

Promoting Enhanced Patient and Family Caregiver Congruence on Lung Cancer Symptom Experiences

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Purpose/Objectives: To test the effects of different perspective-taking instructional sets, gender, caregivers' personal histories with cancer, and caregiving relationship factors on family caregiver and patient perceptual agreement of symptom experiences of patients with lung cancer.

Design: Counterbalanced.

Setting: Thoracic oncology outpatient clinical setting in Canada.

Sample: 98 dyads consisting of patients with lung cancer and their family caregivers.

Methods: Data were collected on a one-time basis by employing an abbreviated version of the Memorial Symptom Assessment Scale targeting lack of energy and worrying. Caregivers were randomized to one of six counterbalanced conditions of perspective-taking instructions.

Main Research Variables: Caregiver discrepancy scores, instructional sets (i.e., neutral, self-report, and imagine-self and imagine-patient perspective-taking), order effects, gender, caregivers' personal history with cancer, and caregiving relationship factors.

Findings: No order effects were found for the instructional sets. Instructions to imagine the patient's perspective over imagining how the caregiver would feel if he or she had cancer were most effective in enhancing the caregiver's ability to estimate the patient's lack of energy and worrying. Gender had no significant effects. The amount of patient-caregiver communication had a positive impact on the accuracy of caregivers' perspectives.

Conclusions: The patient-oriented instructions had a limited impact on enhancing patient-caregiver congruence on patient symptoms. This likely is related to the study's convenience sample of caregivers who appear to naturally engage in empathic processes of patient-oriented perspective-taking when they assessed and reported on patient symptom conditions.

Implications for Nursing: Further exploratory work should identify interpersonal conditions that negatively hamper the effects of caregiver perspective-taking on their reasonable understanding of patient symptoms.

According to the Canadian Cancer Society and the National Cancer Institute of Canada (2005), lung cancer remains the leading cause of cancer death for men and women. Compared to other types of cancer, the distress associated with symptoms arising from lung cancer has been reported to be the most intense (Degner & Sloan, 1995). In outpatient clinic settings, the main targets of surveillance are multiple physical and psychological symptoms that often are difficult for formal and informal caregivers to manage (Corner, Plant, & Warner, 1995; Krishnasamy & Wilkie, 1999). In light of poor five-year survival rates among patients with

Key Points . . .

- ▶ Family caregivers of patients with lung cancer report problems in coping with symptom management.
- ▶ Extant research and this study's findings suggest that family caregivers in long-term and openly communicative relationships with patients are more likely to embrace a patient-oriented versus a self-oriented perspective to assist them in empathically understanding patients' illness experiences.
- ▶ Oncology nurses should not encourage family caregivers to draw on their own symptom experiences because this results in more discrepant estimates of patients' experiences with symptoms.
- ▶ Regardless of the gender of family caregivers, nurses should evaluate the degree of communication and perspective-taking activities by family caregivers that affect their perceptual accuracy on patients' illness experiences.

lung cancer (i.e., less than 15%), symptom management is especially important in assisting them to achieve optimal quality of life (Canadian Cancer Society & National Cancer Institute of Canada).

With an aging population, healthcare cost restraints, and fewer acute and palliative care inpatient beds, the expectation is growing that informal caregivers play a sustained and effective role in the surveillance and management of troublesome symptom complexes experienced by patients across the cancer trajectory. This expectation appears to be based on the untested assumption that family caregivers already possess the skill and

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knowledge required to manage symptoms. However, patients with lung cancer and family caregivers experience problems in coping with symptom management (Cooper, 1984). Researchers have documented that the most time-consuming and difficult duties for adult children and spouses of patients with lung cancer were providing emotional support and monitoring symptoms (Bakas, Lewis, & Parsons, 2001). They also reported that the experiences of caregivers of patients with lung cancer rarely have been explored. Further investigative work is required to determine strategies for improved symptom management by family caregivers of patients with lung cancer.

Literature Review

In general, when researchers explored patient-family caregiver perceptual congruence on patient symptom experiences, their studies did not appear to be based on a theoretical framework that delineates the multidimensionality of symptoms. Most investigators employed either unidimensional measurements of symptoms, such as symptom intensity (Clotfelter, 1999; Glover, Dibble, Dodd, & Miaskowski, 1995; Keefe et al., 2003; Saxena, Mendoza, & Cleeland, 1999), or multidimensional tools that confound symptom dimensions (e.g., symptom distress is confounded with symptom frequency on the Symptom Distress Scale) (Cooley, Short, & Moriarty, 2002; Kristjanson et al., 1998; Lobchuk, Kristjanson, Degner, Blood, & Sloan, 1997; Oh, 2004). By separately measuring the underlying dimensions of symptoms (e.g., frequency, severity, distress), researchers and clinicians may be better able to design and test interventions to minimize perceptual discrepancy between patients and caregivers on targeted dimensions of a symptom.

In the caregiving literature, findings suggest that family caregivers engage in patient-oriented perspective-taking, whereby they are sensitive to seeing the patient's world from the patient's cognitive or emotive viewpoint, to aid them in the provision of optimal symptom management and assessment (Andershed & Ternstedt, 1999; Hudson, Aranda, & McMurray, 2002; Larsson, Larsson, & Carlson, 2004; Pistrang & Barker, 1995; Thulesius, Hakansson, & Petersson, 2003). Lobchuk (2001) and Lobchuk and Vorauer (2003) systematically tested the theoretical relationship between perspective-taking activities by family caregivers and their accuracy in judging patient symptom experiences and gleaned insight on caregivers' natural approaches to estimating patient symptoms by comparing assessments made under neutral instructions with those made under instructions that induced different types of perspective-taking. The different types of perspective-taking prompts included those that asked caregivers to put themselves in the patient's position (imagine patient) and those that asked caregivers to imagine themselves as the ill person (imagine self). Three salient findings were reported. First, Lobchuk and Vorauer's study corroborated findings that caregivers tend to exhibit a bias to overestimate patient symptom experiences in comparison to patient self-reports. Second, correlational analyses with caregivers' natural estimates suggested that they make real efforts to understand the patient's physical symptoms, such as lack of energy, from the patient's viewpoint. However, caregiver attempts to infer psychological symptoms, such as worrying, from the patient's viewpoint appeared to be affected by the caregiver's own

experience with worrying. Third, the imagine-patient prompt was effective in adjusting the caregiver's viewpoint to one that more closely aligned with the patient's viewpoint on lack of energy and worrying. Nonetheless, a major limitation of this work was the lack of a counterbalanced design to test the effects of different perspective-taking instructions on dyadic discrepancy scores. Therefore, the main purpose of the current study was to employ a counterbalanced design to deal with potential order effects of perspective-taking instructional sets previously employed by Lobchuk.

Equivocal evidence in healthcare and social psychology literature is related to gender effects on caregiver judgment accuracy (Carlson, Ottenbreit, St Pierre, & Bultz, 2001; Deschler, Walsh, & Hayden, 2004). This begs a question as to the veracity of stereotypes that portray women as more intuitive and more accurate in their perceptions about others than men. Because some findings suggested that the gender of patients and family caregivers might influence judgment outcomes (Kristjanson et al., 1998), further research is warranted. Moreover, the gender of patients and family caregivers is an easily identifiable factor that can help healthcare professionals target caregivers who need assistance in accurately inferring their loved ones' symptom events.

Besides exploring demographic and illness- and treatment-related variables as predictors of caregiver judgment accuracy, researchers have purported that efforts should be more concerted to explore interpersonal dynamics as predictors that might at least partially account for family caregivers' reasonable estimates of a loved one's symptom experiences (Bar-Tal, Barnoy, & Zisser, 2005; Thorn, Keefe, & Anderson, 2004; Zhang & Siminoff, 2003). Aaronson (1991) suggested that the quality of the caregiving relationship plays a significant role in the ability of the caregiver to empathize with the patient's situation and to rate the patient's experience accurately. Numerous other studies have found positive associations between family caregiver judgment accuracy and caregiving relationship factors, such as the length of the relationship, amount of patient-caregiver contact, type of caregiver assistance provided to patients, level of patient-caregiver communication, and residential proximity of patients to their caregivers (Carlson et al., 2001; Sneeuw, Aaronson, de Haan, & Limburg, 1997). These findings suggest that, within the social context of the family, unique relationship dimensions of empathic support, cohesion, and affiliation exist that have beneficial influences on patient-caregiver interaction and the reliability of family surrogate responses regarding patients' quality-of-life experiences (e.g., symptoms).

Projection is a type of "assumed similarity" wherein observers, such as caregivers, might view a familiar person (e.g., the patient) the same way that they view themselves. Neyer, Banse, and Asendorpf (1999) suggested that projection can be viewed as a reasonable heuristic device that is used consistently in close dyadic relationships to understand another's thoughts and feelings. More specific to the cancer context, caregivers may project their own viewpoints onto their inferences of the patient's symptom experience, especially when they either possess a personal experience with having been diagnosed with cancer themselves or vicariously share in the patients' illness experiences. The current study also explored the associations between the caregivers' personal history with cancer and their perceptual estimates to determine whether projection or assumed similarity leads to congruent or incongruent perceptions of patient symptoms.

The purpose of the current study was to use a counter-balanced design to address two major questions. The first question was, "Are caregivers able to achieve enhanced perceptual congruence when estimating patient lack of energy and worrying across the symptom dimensions of frequency, severity, and distress and the total symptom experience when they are induced to imagine the patient's perspective?" The researchers hypothesized that, in comparison to the neutral baseline measure, caregiver imagine-self perspective-taking, imagine-patient perspective-taking, and self-report instructions make a difference in caregiver responses, with imagine-patient responses being most similar to patient responses on symptom experiences. The second question was, "What is the relationship of caregiver discrepancy scores with caregiver and patient gender, the caregiver's personal history with a cancer diagnosis, and caregiving relationship factors?" The caregiving relationship factors were the length of time that the caregiver cared for the patient, the extent to which the caregiver assisted the patient in coping with his or her medical condition and symptoms, the degree of patient-caregiver open communication about the patient's thoughts and feelings in regard to the patient's symptoms, the degree to which the caregiver knew the patient's thoughts and feelings about his or her symptoms, and the degree of caregiver contact with the patient.

Methods

Design

The researchers employed a repeated-measures, four-level (instructional sets: neutral baseline, imagine-self perspective-taking, imagine-patient perspective-taking, and self-report), randomized design with six sequences of instructional sets to explore the influence of different perspective-taking instructions on caregiver discrepancy scores. Counterbalancing controlled for potential order effects of a sequence of instructional sets on caregiver responses.

Sample

Written permission was obtained from the University of Manitoba Education/Nursing Ethics Board and the cancer agency access committee to recruit patients from an outpatient department in Winnipeg, Canada. Ninety-eight patient-caregiver dyads were recruited into the study. Patients were medically diagnosed with lung cancer (any stage and treatment); 18 years of age or older; able to speak, read, and write English; and well enough to participate with no evidence of medical confusion (i.e., patients who met the preset criterion of greater than or equal to 24 of 30 on the Mini-Mental State Examination [Folstein, Folstein, & McHugh, 1975]). Caregivers were identified by the patient as being primarily involved in the care of the patient in the home setting and able to speak, read, and write English. A research nurse obtained informed consent and demographic and disease- and treatment-related information from dyads in the home setting and randomized the dyads to one of six sequences of instructional sets that prompt caregivers to respond in different ways to patient treatment goals.

Measures

The **Memorial Symptom Assessment Scale (MSAS)** by Portenoy et al. (1994) is a four- and five-point Likert-type scale assessing 32 physical and psychological symptoms that

the investigators employed to capture patient and caregiver responses on frequency, severity, and distress for lack of energy and worrying. Higher values indicate greater severity, higher frequency, and more distress. The internal consistency was reported as 0.88 for highly prevalent physical symptoms previously, 0.83 for psychological symptoms, and 0.58 for low prevalence physical symptoms (Portenoy et al.).

Each caregiver was prompted to respond in four different perspective-taking conditions to patients' lack of energy and worrying as captured on the MSAS. The decision to target only two MSAS symptom items was based on the need to reduce subject burden for family caregivers who were asked to respond to four instructional sets on the MSAS. The selection of lack of energy and worrying was based on their reported clinical relevance and high prevalence in patients with lung cancer (Borthwick, Knowles, McNamara, O'Dea, & Stroner, 2003; Cooley, 2000; Ekfors & Petersson, 2004; Kurtz, Kurtz, Stommel, Given, & Given, 2000; Murray et al., 2002; Oh, 2004; Tishelman, Degner, & Mueller, 2000) as well as in family caregivers (Miaskowski, Kragness, Dibble, & Wallhagen, 1997; Redinbaugh, Baum, DeMoss, Fello, & Arnold, 2002). Each patient completed the abbreviated version of the MSAS in a room where the caregiver could not overhear the responses.

Procedures

The research nurse randomized the dyads to one of six sequences of instructional sets. The instructional set conditions were (a) neutral instructions baseline, where caregivers were neither encouraged or discouraged to engage in perspective-taking; (b) self-report, where caregivers reported on how they themselves thought and felt to test the effects of projection or assumed similarity in symptom experiences; (c) imagine-self perspective-taking, where caregivers identified their own thoughts and feelings as they imagined themselves with the patient's diagnosis and responded as if the symptom events were happening to them to test projection of their own hypothesized experiences; and (d) imagine-patient perspective-taking, where caregivers were encouraged to take the patient's perspective, imagine how the patient thinks and feels, and respond as the patient would. The neutral condition always came first, leaving the remaining three conditions to be counterbalanced ($3 \times 2 \times 1 = 6$). The instructions were adapted from those developed by Batson, Early, and Salvani (1997) based on the original instructions pioneered by Stotland (1969).

The block randomization procedure allowed the investigators to maintain an equal number of caregivers who responded to six sequences of ordered instructional sets: (a) imagine-patient perspective-taking, imagine-self perspective-taking, and self-report; (b) self-report, imagine-patient perspective-taking, and imagine-self perspective-taking; (c) imagine-self perspective-taking, self-report, and imagine-patient perspective-taking; (d) imagine-self perspective-taking, imagine-patient perspective-taking, and self-report; (e) self-report, imagine-self perspective-taking, and imagine-patient perspective-taking; or (f) imagine-patient perspective-taking, self-report, and imagine-self perspective-taking. This procedure was selected because not all subjects were available at onset of the study but were recruited consecutively over approximately a 12-month period. The first six caregivers enrolled in the study were viewed as one block of dyad members. Each subject

from this block of six was randomly assigned by the research nurse to receive one of six sequences of instructional sets. The research nurse assigned subjects by drawing the numbers 1, 2, 3, 4, 5, and 6 in any order as long as each block encompassed each number.

Analyses

To address the study's main question as to whether caregivers were able to achieve enhanced perceptual congruence when induced to take the imagine-patient perspective, discrepancy scores were calculated based on the absolute value of the difference between caregiver and patient responses on frequency, severity, distress, and total symptom experience (i.e., average of frequency, severity, and distress scores) for lack of energy and worrying in the respective conditions. Statistical comparisons of mean discrepancy scores were performed with repeated measures analyses of variance (ANOVA). Additional analysis included correlations to examine levels of agreement between patient self-reports and caregiver responses to different perspective-taking instructions. To address the second question, the researchers employed nonparametric tests of differences and correlational analyses to determine the extent and direction of separate relationships between patient and caregiver gender, the caregiver's personal history with cancer, and caregiving relationship factors and caregiver discrepancy scores. All tests for statistical significance were set at $p < 0.05$.

Findings

Of the 236 eligible dyads approached, a convenience sample of 98 dyads agreed to participate. The investigators aimed to recruit a study sample of 96 dyads to achieve a 94% power of detecting the main instructional set effect size of 0.20 for a degree of freedom that equals three with 95% confidence (D. Chateau, personal communication, September 17, 2002). Reasons for refusal were related to issues of parking, timing of the study, the belief that the study involved "too much reading," or the patient being "too sick" to participate. The mean Mini-Mental State Examination score for patients was 29 (SD = 1.59), indicating nearly perfect cognitive competence to reliably complete the surveys. The demographic and medical characteristics of patients and caregivers are presented in Table 1. The caregiving relationship characteristics appear in Table 2. The typical family caregiver was slightly younger than the patient, female, and retired or employed full-time. Most caregivers were married to and lived with the patient. Most stated they cared for the patient 18 months or fewer, frequently or always assisted the patient in coping with lung cancer and its symptoms, frequently or usually talked to the patient about his or her symptoms, and knew the patient's symptoms very well.

Tables 3–6 provide the mean scores and SDs for the total symptom experience and frequency, severity, and distress dimension scores based on dyad ratings in the perspective-taking conditions. Of note, caregiver neutral or natural estimates were significantly higher than patient self-reports for lack of energy and worrying on the total symptom experience scale and the frequency, severity, and distress scales. Correlations used for testing the associations between caregiver responses to different instructions and patient self-reports also are presented in Tables 3–6. The caregiver responses were related more closely to their imagine-patient responses than to their imagine-self or self-report responses across symptom conditions.

Table 1. Demographic and Medical Characteristics of Patients and Family Caregivers

Characteristic	Patients (N = 98)		Caregivers (N = 98)	
Age (years)				
X	65.51		59.07	
SD	11.29		12.59	
Characteristic	n	%	n	%
Marital status				
Single	2	2	4	4
Married or common-law	79	81	89	91
Divorced or separated	4	4	1	1
Widowed	13	13	1	1
Missing	–	–	3	3
Gender				
Female	44	45	59	60
Male	54	55	39	40
Education				
Elementary school or less	11	11	7	7
Some secondary or high school	32	33	32	33
Completed high school	14	14	12	12
Some community or technical college	9	9	12	12
Community or technical college	11	11	13	13
Completed university or less	20	20	19	19
Other or do not know	1	1	3	3
Tumor type				
Small cell	17	17	–	–
Non-small cell	77	79	–	–
Mesothelioma	4	4	–	–
Stage of diagnosis				
Limited	12	12	–	–
Extensive	5	5	–	–
Stage I	4	4	–	–
Stage II	10	10	–	–
Stage III	42	43	–	–
Stage IV	23	24	–	–
Unknown	2	2	–	–
Months since diagnosis				
0–9	48	49	–	–
10–36	39	40	–	–
> 36	11	11	–	–
Current treatment				
None	46	47	–	–
Chemotherapy	38	39	–	–
Radiotherapy	3	3	–	–
Chemotherapy and radiotherapy	9	9	–	–
Other	2	2	–	–
Past treatment				
None	13	13	–	–
Chemotherapy	16	16	–	–
Radiotherapy	21	21	–	–
Chemotherapy and radiotherapy	36	37	–	–
Other	12	12	–	–

Note. Because of rounding, not all percentages total 100.

Order Effects

Tables 3–6 provide the discrepancy scores in each of the instructional set conditions. First, one-way ANOVA was completed to determine the order effects of six instructional set sequences on discrepancy scores for lack of energy and

Table 2. Caregiving Relationship Characteristics of Patients and Family Caregivers

Characteristic	Patients (N = 98)		Caregivers (N = 98)	
	n	%	n	%
Receiving nursing care at home				
Yes	6	6	–	–
No	92	94	–	–
Weeks patient received nursing care at home				
\bar{X} = 2.35	–	–	–	–
SD = 14.8	–	–	–	–
Range = 0–104	–	–	–	–
Months of family caregiving				
0–9	50	51	48	49
10–36	32	33	33	34
> 36	16	16	17	17
Amount of caregiving assistance				
Never	1	1	1	1
Rare	3	3	6	6
Sometimes	11	11	11	11
Frequent	14	14	34	35
Always	69	70	46	47
Amount of communication about symptoms				
Never	2	2	1	1
Rare	5	5	6	6
Sometimes	12	12	23	24
Frequent	35	36	32	33
Usually	44	45	36	37
Amount of perceived knowledge of patient thoughts and feelings about symptoms				
Totally not at all	2	2	2	2
Not very well	2	2	5	5
Has some knowledge	16	16	16	16
Adequate	27	28	25	26
Very well	51	52	50	51
Amount of contact with patient				
Daily, I live with the patient.	85	87	83	85
Daily, I do not live with the patient.	6	6	9	9
Weekly, I do not live with the patient.	1	1	1	1
Less than weekly, I do not live with the patient.	6	6	5	5
Relationship to patient				
Wife	–	–	45	46
Husband	–	–	32	33
Daughter	–	–	9	9
Son	–	–	6	6
Brother	–	–	1	1
Friend	–	–	3	3
Other	–	–	2	2

Note. Because of rounding, not all percentages total 100.

worrying. No significant differences in discrepancy scores were demonstrated as a result of the sequencing effect.

Instruction Effects

Data were organized into specific instructional sets (neutral, imagine self, imagine patient, and self-report), and one-way

ANOVA was conducted to test the hypothesis that, in comparison to the neutral baseline measure, caregiver imagine-self perspective-taking, imagine-patient perspective-taking, and self-report instructions would make a difference in caregiver responses, with imagine-patient responses being most similar to patient responses on symptom experiences. For lack of energy, although discrepancies for the imagine-patient instructions were lower than scores for self-report and imagine self, they did not differ significantly from the discrepancies under neutral instructions for distress ($F[3, 267] = 10.202, p < 0.001$; total $F[3, 267] = 7.235, p = 0.001$). Of note, for lack of energy severity, no significant differences were found in discrepancy scores across the instructional sets ($F[3, 267] = 1.618, p = 0.192$). For lack of energy frequency, although the imagine-patient discrepancy scores were significantly lower than the discrepancy scores for the self-report condition, they were not significantly lower than the neutral and imagine-self discrepancy scores ($F[3, 267] = 4.991, p = 0.006$). For worrying, the discrepancy scores for the imagine-patient instructions were lower than the discrepancy scores for the self-report and imagine-self instructions, but they were not significantly lower than the discrepancy scores under the neutral condition for frequency ($F[3, 267] = 10.293, p < 0.001$) and distress ($F[3, 267] = 9.104, p < 0.001$). Although the imagine-patient discrepancy scores for worrying were significantly lower than those for imagine self, they were not different than those for the self-report and neutral instructions for severity ($F[3, 267] = 5.678, p = 0.002$; total $F[3, 267] = 11.275, p < 0.001$).

To investigate the effects of gender, caregiver personal history with cancer, and caregiving relationship factors on discrepancy scores in the neutral condition for lack of energy and worrying, correlational analysis resulted in few significant findings. Only the degree of open communication between the patient and caregiver was significantly correlated with the discrepancy score for worrying. As the amount of open communication decreased between the patient and caregiver about the patient's medical condition and symptoms, discrepancy scores increased for worrying ($\rho = -0.19; p = 0.02$). In addition, a trend was noted for more discrepancy by the caregiver on lack of energy when the patient and caregiver talked less with each other about the patient's illness experiences ($\rho = -0.15; p = 0.078$). No correlations were found among the discrepancy scores and gender, caregiver history with cancer, and other caregiver relationship factors.

Discussion

Building on previous work by Lobchuk (2001), the purpose of this study was to employ a counterbalanced, randomized design to control for order effects of different perspective-taking instructional sets on caregiver discrepancy outcomes and to test the hypothesis that imagine-patient instructions will prompt family caregivers to achieve more congruent estimates of patient symptom experiences. Across all randomized instructional set conditions, no order effects were found. In other words, the caregivers did not respond any differently to the imagine-patient perspective-taking prompt regardless of whether it was administered before or after the self-report and imagine-self instructional sets. With respect to patient-caregiver response comparability, this study's results corroborate earlier findings that suggested the reliability of an imagine-patient instructional set over the imagine-self

Table 3. Patient and Caregiver Mean Responses, Correlations, and Discrepancy Scores on Total Symptom Experience

Symptom and Instructions	N	\bar{X}	SD	Patient and Caregiver Instructions		Discrepancy Scores	
				Intraclass Correlation	p	\bar{X}	SE
Lack of energy							
Patient							
• Self-report	98	2.05	0.86	–	–	–	–
Family caregiver							
• Neutral	98	2.30	0.95*	0.63	< 0.001	0.63	0.05
• Self-report	98	1.53	0.98	0.19	< 0.001	0.97	0.08
• Imagine self	96	2.48	0.78	0.27	< 0.001	0.84	0.07
• Imagine patient	98	2.35	0.92	0.60	< 0.001	0.63	0.06
Worrying							
Patient							
• Self-report	98	1.76	1.07	–	–	–	–
Family caregiver							
• Neutral	98	2.29	0.95*	0.47	< 0.001	0.94	0.08
• Self-report	98	2.28	1.00	0.11	0.13	1.17	0.09
• Imagine self	96	2.75	0.88	–0.01	0.52	1.38	0.11
• Imagine patient	98	2.26	1.00	0.45	< 0.001	0.93	0.08

* A significant difference between patient self-report and caregiver neutral responses was $p < 0.05$, using Wilcoxon matched pairs signed rank tests.

prompt to encourage enhanced caregiver congruence on lack of energy and worrying (Lobchuk & Vorauer, 2003) (see Figure 1). In general, the self-oriented perspective-taking prompts resulted in increased discrepancy scores for worrying and lack of energy. The findings lend additional support to the immune neglect theory (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998), which predicts that when individuals forecast their reactions to future negative events, such as having cancer, they do not take into account psychological mechanisms that lower the duration of their negative response to living with the event. This is similar to the concept of response shift (Breetvelt & Van Dam, 1991), which occurs when caregivers fail to consider that they may reset their initial conceptualization of

how seriously they regard the negative event of living with cancer over time. Across both symptom conditions, imagine-patient discrepancy scores were not significantly lower in comparison to the neutral response condition as the baseline; therefore, no additional benefit seemed apparent in terms of increasing caregiver accuracy by reframing the question from the patient's perspective as opposed to a neutral question that neither explicitly encouraged or discouraged perspective-taking. However, the neutral baseline discrepancy scores for total symptom experience, frequency, severity, and distress for both symptoms were one unit or fewer out of a theoretical range of differences from 0–4 units. This suggests that a floor effect may have occurred that precluded a significant

Table 4. Patient and Caregiver Mean Responses, Correlations, and Discrepancy Scores on Frequency

Symptom and Instructions	N	\bar{X}	SD	Patient and Caregiver Instructions		Discrepancy Scores	
				Intraclass Correlation	p	\bar{X}	SE
Lack of energy							
Patient							
• Self-report	98	2.20	1.01	–	–	–	–
Family caregiver							
• Neutral	98	2.43	0.99*	0.44	< 0.001	0.80	0.08
• Self-report	98	1.66	1.00	0.04	0.35	1.13	0.09
• Imagine self	96	2.56	0.86	0.17	0.05	0.96	0.08
• Imagine patient	98	2.48	0.98	0.44	< 0.001	0.77	0.08
Worrying							
Patient							
• Self-report	98	1.88	1.13	–	–	–	–
Family caregiver							
• Neutral	98	2.45	0.99*	0.36	< 0.001	1.03	0.09
• Self-report	98	2.50	1.05	0.06	0.28	1.31	0.10
• Imagine self	96	2.98	0.86	–0.07	0.74	1.50	0.11
• Imagine patient	98	2.42	1.05	0.35	< 0.001	1.03	0.09

* A significant difference between patient self-report and caregiver neutral responses was $p < 0.05$, using Wilcoxon matched pairs signed rank tests.

Table 5. Patient and Caregiver Mean Responses, Correlations, and Discrepancy Scores on Severity

Symptom and Instructions	N	\bar{X}	SD	Patient and Caregiver Instructions		Discrepancy Scores	
				Intraclass Correlation	p	\bar{X}	SE
Lack of energy							
Patient							
• Self-report	98	1.75	0.74	–	–	–	–
Family caregiver							
• Neutral	98	1.94	0.87*	0.45	< 0.001	0.64	0.06
• Self-report	98	1.41	0.90	0.17	0.04	0.81	0.08
• Imagine self	96	2.16	0.75	0.36	< 0.001	0.65	0.07
• Imagine patient	98	2.19	0.89	0.43	< 0.001	0.69	0.07
Worrying							
Patient							
• Self-report	98	1.62	0.98	–	–	–	–
Family caregiver							
• Neutral	98	2.10	0.95*	0.46	< 0.001	0.84	0.07
• Self-report	98	2.08	0.97	0.17	0.04	1.01	0.09
• Imagine self	96	2.50	0.86	0.11	0.15	1.20	0.10
• Imagine patient	98	2.14	1.01	0.41	< 0.001	0.90	0.08

* A significant difference between patient self-report and caregiver neutral responses was $p < 0.05$, using Wilcoxon matched pairs signed rank tests.

downward adjustment in caregiver responses that more closely estimated patients' self-report. Future research should include a purposive sample with a range of discrepancy symptom scores as a baseline measure to determine the effects of an imagine-patient prompt for caregiver congruence on patient symptoms.

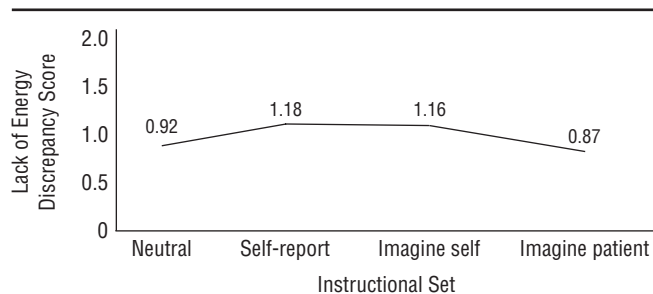
In regard to question two, the investigators found no overall covariate effects by patient or caregiver gender on discrepancy scores in the neutral conditions for lack of energy and worrying. This is corroborated by earlier findings that suggested gender does not play a role in influencing caregiver skill in assessing and reporting on patients' symptoms (Grassi et al., 1996; Hays et al., 1995; Sneeuw et al., 1997). In their review

of 10 studies of empathic accuracy, Graham and Ickes (1997) found no evidence to support the hypothesis that women are better than men in inferring the specific content of another's thoughts and feelings. They explained that although females tend to exhibit better decoding ability on nonverbal communication (e.g., facial expressions) than males, this difference tends to diminish when decoding incorporates spontaneous or leaky cues (i.e., a channel of communication that is more difficult to control than facial expressions such as verbal behavior cues emitted by the body, voice tones, brief micro-expressions, and discrepancies between visual and auditory nonverbal cues). In this study, perhaps the male caregivers drew on their recall of nonverbal and leaky cues to contribute

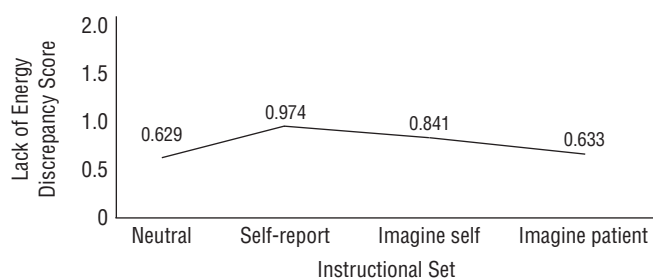
Table 6. Patient and Caregiver Mean Responses, Correlations, and Discrepancy Scores on Distress

Symptom and Instructions	N	\bar{X}	SD	Patient and Caregiver Instructions		Discrepancy Scores	
				Intraclass Correlation	p	\bar{X}	SE
Lack of energy							
Patient							
• Self-report	98	2.20	1.37	–	–	–	–
Family caregiver							
• Neutral	98	2.54	1.31*	0.61	< 0.001	0.82	0.09
• Self-report	98	1.53	1.30	0.20	0.02	1.44	0.11
• Imagine self	97	2.70	1.17	0.19	0.03	1.31	0.11
• Imagine patient	98	2.37	1.22	0.51	< 0.001	0.89	0.10
Worrying							
Patient							
• Self-report	98	1.78	1.42	–	–	–	–
Family caregiver							
• Neutral	98	2.31	1.16*	0.38	< 0.001	1.15	0.10
• Self-report	98	1.27	1.25	0.06	0.27	1.49	1.16
• Imagine self	97	2.74	1.18	0.02	0.43	1.63	1.30
• Imagine patient	98	2.21	1.25	0.40	< 0.001	1.13	1.03

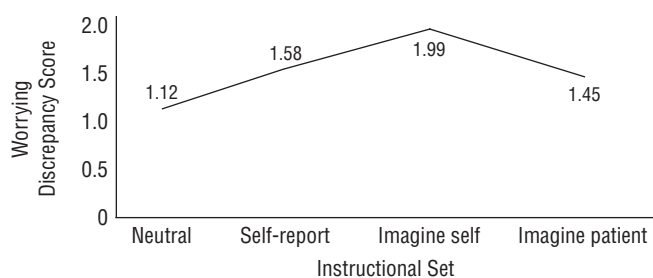
* A significant difference between patient self-report and caregiver neutral responses was $p < 0.05$, using Wilcoxon matched pairs signed rank tests.



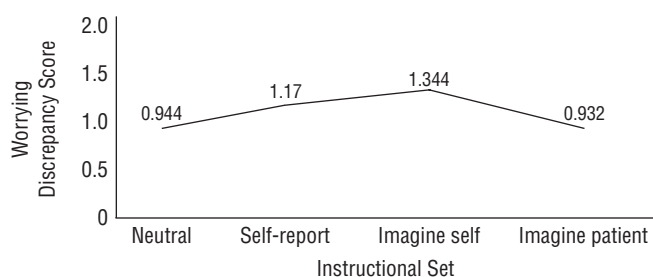
a. Heterogeneous cancer sample^a (N = 98)



b. Lung cancer sample^b (N = 98)



c. Heterogeneous cancer sample^a (N = 98)



d. Lung cancer sample^b (N = 98)

^a Results from Lobchuk's (2001) doctoral dissertation; noncounterbalanced design

^b Results from the current study as reported; counterbalanced design

Figure 1. Instructional Set Effects on Symptom Discrepancy Scores

to their ability to be no less or more accurate than female caregivers in their inference ability. This calls into question the commonly held assumption that female caregivers possess enhanced inference skills in understanding patient symptoms more accurately than male caregivers. The researchers also

tested the effects of caregiving relationship factors, with the degree of open communication being the only covariate to significantly influence caregiver discrepancy scores for worrying. The less the patient and caregiver talked about the patient's experience with worrying, the more discordant the caregiver was in his or her assessment. At first, the researchers were surprised that none of the other caregiver relationship factors had an impact on caregiver discrepancy ratings. However, this might be explained by the lack of variability in relationship factors because most caregivers were spouses who lived with the patient, provided considerable assistance to the patient, had frequent contact with the patient, and had a significant degree of knowledge about the patient's medical and symptom conditions. Furthermore, the correlations indicated that this study's voluntary sample of caregivers already appeared to engage in imagine-patient perspective-taking activities when they assessed and reported on patient symptom conditions.

Conclusions

This study's findings support previous results that family caregivers tend to overestimate patients' symptom experiences, albeit with a small amount of bias to rate the patients' symptoms higher than patients would themselves. These findings support earlier work by Lobchuk and Vorauer (2003) who reported that instructional sets that prompt caregivers to view patients' symptom experiences from a self-oriented viewpoint (actual or hypothesized) tend to produce responses that were most discrepant from patients' self-reports for lack of energy and worrying. When taking into account the raw discrepancy scores, the imagine-patient prompt promoted downward adjustments of caregiver responses that were related more closely to patient responses in comparison to the self-oriented prompts. However, the imagine-patient prompt did not appear to significantly improve caregiver congruence over the neutral instructions. This finding may be because the majority of the study's convenience sample of patients with lung cancer reported low levels of symptom experiences within the context of having family caregivers who engaged naturally in empathic perspective-taking activities to understand and manage the patient's symptoms, communicated openly with the patient about the symptoms, and provided frequent assistance to the patient. In general, the way that family caregivers responded to patients' symptoms appeared to be influenced by their genuine efforts to imagine the patient's viewpoint on symptoms experienced when coping with lung cancer. As a result, the caregivers' assessments closely matched the patient's self-reports regarding symptom experiences. On the other hand, for dimensions such as severity for lack of energy and worrying, as well as the total worrying experience, efforts by caregivers to imagine the patient's viewpoint seemed to be influenced by their own self-oriented experience with the symptoms. The literature reports that caregivers vicariously share in the emotional experiences of patients with cancer (Yates, 1999) or experience a mutuality in psychological distress with patients (Hodges, Humphris, & Macfarlane, 2005) that may cause difficulty for caregivers when differentiating between their own and the patient's psychological symptoms. Furthermore, caregivers' patient-oriented inferences might be influenced by their own caregiver burden, depression, or grieving (McPherson & Addington-Hall, 2003).

Nursing Implications

The results of this study have several clinical and research implications. First, as part of determining the level of caregiver skill in accurate monitoring and interpretation of patient symptoms, nurses should perform an evaluation of help-intended communication and perspective-taking activities by caregivers. Family caregivers who are in long-term relationships and report an open communication style with the patient are more likely to entertain a patient-oriented perspective that results in their reasonably accurate understanding of the patient's symptoms. Based on the empirical results, nurses should be cautioned against the use of imagine-self perspective-taking prompts that likely promote overestimates by caregivers of patient symptom experiences. Furthermore, caregivers usually have difficulty avoiding the influence of their own actual or hypothesized psychological states on their inferences of patient worrying.

In terms of research implications, further exploratory work is required to identify dyadic situations in which certain interpersonal conditions exist that moderate the effects of caregiver perspective-taking on perceptual congruence and patient symptom outcomes. Plans exist to investigate whether family caregivers who blame patients for having brought lung cancer on themselves because of smoking behaviors experience anger that can negatively affect dyadic communication. Ineffective communication may result in discordant estimates of what the patient is experiencing in the illness situation, leading to suboptimal symptom management. Additional investigation also is required to test the effects of induced perspective-taking on a wider range of psychological and physical symptoms experienced by patients with lung cancer.

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