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Measuring Communication Similarity Between Hospice Nurses And Cancer Caregivers Using Latent Semantic Analysis

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Abstract

Background: Optimal end-of-life care requires effective communication between hospice nurses, caregivers and patients, yet defining and evaluating effective communication is challenging. Latent Semantic Analysis (LSA) measures the degree of communication similarity (talking about the same topic) without relying on specific word choices or matching of communication behaviors (question–answer) thus more comprehensively evaluating communication interactions.

Objective: Guided by Communication Accommodation Theory we evaluated communication similarity, indicating theoretical convergence, between hospice nurses and caregivers of cancer patients, identifying nurse attributes and communication skills that were associated with greater communication similarity.

Methods: A descriptive secondary analysis of self-reported nurse data and 31 audio-recorded cancer patient home hospice nursing visits across 2 states and 7 hospices.

Results: The average LSA score was .83 (possible range 0–1). A nurse preference for greater patient-oriented visits, use of more Nurse Partnering statements, and less Conversation Dominance (ratio of total nurse to total caregiver talk), were associated with higher LSA scores.

Conclusions: Effective communication is essential to optimal end-of-life care. LSA is a feasible and promising approach for assessing communication similarity during home hospice care.

Implications for Practice: Hospice nurses are at the forefront of family caregiver communication, playing a vital role in empowering caregivers to assume required patient care tasks. Communication strategies such as the use of partnering statements that increase LSA scores can be taught to hospice nurses and other members of the hospice interdisciplinary team as a way to enrich communication skills, improve communication confidence, and can be translated into other oncology nursing contexts.

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Keywords

Nurse-family caregiver communication; Communication; Cancer communication; End-of-life; Hospice; Language similarity; Latent Semantic Analysis

Introduction

Communication between cancer patients, family caregivers, and hospice nurses is an essential component of the provision of optimal end-of-life care. The number of families who receive hospice services is growing, and by extension so is the number of families who engage with hospice nurses. In 2016 1.43 million Medicare beneficiaries received hospice care, with the majority of hospice patients receiving care at home, and having a cancer diagnosis.^{1, 2} The National Consensus Project for Hospice and Palliative Care has placed a renewed emphasis on communication during the delivery of end-of-life care across all 8 identified standards of quality hospice care delivery.¹ During hospice care delivery, hospice nurses strive to understand each family's unique experiences, meet emotional and physical needs, and develop a partnership with the family. Optimally, hospice care delivery results in the creation of a mutual working/caring relationship between the hospice nurse, patient and caregiver.

Home Hospice settings are unique in that end-of-life cancer patient care is usually planned for by a hospice nurse but predominantly delivered by the caregiver due to the around the clock nature of patient needs.² Caregivers look to the hospice nurse for information, validation, and support.^{3, 4} Effective communication skills facilitate nurses' ability to engage in family and/or patient-centered communication, elicit and understand caregiver concerns in a culturally respectful manner, and to respond in an empathetic way that conveys accurate information and reassurance.⁴⁻⁶ When communication and the development of a partnership between hospice nurses and caregivers is successful, caregiver burden and distress is reduced, patient symptom management is enhanced, and caregiver bereavement adjustment is improved.^{7, 8} However, effective communication is often hard to define, measure, and quantify.⁹

One indicator of successful communication interactions is communication similarity, defined in this study as hospice nurses and caregivers communicating about the same topic. Evaluating and assessing similarity is a measurement challenge given the inherent messiness of real life communication interactions.^{10, 11} Latent Semantic Analysis (LSA) is a quantitative analytical approach that has proven useful when assessing communication similarity because it provides comparison of words that contain similar semantic information, that is, comparing different words that have similar meaning.¹² LSA assigns values from 0 (signifying low similarity) to 1 (high similarity) and has been effectively used to assess communication similarity between patients and physicians.¹³ In this study we extend the use of LSA to communication between cancer caregivers and hospice nurses during home hospice nursing visits.

LSA accounts for situations in which specific word choice or communication affective process may not exactly match, but are similar in intent and topic. Situations where the

caregiver and nurse are moving towards convergence in content, but not using similar words or affect (coded as emotional expression e.g. reassurance, empathy), may not be readily identified using traditional communication analytic and coding tools, presenting a communication coding challenge. For example, a caregiver might say “I’m worried the pills will make his breathing get bad” with a nurse response of “It is normal for his respiratory rate to slow a bit when he takes the medicine, but really this means he is more comfortable.” In this example information was offered by the nurse to alleviate and reassure the caregiver in response to a statement that indicated caregiver distress, rather than words conveyed with emotional expressions of empathy or explicit reassurance. These statements could also be coded as a disconnected conversation where caregiver distress was ignored due to the use of different wording and emotional expression. In another example, a distressed caregiver might remark, “His breathing is so weird!” A response of, “It’s expected that his breathing will look like this right now” could be coded as an informational response rather than an emotional response, again resulting in communication coding that appears as a disconnected conversation. An emotional statement met with an information statement as a response may not seem reassuring at face value, especially when one is coding written transcripts as opposed to listening to speaker tone of voice on an audiotape. However, these speakers are clearly discussing the same topic (an altered respiratory pattern) despite using different words and different emotional affect, with an apparent nursing intent to use the provision of information as both explanation and reassurance.

The home hospice setting provides a unique opportunity to both test LSA as a measure of communication similarity between cancer caregivers and hospice nurses, and to determine nurse attributes and communication behaviors associated with LSA scores. Given that home hospice nurses optimally develop a partnership with caregivers to discuss, develop, and implement end-of-life care, we hypothesized that higher LSA scores (indicating greater communication similarity between speakers) would be related to greater amounts of explicit emotional communication, greater use of nursing partnering statements (communication skills variables), and a greater nursing preference for patient/family-oriented care.

Theoretical Framework

Communication Accommodation Theory (CAT) was used to guide this study based on applicability and previous use in many healthcare settings and populations including end-of-life cancer care,¹⁴ among nurses,¹⁵ with the elderly,^{16–18} and to explain shared information and associated understanding between pharmacists and patients.^{19, 20} CAT addresses the way speakers either converge or diverge during conversations to either adapt to each other’s communicative behaviors, or to accentuate communication differences.¹⁶ CAT addresses five strategies used by speakers to adapt to each other: approximation, interpretability, discourse management, emotional expression and interpersonal control.¹⁵ Approximation explains how speakers adjust their speech patterns (e.g. pitch, rate, volume) and indicates attempts at communication convergence.²¹ Interpretability reflects conversational competence, and by extension health literacy, as speakers modulate their language and word choice to make sure their words are understood. Discourse management refers to how speakers use nonverbal and/or verbal cues. These cues are often used to signal a topic change or to indicate turn-taking by indicating a speaker has finished speaking.¹⁵ Emotional

expression strategies indicate a speaker is explicitly using empathy and/or reassurance to respond to emotional cues or statements.²² Finally, interpersonal control addresses the roles and power differentiation between speakers as common ground is established.¹⁵ Overall, CAT posits that when convergence is achieved communication effectiveness increases, which can lower uncertainty and interpersonal anxiety, and increase mutual understanding. These ultimate theoretical outcomes are all desirable in the provision of optimal end-of-life care.

In summary, to deliver optimal end-of-life cancer care that respects the caregiver as a member of the hospice team, indicative of a family-centered approach, communication between hospice nurses and cancer caregivers must be delivered in an understandable way while conveying essential information, emotional support, and empathy.^{23, 24} This necessitates the use of similar language, and similar communication processes such as emotional expression, to achieve communication convergence between speakers. The ability of speakers to accommodate to differences in word choices, and adapt to contextual situations when explaining a phenomena so that all participants understand the topical content, is a desirable communication outcome and once defined, one that can be taught to others. CAT helps explain how communication convergence or similarity occurs; use of a LSA approach may facilitate more comprehensive evaluation of language similarity, helping to quantify theoretical convergence among speakers.

Method

The current study is a descriptive secondary analysis of data originally collected as part of a multi-site, observational, Institutional Review Board and hospice agency approved, program project grant focusing on communication between home hospice nurses and family caregivers of cancer patients in the United States. Participating caregiver-patient dyads were part of consented nurses' caseloads. Patients who were 50 years or older with a cancer diagnosis and receiving home hospice support, with spouse or adult child caregivers who were English-speaking and writing proficient, provided written consent then were enrolled. Upon enrollment participants completed demographic and baseline questionnaires. Nurses subsequently audio-recorded home hospice visits to participating families from study enrollment until patient death, providing the original home hospice nursing visit coded communication data.^{25, 26}

Audio-tapes were initially coded in the parent study using the Roter Interaction Analysis System (RIAS).^{27, 28} RIAS coding can be done without transcription as coders listen to audio-tapes coding conversation components and speaker affect simultaneously using the RIAS software. RIAS coding results yields a count of utterances within each of the communication variables. These frequency counts can then be converted to a ratio of the number of utterances of the variable being coded, such as Nurse Partnering statements, in relation to total utterances for the visit. Results are as a percentage (e.g. a Nurse Partnering value of .04 indicates that 4% of all nurse statements during the home hospice visit were coded as Nurse Partnering statements).

The intent of the initial RIAS communication coding was to explain how communication between hospice nurses and caregivers unfolded in relation to domains of quality hospice care delivery as defined by the National Consensus Project for Hospice and Palliative Care.¹ Results have been published, indicating that the majority of nurse-caregiver communication focuses primarily on physical care of the patient with much less conversation focusing on caregiver needs and other domains of quality hospice care delivery.^{3, 4, 25, 29–31}

For this secondary analysis we selected 31 coded audio-recordings of nurse home hospice visits. These nursing visits (and associated self-report data from nurses and caregivers participating in these encounters) were chosen because previous coding using the RIAS system^{27, 28} indicated the presence of nurse and caregiver utterances of Positive Emotion and Caregiver Distress. When nurse and caregiver expressions of Positive Emotion and Caregiver Distress are present we expected to see nursing attempts towards topical and emotional communication similarity, indicating attempts at theoretical speaker convergence, providing fruitful conversations with which to study the usefulness of LSA as a way to evaluate communication similarity.⁵ Aims of the current study were to:

1. Evaluate communication similarity (LSA score) between nurses and caregivers
2. Assess associations between communication similarity (LSA scores) and a nursing preference for caregiver-centered communication (self-report data) and communication variables (Nurse Partnering, Nurse Emotional Response, Nurse Positive Emotion, Caregiver Distress, Caregiver Positive Emotion and Conversation Dominance)
3. Assess the feasibility of using LSA as a way to evaluate overall communication effectiveness during end-of-life communication between cancer caregivers and hospice nurses.

Measures

Nurse Data—The Patient-Practitioner Orientation scale measures a self-reported preference for patient-centered communication.³² In previous research, this scale predicted patient satisfaction, particularly when physician communication style matched patient communication style.³² We adapted this instrument to reflect a preference for caregiver-centered communication. For example the item “The doctor is the one who should decide what gets talked about during a visit” was adapted to read “The nurse is the one who should decide what gets talked about during a visit”. Similarly the item “It is often best for patients if they do not have a full explanation of their medical condition” was adapted to read “It is often best for family caregivers if they do not have a full explanation of the patient’s medical condition”, and the item “Patients should be treated as if they were partners with the doctor, equal in power and status” was adapted as “Family caregivers should be treated as if they were partners with the nurse, equal in power and status”. Eighteen items are rated on a scale from 1 (strongly disagree) to 6 (strongly agree) with a maximum possible score of 108. Items were all reverse coded for ease in interpretation so that higher scores indicated a greater nursing preference for caregiver-centered care.

Communication Data—RIAS codes were used to obtain communication variable data. Data are representative of the number of statements coded for the variable, in relation to the total amount of utterances within a home hospice nursing visit. Nurse Partnering captures nurse attempts at developing a partnership with caregivers. Previous research indicates that using the communication skill Nurse Partnering may facilitate caregiver emotional processing, help with decision-making, and improve satisfaction with care.³³ Similarly, Nurse Emotional response, Nurse Positive Emotion, Caregiver Distress, and Caregiver Positive Emotion were selected for inclusion in this analysis because when these statements are observed in home hospice nursing visits it is theoretically plausible that attempts at communication convergence would occur as speakers make attempts to accommodate their communication style to each other. Evidence also suggests that when patients and families are allowed to lead the conversation with providers, (employing a patient-centered approach) health care interactions are more efficient.³⁴ Nurses who speak less during a visit than caregivers are assumed to be using the communication skill of active listening. To obtain an assessment of speaker Conversation Dominance (reflecting the theoretical CAT domain of interpersonal control) the ratio of total nurse talk to total caregiver talk was calculated for each of the 31 home hospice nursing visits. Variables, operationalization of RIAS codes, and examples are found in Table 1.

LSA Scoring and Calculation—To calculate LSA scores, audio-recordings of selected home hospice nursing visits were transcribed. Transcripts were proofread and processed to remove all punctuation marks, then divided into nurse text and caregiver text. Similarity (the LSA score) for each section of nurse and caregiver text for a given transcript was estimated using a pairwise document to document comparison. LSA analyses were completed using the on-line version of LSA (available at <http://lsa.colorado.edu>). LSA settings of maximum factors of analysis, based on the setting of General Reading (up to 12th grade) semantic space training corpus (semantic spaces create representations of natural language that can capture meaning, and address ambiguity and wording mismatches³⁵), were used. Results are in the form of a numerical matrix comparison. A value between 0 and 1 was generated to indicate the amount of similarity in word meaning between nurses and caregivers. Values closer to 0 signify lower communication similarity between nurses and caregivers, values closer to 1 signify higher similarity (indicating theoretical communication convergence).

Analysis

In this secondary analysis we used numerical data from 6 communication variables representing Communication Skills used by nurses: *Nurse Partnering*, *Nurse Emotional response*, *Nurse Positive Emotion*, *Caregiver Distress*, *Caregiver Positive Emotion*. We calculated *Conversation Dominance* as the ratio of total Caregiver Utterances /total Nurse Utterances. We also used numerical data from one adapted self-report measure, the *Patient-Practitioner Orientation* scale. LSA scores for each home hospice nursing visit were obtained using LSA online software.

Bivariate correlations were used to assess relationships with communication variables, self-reported data, and LSA scores. This approach enables us to evaluate associations between the use of specific Nursing Communication skills with Communication similarity (LSA

scores) as a theoretical indicator of effective communication, an important component of quality end-of-life care.

Results

Demographic and Descriptive Data

Caregivers and nurses in this sample represented 7 hospice agencies across 2 states. Visits lasted on average 55 minutes (Range=27–113 minutes). Nurses (N=23) were all Caucasian females, mean age 45 (SD=10.3) with an average of 15.6 years nursing experience. Caregivers were predominantly Caucasian females (77.4%) with an average age of 64.7 years (SD=10.9 years). Of the 31 caregivers, 24 were the patient's spouse/partner with an average relationship duration of 34.6 years (SD=16.9 years). The remaining 7 caregivers were adult children of the patient. Patients were primarily Caucasian males (67.7%) with an average age of 71.5 years (SD=6.6). Participant characteristics are presented in Table 2.

Communication

The average LSA score across 31 home hospice visits was 0.83 (range 0.66–0.89). Higher LSA scores, indicating greater communication similarity and convergence among nurses and caregivers, were associated with a greater nurse reported preference for patient-centered communication ($r=0.75$, $p<.0001$). Higher LSA scores were significantly associated with increased Nurse Partnering ($r=0.36$, $p=.02$), decreased Nurse Emotional Responses ($r=-0.33$, $p=.03$) and lower levels of Caregiver Distress statements ($r=-0.29$, $p=.06$). Higher LSA scores were also associated with higher ratios of caregiver to nurse Conversation Dominance ($r=0.39$, $p=.015$), indicating that greater communication similarity was associated with more caregiver talk relative to nurse talk. Correlation results are presented in Table 3.

Discussion

Effectively communicating in a family-centered manner with cancer caregivers is an indicator of quality end-of-life care delivery.^{1, 2} However, assessing and quantifying effective communication is a measurement challenge as speakers don't always use similar words or affect during conversations even when discussing the same topic.^{10, 11} This study is one of the first to investigate the feasibility of using Latent Semantic Analysis (LSA) in settings outside more traditional physician-patient outpatient encounters. Our results demonstrate that LSA is a reasonable approach to assessing effective communication between hospice nurses and caregivers in home hospice settings because LSA addresses communication similarity, providing a way to quantify discussions where topical content is similar but word choice and affect may be different among speakers.

Communication similarity is an important indicator of effective patient/caregiver-centered communication, and by extension important to the delivery of optimal end-of-life care. Communication similarity is also considered a theoretical indicator of communication convergence, and by extension overall communication effectiveness as speakers accommodate to each other.¹⁶ In this study, as nurses and caregivers accommodated to each other's word choice and affect, nurses used communication skills such as Nurse Partnering

and Nurse Emotional responses to address caregiver needs and concerns (indicated by the communication variable Caregiver Distress). Exploring what communication skills contribute to greater communication similarity is one way to identify communication skills that enhance the caregiver-patient-provider relationship. However, these skills are frequently learned by experience rather than during formal education offering opportunity for future research and suggesting clinically related opportunities for improvement.³⁶

We anticipated that because of home hospice's long-standing prioritization of family-centered care and longer visit length (in this study Mean 55 minutes) we would see higher LSA scores in the home hospice setting than have been reported in the shorter encounters typical of outpatient settings. Previous research by Vrana et al. used LSA to evaluate communication between physicians and their patients in an outpatient clinical setting, reporting that the mean LSA score for physician-patient communication was 0.142, substantially lower than the mean LSA score (0.83) in our study of nurse-caregiver communication.¹³ Our finding of higher LSA scores in hospice settings also supports Communication Accommodation Theory (CAT) in that speakers have had the time to achieve more communication convergence (successfully adapt to each other) over the longer-term relationships developed during hospice cancer care. However, it is also possible that this difference could also be explained by the CAT domain of interpersonal control, reflecting the greater power differential between physicians and patients as opposed to that between nurses and caregivers as patients' transition from curative to hospice care.³⁶

Higher LSA scores were associated with a greater nurse preference for a caregiver-centered communication, indicating that nurses who tried to support caregivers and to identify caregiver needs and concerns achieved greater communication similarity with caregivers. Our findings suggest that nurses who achieve greater communication similarity spoke less during a home hospice visit (indicated by Conversation Dominance scores) and used more Nurse Partnering statements, key communication skills associated with family-centered end-of-life care.^{1, 2, 37} Finally, while there was no association between LSA scores and the expression of Positive Emotion, higher LSA scores were associated with fewer Caregiver Distress statements although this should not be interpreted in a causal manner due to the correlational nature of our analyses. Overall, our findings suggest that LSA may be a way to more comprehensively assess hospice nurse-caregiver centered communication and by extension, caregiver and/or family-centered communication effectiveness in home hospice settings.

Implications for Nursing

As leaders of a hospice interdisciplinary team hospice nurses are at the forefront of patient and family caregiver communication, playing a vital role in providing both direct patient care and empowering caregivers to assume required patient care tasks. To deliver optimal end-of-life care, nurses must develop a plan that includes and respects the family core values, expectations, needs, feelings, and psychosocial context, accommodating to caregiver language use by adapting their own communication approach.^{32, 38} However, some nurses may lack confidence in their ability to respond effectively to expressions of caregiver distress or may be uncomfortable with expressions of emotion.^{33, 39, 40} Thus, it is possible

that nurses, even experienced nurses, may distance themselves (theoretical divergence as opposed to convergence) from caregivers either verbally or non-verbally.⁴¹ Moreover, ways to achieve effective end-of-life discussions by adapting communication behaviors, such as the use of specific communication skills, are not always taught, instead these skills are more often learned on-the-job providing a fruitful area for institutional hospice quality improvement programs.³⁶ Overall, communication strategies that increase communication similarity LSA scores can be taught to hospice nurses and other members of the hospice interdisciplinary team as a way to enrich communication skills, improve communication confidence, and can be translated into other oncology nursing contexts.^{36, 42}

Limitations

We were not able to assess LSA in relation to male hospice nurses, although our female sample often represents the landscape of hospice nurses and is consistent with the predominantly female national nurse workforce.⁴³ Our selection of home hospice visits with evidence of statements indicating Caregiver Distress and Positive Emotion for this secondary analysis precludes more complete assessment of the spectrum of home hospice nurse-caregiver communication. This is especially true for home hospice nursing visits to patients who experienced a “quick” death (72 hours or less after admission) as these patients and their caregivers were not enrolled in the parent study due to the longitudinal nature data collection. Moreover, because of the cross-sectional nature of these analyses, we are unable to determine if more similar communication more fully addresses family needs, reassuring families and reducing caregiver distress, or if greater communication similarity is found in situations where the caregiver is less distressed. Considering the CAT domain of discourse management, we were not able to identify nonverbal management techniques as conversations were audiotaped not video-taped. Finally, we did not capture differences in, and indicators of, LSA similarity between nurse-caregiver versus nurse-patient communication, suggesting avenues for future research.

Conclusion

Our study is one of the first to use LSA to measure communication similarity, a theoretical indicator of communication convergence, between hospice nurses and caregivers of cancer patients at end-of-life. Our research suggests that it is feasible to use LSA to evaluate home hospice communication more comprehensively, addressing a known communication measurement challenge. Our findings suggest that LSA could be a useful way to assess family-centered communication, and suggests the usefulness of specific nursing communication skills such as Nurse Partnering and Nurse Emotional responses when engaging in hospice care delivery. Hospice nurses who achieve communication similarity with caregivers of cancer patients may be using effective communication approaches in home hospice care that could extend to other healthcare delivery settings.

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Table 1.

Communication Variables, Operationalization, and Example Statements.

Communication Variable (by Speaker)	Operationalization of Communication Variables (Statements indicate or contain these components)	Examples
Nurse Partnering	show approvals, shows agreement or understanding, indicates partnership, gives orientation or instruction, paraphrases, checks for understanding, asks opinion, asks permission	Would you bring that blanket here and help me make the bed? Is this ok?
Nurse Emotional Response	offers reassurance, Uses empathy, legitimizes concern, recognition of emotional state	Who wouldn't be afraid? I'm sorry about your husband.
Nurse Positive Emotion	optimism or encouragement, jokes or humor, compliments, expressions of approval, gratitude, praise, reward, respect or admiration	I'm so glad you got time to spend with your brother. That was terrific!
Caregiver Positive Emotion	humor, compliments, approval, reassurance or optimism	Nothing like cartoon sheets to make you feel young! He looks better today!
Caregiver Distress	indications that an event or condition is serious, worrisome, distressing, crying, self-criticism	I am losing him forever. There are so many things to think about, it keeps me up at night.
Conversation Dominance	Total Caregiver Utterances /Total Nurse Utterances	

Table 2.

Hospice Nurse, Caregiver, and Patient Characteristics.

Demographics			
	Nurse N=23	Caregiver N=31	Patient N=31
	N (%)	N (%)	N(%)
Gender			
Male	--	7 (22.6)	21 (67.7)
Female	23 (100.0)	24 (77.4)	10 (32.2)
Ethnicity (missing data:1 nurse)			
Hispanic	--	2 (6.4)	--
Non-Hispanic	22 (95.7)	29 (93.5)	31 (100.0)
Race			
Asian	--	--	--
Black/African American	--	--	1 (3.2)
White/Caucasian	20 (87.0)	31 (100.0)	30 (96.8)
White/Caucasian + Other	3 (13.0)	--	--
Nursing Education			
Diploma	1 (4.3)	--	--
Associate	16 (69.6)	--	--
Bachelors	6 (26.1)	--	--
Annual Household Income (Nurse)			
Less than \$10,000	--	1 (3.2)	--
\$10,000–24,999	--	8 (25.8)	--
\$25,000–39,999	--	4 (12.9)	--
\$40,000–59,999	--	5 (16.1)	--
\$50,000–74,999	--	6 (19.3)	--
\$75,000 +	--	5 (16.1)	--
Declined to answer	--	2 (6.5)	--
Employment			
Not working	--	21 (67.7)	--
Part-time	--	4 (12.9)	--
Full time	--	6 (19.4)	--
Caregiver Self-reported Health Status			
Excellent	--	3 (9.6)	--
Very good	--	15 (48.4)	--
Average	--	8 (25.8)	--
Poor	--	--	--
Very Poor	--	--	--
	M (SD)	M (SD)	M (SD)

Demographics			
	Nurse N=23	Caregiver N=31	Patient N=31
	N (%)	N (%)	N(%)
Age (Years)	45 (10.3)	64.7 (10.9)	71.5 (6.6)
Length of Caregiver-Patient Relationship (Years)		34.6 (16.9)	
Days on Hospice Service			99.4 (76.5)
Hospice Nursing Experience (Years)	15.6 (14.1)		

Table 3.

Correlation and Mean of LSA Scores, Nurse Measures, and Caregiver Measures.

	Mean (SD)	Correlation With LSA Scores
LSA Score	0.83 (0.05)	---
Nurse Preference for Patient-Oriented Care	59.05 (7.80)	0.75 ($p < .0001$)
Conversation Dominance (Total Caregiver Utterances /Total Nurse Utterances)	0.63 (0.30)	0.39 ($p = .01$)
Nurse Partnering	0.06 (0.03)	0.36 ($p = .02$)
Nurse Emotional Response	0.04 (0.02)	-0.33 ($p = .03$)
Nurse Positive Emotion	0.08 (0.03)	-.03 ($p = .88$)
Caregiver Distress	0.03 (0.03)	-0.29 ($p = .06$)
Caregiver Positive Emotion	0.06 (0.03)	-0.12 ($p = .58$)