of 46 (of the 147) visits were analyzed between unique patients and six surgeons. Patient demographics are available in Table 1. In addition to the patients, there were six breast cancer surgeons (again, all female). One of the breast cancer surgeons provided care in 16 of the videos, another was in 11, two were in seven, one was in 4, and the remaining breast cancer surgeon was only in 1 video. Finally, there were 23 unique companions in the videos (17 male, 6 female).

This sample was selected, based on several criteria including surgeon sex, companion presence, estimated cancer stage, and appointment length. First, only patients who attended a visit with a female surgeon were included in the sample because physician sex affects verbal communication with patients,²⁸ and the majority of the surgeons in this sample were female. Twenty-three of the patients were selected from the larger sample of videotapes for attending the medical appointment without a companion for comparison purposes. These 23 patients were then matched as closely as possible with another 23 patients based on cancer stage and appointment length because these variables may influence the provision of social support within the appointment.²⁹

Unitization and Coding

Unitization—Transcripts were analyzed to answer this study's two research questions. Four research assistants, blind to the purpose of this study, were trained to unitize and code the data. The four research assistants trained for a month and a half (approximately 30 hours) to unitize data into utterances, defined as "an independent clause, a non-restrictive dependent clause, an element of a compound predicate, or a term of acknowledgment, evaluation or address."³⁰ Research assistants' goal for coding was to break segments of talk down into the smallest units without altering their meaning. Additionally, research assistants checked each transcript three times, meaning research assistants were asked to unitize a transcript, spend 24 hours away from the transcript, check over the transcript for errors, spend another twenty-four hours away from the transcript before again checking it for errors (and then the transcript could be viewed as final). Both transcripts and videotapes were analyzed in tandem when coding for social support. Reliability for unitization was done with five transcripts from the sample using all four research assistants. These five transcripts contained 3,147 units. However, the reliability statistics of Cohen's Kappa and Scott's Pi were not used in testing reliability due to the low variance across codes in the data set, which renders the reliability statistics as unusable because of their dichotomous formula. Potter and Levine-Donnerstein³¹ noted that reliability measures that correct for chance agreement, can be "... regarded as a very conservative test, because it overcorrects for chance agreement;

especially in coding situations in which there are few options on a variable and when coders choose one of those options very frequently.” Hence, percent-agreement was used in replacement to calculate reliability. The two research assistants with the highest percent-agreement (86%) were selected to complete the unitization process for all transcripts. These two research assistants first met to discuss disagreements on the five transcripts used for reliability and asked to come to agreements. The research assistants then split the remaining files, completing them independently, still using the triple check method before viewing a transcript as final.

The 46 transcripts yielded a total of 34,978 units. Thirty-three percent of these units were from patients and were not coded. An additional omitted 12.6% came from nurses and other medical providers/staff, such as schedulers or nurse navigators. The remaining units from surgeons (49.4%) and companions (3.0%), were coded for verbal social support.

Verbal social support coding—After unitization was complete, these same two research assistants coded the transcripts for verbal social support. For each transcript coded, the research assistants watched five minutes of the video, then coded, and then repeated this process until the video and matching transcript were complete. This process involved six hours of training. Coding of verbal social support was done using the Social Support Behavior Code³² (SSBC). Each unit of speech was coded into an umbrella code of social support, and a specific code of social support under that umbrella code, if applicable. See Table 2 for coding scheme. Two transcripts (1,320 units) were used to assess reliability before coding began. Cohen’s Kappa for umbrella codes was .88 and Cohen’s Kappa for specific codes was .85. Halfway through coding two transcripts (916 units) were used to reassess reliability. Cohen’s Kappa for umbrella codes were .91 and Cohen’s Kappa for specific codes were .88. An overall verbal social support score for each video was then constructed for surgeons and companions. This was done through adding together the total number of utterances coded as social support that belonged to each party during a given appointment and dividing this number by the total number of utterances by a given party to form a percentage. A breakdown of verbal social support given by breast cancer surgeons and companions is available in Table 3.

Results

Research question one

The first research question was interested in the types of verbal social support (emotional, network, esteem, tangible, and informational) surgeons and companions offered patients. Table 3 reports means, standard deviations, and percentages of social support utterances by surgeons and companions. Additionally, see Table 2 for examples of social support utterances.

Research question two

The second research question was interested in how companions influenced social support provision to patients by surgeons. Correlations and independent t-tests were used to examine this research question. Correlations were used to understand the association between

companion amount of social support and surgeon amount of social support. No significant correlations were found between the amount of any of the types of social support provided by companions and surgeons. Independent t-tests were used to examine differences in patient's received amount of the different types of social support from surgeons based on whether or not they had a companion with them. Table 4 presents the findings of these independent t-tests. Patients with a companion ($M = 75.72$, $SD = 12.50$) did not statistically differ in percent of utterances from their surgeon which were socially supportive, as compared to patients without a companion ($M = 71.00$, $SD = 12.40$), $t(44) = -1.28$, $p > .05$, $\eta^2 = .04$. Furthermore, only one type of social support was found to be influenced by the presence of a companion. Patients with a companion ($M = 1.02$, $SD = 0.92$) did receive a significantly higher percent of utterances from their surgeon that provided network support as compared to patients without a companion ($M = 0.51$, $SD = 0.45$), $t(44) = -2.41$, $p < .05$, $\eta^2 = .12$.

Discussion

Numerous past studies have examined the social support desired by cancer patients,^{3,6-7} and the positive effects of this support.³⁻⁴ The context of the medical appointment, most relevantly during times of decision-making regarding surgical treatment options, has been neglected in this research. The medical appointment during times of decision-making is crucial to investigate because it is a time where extra support is likely needed by patients.³ Additionally, medical appointments are the most likely setting for patients to receive support from providers, a source from which cancer patients have noted a desire for support. Companions also frequently attend these appointments,¹⁷ giving support.^{18,21-22} The current in-depth coding project was focused on the types of verbal social support given by surgeons and companions during decision-making medical appointments for breast cancer patients and how companions may alter these interactions.

Not surprisingly, breast cancer surgeons were the most verbally active parties during these appointments under study as indicated by the percent of utterances they spoke (nearly half of all utterances spoken in the average appointment). In comparison, companions only spoke 3% of all utterances in the average appointment. Approximately three-fourths of utterances by surgeons and one-fourth of utterances by companions were found to be socially supportive, the vast majority of this support being informational.

The lower representation by companions in terms of verbal social support does not make the companions in this study passive, as past literature has defined passive companions as those that are simply present with absolutely no verbal participation.³³ Still, the companions under study were not very verbally active. All social support offered by companions took either the form of informational support or esteem support. Informational support was generally provided by asking questions for clarification on the patient's behalf, acting as what past scholars have titled, surrogate patients.³⁴ This study then, did not find that companions provide emotional support as past studies have documented.¹⁸⁻¹⁹

Companion participation in decision-making medical settings is viewed positively by patients,²⁰ and although companion informational support is viewed as helpful by patients,²⁰

emotional support is desired even more by cancer patients.^{6–7} Yet, it is crucial to note that this study cannot speak to the satisfaction of these patients with their companions, only compare to past evidence. Because social support is such a common role discussed for companions at medical appointments,^{18,21–22} it will be important for future research to ask patients specific questions regarding *how* companions support them during their medical appointments. It is very likely this support occurs from companions mostly before and after the appointment, rather than during. Additionally, this study specifically analyzed verbal social support, excluding nonverbal support, which companions may have provided simply by being present at the appointment.

The Influence of a Companion

Past work determined that companion presence may lead to reduced social support by physicians.¹⁶ Contrary to past work, this study found those patients who brought a companion were actually more likely to receive network support, as opposed to those without a companion. Hence, it is possible the presence of a companion actually increases social support received by patients. This increase may be specific to network support because the presence of companions may heighten surgeons' eagerness to provide thorough care via connections. However, overall social support, as well as informational, emotional, esteem or tangible support received from a surgeon did not significantly differ based on presence of a companion. Furthermore, companion levels of social support did not influence surgeon levels of social support. As this detailed study encompassed a small sample size, it is likely important for future work in this domain to collect larger, more diverse samples in order to understand how companion participation can influence provider-patient communication, and to better articulate the reasons behind this influence.

Implications for the Field

As noted, breast cancer surgeon data comprised nearly half the dialogue that took place in appointments providing mostly informational support (namely via teaching). This is indicative of patients receiving the informational support they desire from physicians, but likely less desirable levels of emotional support based on past surveys of patients.^{3,6–7} Breast cancer patients specifically report craving this emotional support from surgeon's more than informational support in decision-making contexts.³

Emotional social support falls under the study of empathy in the medical field, as Halpern³⁵ defines clinical empathy as understanding patients' emotions in order to effectively communicate with them for positive treatment outcomes. Medical providers are warned to be careful when providing empathy as this provision may lead to emotional contagion, which can lead to exhaustion.³⁶ Surgeons also specifically have trouble identifying patient emotion and responding to patient emotion when they do recognize it.¹⁵

Despite these dangers and difficulties, empathy is a core of effective provider-patient communication.^{36–37} Unfortunately, empathy has been found to decrease over medical school and residency.^{38–39} Interventions to improve physician empathy have been done with medical students as well as residents, most of them leading to improved empathy scores,⁴⁰ (although with fading effects.^{40–41} Note, however, that no interventions have been done with

surgeons, and no intervention has specifically focused on providing emotional social support.

Due to the importance and multiplying benefits of empathy, a one-time training for physicians regarding provision of emotional support seems insufficient. Rather, highlighting the importance of, and applications of emotional social support should be woven throughout medical school, residency, and continuing medical education requirements. This study may have recorded low levels of emotional social support, but it still documented evidence of emotional social support that can be used to provide examples for other surgeons. Physicians should be encouraged to share their patient encounters with one another, complete with giving examples of how emotional support was provided, in order to create in every physician a repository of emotional tools to use with patients. Researchers are often relegated to an aggregate level understanding of patient behaviors through broad survey practices. Physicians have the ability to interact one-on-one with their patients, knowing what research indicates the majority of patient's desire, but being able to tailor their interaction specifically to each patient's needs through communication. Physicians will undoubtedly need to work to find a unique fit between themselves and every patient in terms of emotional support needs. Awareness of a large number of methods for providing emotional support to patients during appointments can assist in this endeavor.

Companions would likely also benefit from knowing how to create the most optimal interaction. Perhaps some of their reticence involving verbal participation stems from a lack of guidelines regarding what to expect and how to act in these situations. Simply attending these appointments demonstrates their commitment to the cancer patient. It is likely they would appreciate knowing how to be the best support system for their loved one. Along with repeated trainings for surgeons, trainings for companions, or possibly involving companions in trainings for surgeons may prove helpful for patient mental and physical health outcomes.

Limitations and Future Research

As secondary data analysis, this research was limited to the information already available from patients. Future research should seek to further assess social support in medical settings from the patient perspective. This would be most effectively done through sitting down with patients in front of a videotape of their appointment and asking them to report on their reactions, perceptions, and feelings throughout the appointment.

This project also included a small sample size, which limited comparisons. For example, differences in social support by surgeon, or by companion gender were not examined due to insufficient sample size. It should also be noted that research has found a Hawthorne effect to take place for medical providers under research,⁴³ meaning that medical providers alter their behaviors (likely in a socially desirable manner) when being videotaped, thereby reducing the ecological validity of the data. Hence, a Hawthorne effect could have occurred in this current research in which each surgeon knew her actions were being videotaped. This effect is hard to eliminate as it would be unethical to allow researchers to view medical providers interacting with patients without consent. Finally, future studies should examine nonverbal social support in these appointments as nonverbal communication has been termed a form of emotional social support.⁴⁴

Conclusion

This research sought to understand what types of verbal social support were provided to recently diagnosed breast cancer patients by surgeons and companions in a sample of 46 videotapes. Results demonstrated the majority of units spoken by surgeons were coded as verbal social support, mostly in the form of informational social support, while companion social support was significantly lower in nearly every category of social support assessed. Presence of a companion was also associated with an increase in network support provided by surgeons to patients. In summary, these results collectively point to low surgeon and companion initiated emotional support for patients during these appointments, which indicates a need for increased empathy training opportunities for medical providers, and potentially patient companions.

Biographies

Samantha Nazione

Communication Department, Berry College, Mount Berry, Georgia, United States

Correspondence details: Address, Box 299 Berry College Mount Berry, GA 30149; Phone: 770-378-2939; snazione@berry.edu

Samantha Nazione is an assistant professor in the Communication Department at Berry College. She received her PhD in Communication from Michigan State University in 2013. She received an Excellence-In-Teaching Citation from Michigan State University that same year. Her research focuses on persuasion within the context of health. She is an author on over 20 peer-reviewed journal articles, including those appearing in the Journal of Health Communication, Journal of Applied Communication Research, and Medical Education. Dr. Nazione teaches Public Relations courses in the Communication Department at Berry College, as well as teaching Rhetoric and Public Address for future health care professionals.

Kami J. Silk

Communication Department, Michigan State University, East Lansing, Michigan, United States

Dr. Kami Silk is an professor in the Department of Communication and the Director of the MA Program in Health & Risk Communication at Michigan State University; she also has an appointment with the Michigan Agricultural Experiment Station (MAES). She researches in the general area of health communication, with a specific interest in developing effective health messages for the lay public that are sensitive to health literacy issues. Dr. Silk is currently a co- investigator for an NCI and NIEHS funded grant that investigates the links between the environment and breast cancer. With an emphasis on adolescent lifestyle factors [nutrition and exercise] as a strategy for risk reduction, Dr. Silk is developing health messages for mothers of adolescent girls. Dr. Silk is also funded through MAES to investigate public perceptions of bioeconomy initiatives.

Jeffrey Robinson

Department of Communication, Portland State University, Portland, Oregon, United States

Prior to arriving at Portland State University, Dr. Jeffrey D. Robinson taught in the Departments of Communication at The Pennsylvania State University and Rutgers University. He has published over 50 journal articles and book chapters in both national and international outlets. He specializes in two subfields within the discipline of Communication. First, he specializes in Language and Social Interaction, which examines the rules that guide interactants' use and interpretation of language, and the role of talk-in-interaction in the construction and negotiation of social meanings, identities, and relationships. Second, he specializes in Health Communication, which examines how and why face-to-face communication (e.g., doctor-patient communication) affects aspects of healthcare and health promotion, including individuals' physical, emotional, mental, and/or spiritual health. Dr. Robinson's research has been funded by the National Institutes of Health, the National Cancer Institute, and the Agency for Healthcare Research and Quality.

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Table 1

Patient demographics with or without a companion and overall

Demographic	With a Companion	Without a Companion	Overall
Age	60.70	63.52	62.11
Days since Cancer Diagnosis	9.82	10.52	10.18
Cancer Stage	1.30	1.26	1.28
Length of visit	29.39	29.11	29.25
Percent White	91.30	91.30	91.30
Percent first time diagnosed	91.30	87.00	89.10
Percent married	52.20	47.80	51.10
Percent with at least some college	73.90	73.90	73.90
Percent making \$60,000 or less	52.60	60.80	57.10

Table 2

Social Support Behavior coding system (Suhr, Cutrona, Krebs & Jensen, 2004, p.310) definition and example codes

Umbrella Category	Conceptual Definition	Operational Definition/Specific Category	Examples from Data Set
Informational Support	“advice or guidance concerning possible solutions to a problem (Cutrona & Russell, 1990, p. 322).”	Any suggestion or advice given to the patient in order to promote problem solving.	“...we're gonna recommend you have at least five years of one of our estrogen blocking drugs so...” (spoken by a surgeon)
		Any evaluation of the problem which promotes problem solving.	“...it was very strongly positive, which is a good thing...” (spoken by a surgeon)
		Any form of teaching the patient about the problem in an effort to problem solve.	“...the cancers that are negative tend to be less aggressive.” (spoken by a surgeon)
			“Now is the radiation facility at the 158 th , um ‘ cause I know as good as the one at St. Vincent’s?” (spoken by a companion)
Emotional Support	“the ability to turn to others for comfort and security during times of stress, leading the person to feel that he or she is cared for by others.”	A reminder of the benefits of the relationship between the companion/physician and the patient	“And it’s stressful, and it’s part of my job to help you get through all of this.” (spoken by a surgeon)
		A statement of confidentiality regarding the situation directed toward the patient.	“I’ll tell (name) in scheduling that I’ll get rid of the information, the name and everything if I have to.” (spoken by a surgeon)
		A statement of empathy or perspective taking regarding the situation directed toward the patient.	“You’ve been through a lot.” (spoken by a surgeon)
			“That’s a bummer.” (spoken by a companion)
		A statement of understanding regarding the situation directed toward the patient.	“I completely understand.” (spoken by a surgeon)
		Any spiritual reminders or offerings to the patient.	“And then if it’s okay, I would love to pray with you.” (spoken by a surgeon)
		A statement of concern for the situation or patient, directed toward the patient.	“Are you okay there?” (spoken by a surgeon)

Umbrella Category	Conceptual Definition	Operational Definition/Specific Category	Examples from Data Set
Esteem Support	“the bolstering of a person’s sense of competence or self-esteem by other people,”	A statement declaring something positive about the patient.	“You’re in fantastic shape for a 70 year old.” (spoken by a surgeon)
			“She’s sturdy.” (spoken by a companion)
		A statement validating the patient’s decision during problem solving.	“You made the right choice.” (spoken by a surgeon)
			“Just might as well do it, yeah.” (spoken by a companion)
		A statement relieving the patient of any blame regarding the situation.	“Don’t blame yourself.” (spoken by a surgeon)
		A statement meant to uplift the patient or convince them they can persevere/tackle/deal with the situation.	“You’re going to do great.” (spoken by a surgeon)
			“Wow, pretty good.” (spoken by a companion in response to good news)
Tangible Aid	“concrete instrumental assistance”	An offer of financial assistance to the patient.	“If you need help with medical bills I can step in.” (example)
		An offer of tangible (non-financial) assistance to the patient which is directly related to the problem.	“So lots of options, I’m going to write them down for you, okay?” (example)
		An offer of tangible (non-financial) assistance to the patient which is not directly related to the problem.	“Have one of those later.” (spoken by a surgeon offering a patient chocolate)
		A statement inviting the patient to participate in an activity with the physician or companion	“Let’s cook together.” (example)
		A statement offering willingness to provide assistance to the patient.	“If you guys come up with any questions at any point, just call my office anytime.” (spoken by a surgeon)
		An answer of agreement when asked by the patient for assistance.	“Absolutely and we can do that for you. Absolutely.” (spoken by a surgeon)
Social Network Support	“a person feeling part of a group whose members have common interests and concerns,”	A statement reminding the patient that someone (other than the speaker) cares for them.	“You have an entire family that loves you.” (example)
		A statement suggesting the patient should connect with someone (other than the speaker).	“...what I’m going to do is introduce you to one of the radiation guys here....” (spoken by a surgeon)

Means, standard deviations, and percentages of primary and secondary social support utterances by surgeons and companions

Table 3

Primary Type of Social Support	Secondary Type of Social Support	Surgeon			Companion		
		M	SD	%	M	SD	%
Informational support	Suggestion or advice	6.37	7.46	1.60	0.33	0.64	1.02
	Evaluation	6.37	5.82	1.60	0.00	0.00	0.00
	Teaching	251.35	138.78	65.66	9.38	16.69	23.84
	Total	264.11	146.49	68.86	9.71	16.98	24.86
Emotional support	Reminder of benefits	3.07	3.10	0.80	0.08	0.28	0.18
	Statement of confidentiality	0.07	0.44	0.02	0.00	0.00	0.00
	Statement of empathy	0.65	1.39	0.02	0.04	0.20	0.07
	Statement of understanding	0.74	1.24	0.02	0.00	0.00	0.00
	Spiritual reminder	0.72	4.72	0.23	0.00	0.00	0.00
	Statement of concern	0.07	0.33	0.01	0.00	0.00	0.00
	Total	5.33	6.39	1.10	0.13	0.34	0.25
Esteem support	Declaring something positive	0.96	1.63	0.21	0.08	0.41	0.16
	Validating the patient's decision	0.98	1.41	0.29	0.04	0.20	0.18
	Statement relieving the patient of blame	0.09	0.46	0.01	0.00	0.00	0.00
	Uplifting the patient	2.02	2.92	0.50	0.50	0.88	1.26
	Total	4.11	4.12	1.01	0.63	1.01	1.85
	Financial assistance	0.00	0.00	0.00	0.00	0.00	0.00
Tangible aid	Tangible problem assistance	4.26	3.54	1.10	0.00	0.00	0.00
	Tangible non-problem assistance	0.33	0.97	0.09	0.00	0.00	0.00
	Invitation to participate in an activity	0.00	0.00	0.00	0.00	0.00	0.00
	Willingness to provide assistance	0.11	0.38	0.04	0.00	0.00	0.00
	Agreement to provide assistance	0.09	0.28	0.02	0.00	0.00	0.00
	Total	4.80	3.58	1.25	0.00	0.00	0.00
Social network support	Reminder of caring	0.00	0.00	0.00	0.00	0.00	0.00
	Suggestion to connect	2.85	3.28	0.77	0.00	0.00	0.00
	Total	2.96	3.30	0.77	0.00	0.00	0.00

Primary Type of Social Support	Secondary Type of Social Support	Surgeon			Companion		
		M	SD	%	M	SD	%
Total		281.35	154.03	72.99	10.46	17.42	26.96

Note all percentages are taken from a denominator of all utterances spoken by a speaker (rather than simply those social support utterances).

Table 4

Means, standard deviations, t-statistics, p-values and effect sizes for independent t-tests regarding social support utterance percentages received from surgeons by patients with and without a companion

Type of Social Support	M		SD	Without a Companion		t	p	η^2
	With a Companion	Without a Companion						
Total Social Support	75.72	71.00	12.50	12.40	12.40	-1.28	.207	0.04
Informational Social Support	70.92	66.78	12.98	13.04	13.04	-1.08	.287	0.03
Emotional Social Support	1.33	1.53	1.06	2.30	2.30	-0.34	.711	<.00
Esteem Support	1.22	0.89	0.66	0.56	0.56	-1.81	.077	0.07
Tangible Support	1.23	1.28	0.68	0.73	0.73	0.68	.787	0.01
Network Support	1.02	0.51	0.92	0.45	0.45	-2.41	.020	0.12