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Impact of Patient Smoking Behavior on Empathic Helping by Family Caregivers in Lung Cancer

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Patients affected by stigmatizing diseases such as lung cancer describe harsh judgment and negative emotions from healthcare providers and their support networks who feel that they brought the condition on themselves from cigarette smoking (Cataldo, Slaughter, Jahan, Pongquan, & Hwang, 2011; Chapple, Ziebland, & McPherson, 2004; Gulyn & Youssef, 2010). To the best of the authors' knowledge, no published studies have systematically tested the impact of family caregiver (FC) judgment and negative emotions on empathic responses (i.e., being able to understand and convey understanding of the situation from a patient-oriented viewpoint) (Mikulincer, Shaver, Gillath, & Nitzberg, 2005) and helping behavior. Empathic FCs make good judgments and decisions that are critical in fostering patient comfort, adherence to treatment recommendations, satisfaction with daily care, and avoidance of costly hospital stays (National Comprehensive Cancer Network, 2011). Empathy and helping behaviors are hallmarks of quality care, but when they are challenged, caregiver confidence can be diminished, resulting in unsafe, poorly timed, and suboptimal care of the patient with lung cancer.

With increasing emphasis on prevention, personal responsibility or a tendency to blame the victim for their lung cancer becomes more significant in the eyes of healthcare professionals, friends and family, and even patients who smoke (Bayer, 2008; Stuber, Galea, & Link, 2008). Patient smoking is a contentious issue: Researchers have found that 65% of families blamed the patient for contracting lung cancer (Zhang & Siminoff, 2003). Spouses feel constrained when discussing hot topics like smoking out of respect for patient autonomy or avoidance of conflict (Badr & Taylor, 2006). Spouses also feel resentment and blame toward the patient even

Purpose/Objectives: To test the impact of patient smoking behavior on family caregiver judgments of responsibility, emotions, empathic responses, and helping behavior.

Design: Structural equation modeling.

Setting: Five oncology outpatient settings in Canada.

Sample: 304 dyads consisting of patients with lung cancer and their primary caregivers.

Methods: Self-report questionnaires, abstracted medical record data, confirmatory factor analysis, and structural equation modeling.

Main Research Variables: Smoking history, judgments of responsibility for controlling the disease, anger, pride, empathic responses, and helping behaviors.

Findings: The impact of patient smoking behavior on caregiver help was mediated by caregiver judgments of responsibility, affective reactions of anger and pride, and empathic responses by caregivers.

Conclusions: When patients continued to engage in smoking behavior, despite a diagnosis of lung cancer, caregivers tended to ascribe more responsibility and feel more anger and less pride in the patients' efforts to manage the disease, therefore placing caregivers at risk for less empathy and helping behavior.

Implications for Nursing: Caregiver blame and anger must be assessed, particularly when the patient with lung cancer continues to smoke. If caregiver judgments of blame and anger are evident, then an attribution approach is indicated involving a dialogue between the caregiver and the patient, with the aim of enhancing the caregiver's understanding of how negative attributions and linked emotions impact his or her ability to engage in empathic helping behaviors.

if the patient quit smoking before or at the time of diagnosis because they fear that the patient may relapse. When patients continue to smoke cigarettes, FCs can view the behavior as controllable by the patient and not functionally effective in altering illness outcomes.

Unexpressed feelings of frustration and anger toward the patient contribute to dysfunctional helping and communication patterns, resulting in discordant values and goals regarding the plan of care (Siminoff, Zyzanski, Rose, & Zhang, 2008; Zhang & Siminoff, 2003; Zhang, Zyzanski, & Siminoff, 2010) and diminished FC motivation to engage in empathy and helping behavior.

Caregiving is linked to helping behaviors—intentional actions taken by another person to improve the well-being or welfare of another individual by reducing or removing suffering (Davis, 1994; Schwartz & Bilsky, 1990). An integral process that drives caregiving and helping behaviors is a warm, nonjudgmental empathic stance (Batson, 1991; Mikulincer et al., 2005). An empathic stance involves engaging in “efforts to understand another person and efforts to behaviorally respond to the other person in the stressful situation in a supportive, caring manner as a means to diffuse interpersonal stress and maintain the relationship” (O’Brien, DeLongis, Pomaki, Puterman, & Zwicker, 2009, p. 19). When the FC is self-focused or overwhelmed with his or her own negative feelings, empathic responses and helping behaviors can be erratic, insensitive, or jeopardized when the FC distances him or herself from directly dealing with the pain or distress of others (Mikulincer et al., 2005). Alarming it appears that, from the described evidence, FC distancing, judgment, and anger toward the patient can be a harsh reality, particularly in smoking-related diseases with a poor prognosis such as lung cancer.

Theoretic Framework

The patient’s smoking behaviors may have a direct impact on the FC’s helping responses toward the patient. However, as study findings in the previous section suggest, the direct relationship between patient smoking cessation and FC helping is influenced by mediating factors, such as FC judgments of responsibility for the situation, emotions, and empathic responses. Mediating factors are variables that intervene between the independent variable (e.g., patient smoking cessation) and the dependent variable (e.g., FC helping behavior), and help to explain why the relationship between patient smoking cessation and FC helping behavior exists (Polit & Beck, 2004).

To help understand the interrelationships among the FC’s thinking, feeling, and behavioral responses toward the patient with lung cancer who continues to engage in tobacco

use, the authors turned to Weiner’s (1995, 2006) attributional theory. Attributional theorists focus on a person’s interpretations of attributions or beliefs about the cause of events or another person’s behavior, and how those attributions relate to one’s emotions and behaviors, such as helping (Goldstein, Adamson, Barby, Down, & Leigh, 2000). The authors speculated that many factors can impact FC helping (e.g., perceptions of “need” for assistance, emotions of love and affection, a desire to alleviate one’s own distress in seeing a loved one suffer). However, the authors focused on suggestive evidence that FC blame and anger are potent factors that impact the FC’s ability to empathize with the patient and engage in helping behavior in the context of lung cancer. In their meta-analytic review of 39 studies conducted mainly in a controlled laboratory setting, Rudolph, Roesch, Greitemeyer, and Weiner (2004) found consistent evidence to support that attributions of responsibility determine anger and sympathy, and those emotions directly influence helping.

According to Weiner’s (1995) attributional model (see Figure 1), individuals often engage in a process of attempting to explain or interpret the cause of or control over events or behaviors that are negative, unexpected, or important. In the current study, the patient’s smoking cessation efforts cause the FC to interpret the degree of patient control over the behavior. If the FC believes that the patient is not exercising adequate personal control over certain behaviors (i.e., not engaging in smoking cessation), the FC (a) attributes more responsibility, blame, or fault to the patient, (b) experiences more anger, annoyance, or aggravation, and less pride, satisfaction, or hope about behaviors viewed as controllable by the patient, and (c) is likely to respond more negatively with less empathic responses and limited helping behavior. For example, if the model shown in Figure 1 is followed, the spouse may ascribe a large degree of blame toward the patient because of the patient’s refusal to stop smoking cigarettes despite repeated physician warnings about the dangers of

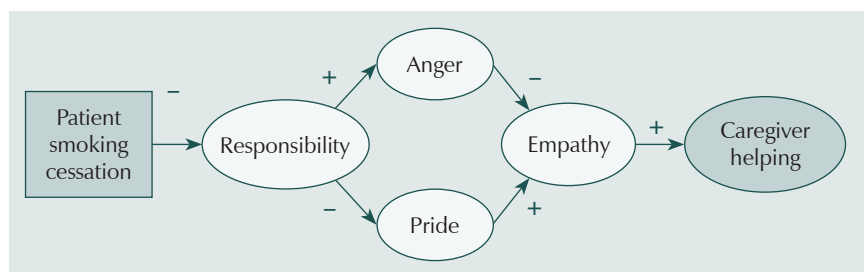


Figure 1. Hypothesized Model of Relationships Among Smoking, Attributional Reactions, and Empathic Behavior

Note. From *Judgments of Responsibility: A Foundation for a Theory of Social Conduct* (p. 148), by B. Weiner, 1995, New York, NY: Guilford Press. Copyright 1995 by Guilford Press. Adapted with permission.

tobacco use and effects on response to treatment. The spouse's attributions of responsibility, blame, or fault can then give rise to anger and less pride in the patient because of his or her refusal to engage in smoking cessation. The spouse's anger toward the patient in light of his or her continued smoking can result in the spouse curtailing empathic responses, which are linked to helping behavior.

In the context of the patient's smoking history and management of lung cancer, the authors tested the mediating effect of FC attributions and emotions on their empathic reactions and helping behavior. The hypothesis was that the less the patient engaged in smoking cessation behavior, the more the FC will ascribe judgments of responsibility, feel more anger and less pride, and be inclined to feel less empathy, therefore leading to less helping behavior toward the patient.

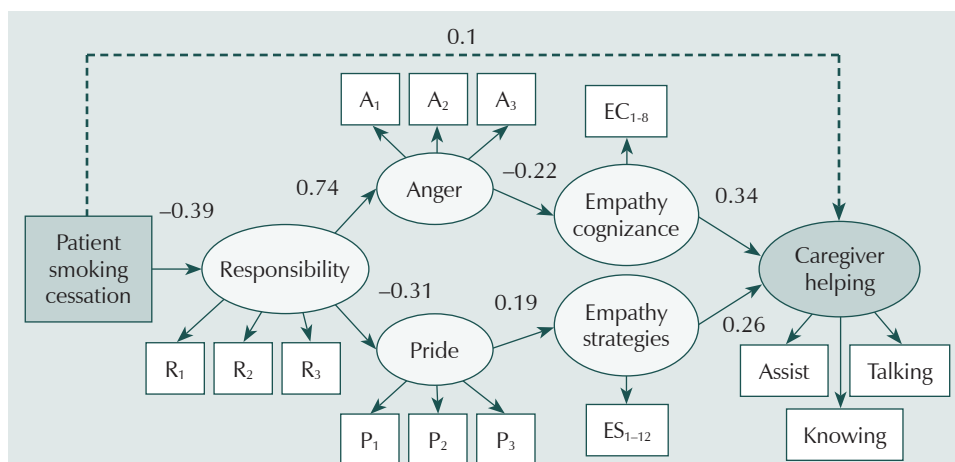
Methods

The authors employed a structural equation modeling (SEM) approach to test relationships among patient smoking and FC judgments of responsibility, emotions, empathic responses, and helping behavior toward the patient. The current article is a follow-up to published preliminary results from a sample of 100 pairs of patients and FCs (Lobchuk, McClement, McPherson, & Cheang, 2008). SEM combines factor and path analyses into one statistical methodology (Norris, 2001). SEM also involves the development and simultaneous testing of relationships among variables rather than a sequential analysis of relationships. The relationships among study variables are specified *a priori* and grounded in established theory. SEM also involves two types of variables: latent (construct) and observed or manifest (indicator) variables. Latent variables are unobservable or immeasurable variables that represent an underlying abstract construct. In the authors' hypothetical model, responsibility, anger, pride, empathy, and helping were latent constructs. Indicator variables are observed or measured variables that serve as indicators of an underlying construct or latent variable. In Figure 2, for example, responsibility is a latent variable with three

indicators of blame, fault, and responsibility. The authors hypothesized explanatory linkages among patient smoking cessation and FC judgments of responsibility, emotions, empathy, and helping behavior toward the patient, and then tested whether hypothesized relationships are consistent with Weiner's (1995, 2006) theory.

Sample

Five outpatient cancer clinics in Winnipeg, Manitoba, Canada, were selected for recruitment to provide a demographically diverse sample. Ethical approval was obtained from the Nursing and Education Ethics Review Board at the University of Manitoba, and approvals to access eligible participants were granted. From September 2005 to February 2009, participants were approached by letter of invitation from the unit clerk or the clinic nurse. Of 920 participants who initially were approached with a letter of invitation and an informational copy of the informed consent, 596 patients and FCs agreed to speak further with the research nurse or graduate nursing student. The authors accrued a convenience sample of 304 adult patients with lung cancer and 304 adult FCs, identified by the patients, who assisted them most with their illness and symptoms. Reasons for nonparticipation included either a wrong diagnosis or refusal because of parking issues, timing of the study, the study involved "too much reading," or the patient was "too sick" to participate. The sample of 304 dyads met the critical sample size of any number greater than 200 for sufficient statistical power to conduct SEM (Garver & Mentzer, 1999; Hoelter, 1983).



Note. Indicator questions for responsibility: R₁ blame, R₂ fault, R₃ responsibility; anger: A₁ anger, A₂ annoyance, A₃ aggravation; pride: P₁ pride, P₂ satisfied, P₃ hopeful; cognizance: EC₁₋₈ (8 indicators); empathy strategies: ES₁₋₁₂ (12 indicators)

Figure 2. Model Specification of Relationships Among Smoking, Attributional Reactions, and Empathic Behavior

Note. From *Judgments of Responsibility: A Foundation for a Theory of Social Conduct* (p. 148), by B. Weiner, 1995, New York, NY: Guilford Press. Copyright 1995 by Guilford Press. Adapted with permission.

Procedures

A research nurse or a student conducted mainly clinic or home interviews with participants to obtain informed consent and administer the Mini-Mental Status Examination (Folstein, Folstein, & McHugh, 1975) and questionnaires. If both the patient and FC scored 24 of 30 or higher, the research nurse or the student proceeded by answering any questions that participants had about the study. The participants then went to separate rooms in the home or in the clinic setting to read the questionnaire instructions. When interviews were conducted via telephone, participants located themselves in a private area of their home. They were instructed to mail in the informed consents that were provided to them in clinic with the letter of invitation. If they needed assistance, the research nurse or student would read the questionnaire items to participants. Participants were instructed not to discuss their responses until after the questionnaires were returned to the research nurse or the student. Most home interviews were conducted within 1–1.5 hours; clinic interviews were conducted within 45 minutes while participants waited to consult with the oncologist, and respective telephone interviews with participants lasted 45–60 minutes.

Measures

Sociodemographic, smoking behavior, and caregiving information were collected from reports by participants. Patients and FCs provided self-reports on an investigator-developed six-point scale regarding smoking behavior, with responses ranging from 1 (“I smoke regularly now, about the same as before finding out I [the patient] have lung cancer.”) to 6 (“I never smoked.”).

FCs provided self-reports on their attributional reactions and emotions on a series of three, five-point questions ranging from 0 (none) to 4 (a great deal or entirely) as respective single-item indicators of responsibility (responsibility, fault, blame), anger (anger, annoyance, aggravation), and pride (pride, satisfaction, hopeful). Those are the same indicators for the latent variables responsibility and anger that were employed in previous health psychology studies that tested Weiner’s theory (Graham, Weiner, Guiliano, & Williams, 1993; Reisenzein, 1986; Weiner, 1995). Of note, the authors developed indicators for pride (pride, satisfaction, and hope) that would not necessarily be construed in Weiner’s (1995, 2006) theory as positive emotions toward the patient, but rather positive caregiver-oriented evaluations (pride and satisfaction) or expectations of favorable outcomes (hope) that depend on the FC’s perception of patient efforts to successfully manage the disease. Based on clinical experiences, the authors of this article believed that the positive indicators were appropriate, as FCs

commonly evaluate patients’ achievements in their efforts to appropriately manage disease. Cronbach alpha estimates were 0.69 for responsibility, 0.87 for anger, and 0.78 for pride.

FC self-reports on their empathy toward the patient were captured on Long’s (1990) 20-item, five-point empathy scale that includes two subscales. The cognizance subscale captured FC empathic thoughts, defined as their level of understanding and awareness of the patient’s feelings, attitudes, and needs on eight five-point response items ranging from 0 (does not describe me very well) to 4 (does describe me very well). Possible scores range from 0–32. The strategies subscale captures empathic strategies or attempts that FCs undertake to understand the patient better on 12 five-point response items ranging from 0 (does not describe me very well) to 4 (does describe me very well). Possible scores range from 0–48. In a sample of 242 couples, the reliability estimates were 0.93 for husbands and 0.95 for wives (Long, 1990). The reliability of the total scale was 0.85, empathy cognizance subscale was 0.85, and empathy strategies subscale was 0.88 in this study’s sample of 304 FCs.

Regarding indicators for the latent variable FC helping responses, the authors asked FCs to respond to three investigator-developed, five-point single-item indicators, with higher scores indicating more helping behaviors, including the extent to which the FC assists the patient in coping with the medical condition and symptoms, the degree that the patient and caregiver talk openly about the patient’s thoughts and feelings about the medical condition and symptoms, and the degree to which the FC knows the patient’s thoughts and feelings about the medical condition and symptoms. Those items were previously employed in sociodemographic data forms (Lobchuk & Degner, 2002; Lobchuk, Degner, Chateau, & Hewitt, 2006; Lobchuk, McClement, Daeninck, & Elands, 2007) to capture qualities of the caregiving relationship. The Cronbach alpha estimate was 0.55 in the current study.

Data Analysis

Descriptive statistics (means and standard deviations) were calculated for sociodemographic and study variables. Pearson correlation analysis was conducted to determine bivariate associations between study variables. The authors conducted latent-variable SEM to test the hypothesized model in accordance with Weiner’s (1995, 2006) attributional theory, which guided the specification of relationships among variables. SEM was performed with Lisrel® 8.8 for Windows®. SEM allowed the authors to simultaneously relate latent (construct) variables from multiple indicator variables. That analysis involved a two-step process. First, confirmatory analysis was conducted to describe relationships between latent constructs and their indicator variables (measurement model). The

path model was evaluated by testing significance levels (with *t* tests) of direct and indirect effects specified in the measurement model. Standardized factor loadings were calculated for each indicator variable. The authors then performed SEM analysis to test the hypothesized relationships among all latent variables (structural model). Those analyses were performed on the covariance matrix with maximum likelihood method as the estimation method. Standardized regression coefficients for all paths were estimated. The authors assessed model fit by using the root mean square error of approximation (RMSEA) index (Steiger, 1990), comparative fit index (CFI), and Bentler and Bonett's (1980) non-normed fit index. An RMSEA of low values (from 0–0.06) indicates a well-fitting model (Hu & Bentler, 1999). The generally agreed on CFI is 0.9 or greater (Bollen, 1989). Bentler and Bonett's (1980) non-normed index can range from 0 (a fit that is no better than the null model) to 1 (perfect fit). The significance level for all statistical tests was set at 0.05. List-wise deletion resulted in the removal of one case.

Results

FCs (N = 304) had a mean age of 59 (SD = 12.7) and were female (66%), married (81%), and English-speaking (97%). The majority of FCs had a high school education or higher (61%), worked as a professional (36%), worked full- or part-time (48%), and had cared for the patient for 1–18 months (60%). Sixty-seven percent were the patient's spouse, lived with the patient (75%), and frequently or always assisted the patient with coping with the symptoms (72%). Twenty-two percent of FCs said that they used tobacco at the time of the interview, 50% were former smokers, and 28% never smoked. For patients, 22% were still smoking at the time of the interview, 71% were former smokers, and 7% never smoked.

The current study's report of patient smoking after diagnosis is comparable to the 13%–20% of patients with lung cancer who continued to smoke after diagnosis as cited by Browning, Wewers, Ferketich, Otterson, and Reynolds (2009). In addition, the current study's sample of FC age, gender, education, living arrangements, and being a spouse to the patient were comparable to those found in recent studies involving FCs of patients with lung cancer (Badr, Acitelli, & Taylor, 2008; Kramer, Kavanaugh, Trentham-Dietz, Walsh, & Yoner, 2010; Siminoff et al., 2008; Siminoff, Wilson-Genderson, & Baker, 2010; Zhang et al., 2010).

Descriptive Statistics

Respective mean scores for each indicator of the latent variables responsibility and anger all were less than one unit in a theoretic range of 0 (none) to 4 (high) (see Table 1). The one exception was for the indicator responsibility, which had a mean score of 1.8. The mean

Table 1. Study Measures and Factor Loadings

Measure	\bar{X}	SD	Factor Loading ^a
Responsibility toward the patient (N = 303)			
Blame	0.76	1.2	0.85 ^b
Fault	0.68	1.1	0.91*
Responsibility	1.8	1.63	0.36*
Anger toward the patient (N = 303)			
Anger	0.43	0.86	0.77
Annoyance	0.59	0.98	0.88
Aggravation	0.55	0.98	0.86*
Pride toward the patient (N = 303)			
Pride	3.14	1.13	0.69
Satisfaction	3.02	1.19	0.93*
Hope	3.01	1.21	0.59*
Empathy toward the patient (N = 304)			
Cognizance ^c	21.5	6.11	0.39*–0.75*
Strategies ^c	36.54	7.16	0.42*–0.75*
Helping behavior toward the patient (N = 304)			
Assist the patient	4.09	1.09	0.28
Talk with the patient	4.01	0.99	0.63*
Know the illness or symptoms	4.21	0.88	0.71*

* $p < 0.05$

^a Data indicate the correspondence between the indicator (observed or directly measured) variables and their corresponding latent (unobserved or not directly measured) variables.

^b The first factor loading was constrained to 1. Squaring the loading gives an r^2 measure of how much variability in the indicator variable was explained by the latent variable.

^c Cognizance loadings for 8 indicators and strategies loadings for 12 indicators all were significant.

scores for indicators of the latent variable pride were greater than three in a theoretical range of 0–4 units. FC self-report scores for empathy cognizance ($\bar{X} = 21.5$, SD = 6.11) in a theoretic range of 0–32 units, and strategies ($\bar{X} = 36.54$, SD = 7.16) in a theoretic range of 0–48 units indicated moderate engagement in empathic thoughts and strategies to understand the patient. Table 1 also provides the corresponding factor loadings for each indicator of latent variables in the model. In all instances, the factor loading for the first indicator was fixed to 1 for identification purposes (Field, 2000).

Table 2 shows zero-order correlations among all indicators. Focusing on significant correlations with indicators of FC helping behavior, the authors found the following results. The degree of talking openly with the patient was negatively correlated with FC annoyance and aggravation toward the patient, and positively correlated with FC pride, satisfaction, and hope in the patient's efforts to control the disease. FC empathic cognizance and strategies also were positively linked to the degree of open communication. The degree of

Table 2. Zero-Order Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Patient smoking cessation	–	–0.32 0	–0.34 0	–0.11 0.05	–0.24 0	–0.28 0	–0.3 0	0.18 0	0.25 0	0.18 0	0.12 0.05	–0.02 0.79	0.02 0.77	–0.01 0.84	0.13 0.03
2. Blame		–	0.78 0	0.34 0	0.5 0	0.56 0	0.51 0	–0.11 0.06	–0.2 0	–0.03 0.59	–0.26 0	–0.09 0.12	0.01 0.86	–0.08 0.17	–0.13 0.03
3. Fault			–	0.31 0	0.57 0	0.58 0	0.57 0	–0.16 0.01	–0.29 0	–0.11 0.06	–0.23 0	–0.14 0.01	0 0.96	–0.1 0.08	–0.16 0.01
4. Responsibility				–	0.19 0	0.22 0	0.24 0	0.05 0.36	0.07 0.22	0.07 0.21	–0.06 0.31	0.01 0.83	0 0.9	–0.02 0.77	0.07 0.22
5. Anger					–	0.67 0	0.65 0	–0.14 0.01	–0.2 0	–0.14 0.01	–0.27 0	–0.07 0.21	0.04 0.54	–0.09 0.1	–0.2 0
6. Annoyance						–	0.77 0	–0.22 0	–0.26 0	–0.17 0	–0.2 0	–0.15 0.01	–0.05 0.4	–0.13 0.02	–0.24 0
7. Aggravation							–	–0.2 0	–0.23 0	–0.19 0	–0.2 0	–0.09 0.11	–0.02 0.73	–0.14 0.01	–0.18 0.002
8. Pride								–	0.64 0	0.42 0	0.14 0.02	0.18 0	0.06 0.3	0.19 0.001	0.25 0.001
9. Satisfaction									–	0.55 0	0.16 0.01	0.16 0.01	0.1 0.08	0.23 0.001	0.24 0.001
10. Hopeful										–	0.15 0.01	0.15 0.01	0.1 0.09	0.21 0.001	0.09 0.14
11. Cognizant											–	0.32 0	–0.1 0.08	0.22 0	0.24 0
12. Strategies												–	0.03 0.63	0.29 0	0.27 0
13. Assistance													–	0.26 0	0.19 0.001
14. Talking														–	0.44 0
15. Knowing															–

N = 304

Note. Pearson's *r*; actual *p* value indicating level of significance of the correlation.

knowing patient thoughts and feelings about their condition and symptoms was negatively correlated with the amount of FC blame, fault, anger, annoyance, and aggravation toward the patient. Knowing the patient's thoughts and feelings about symptoms was positively associated with greater efforts by the patient to stop smoking cigarettes, FC pride and satisfaction toward patient's efforts to manage the lung cancer, and FC empathic cognizance and strategies.

Structural Model

Table 3 displays the path estimate, standard error, t value, and p values for the model. A test of the model resulted in the following fit estimates: RMSEA is 0.04, CFI is 0.97, and non-normed fit index is 0.97, and indicates a good fit. The direction of relationships is identical to the hypothesized model. The direct structural coefficient (0.1) between patient smoking cessation and caregiver helping was not significant. However, hypothesized relationships among patient smoking cessation, responsibility, anger, pride, empathy cognizance and empathy strategies, and helping behaviors were supported by the data, suggesting that the effect of patient smoking cessation on FC helping behavior was mediated by FC attributional responses, emotions, and empathic responses.

In examining the anger pathway in Figure 2, when patients engaged in less smoking cessation, FCs attributed more responsibility and felt more anger, which in turn was negatively associated with empathic thoughts (or cognizance) by the FC toward the patient. The positive correlation between FC empathic thoughts and helping behavior suggested that less empathic thoughts toward the patient resulted in less FC helping behavior. For the pride pathway, the less the patient engaged in smoking cessation, the more responsibility the FC ascribed toward the patient, which then was associated with less pride in patient efforts to manage the disease. The less pride the FC felt resulted in less empathic strategies by the FC, which was linked to less helping behavior. The model explained 26% of the variance in FC helping behavior.

Discussion

Smoking behavior by patients after a lung cancer diagnosis has a negative impact on their response to treatment, survival rate, and quality of life (Cataldo, Dubey, & Prochaska, 2010). However, smoking cessation guidelines (Fiore, Jaén, & Baker, 2008) and Cochrane reviews (Park, Schultz, Tudiver, Campbell, & Becker, 2008)

cited that quitting smoking is a complex matter. Fiore et al. (2008) and Bottorff et al. (2005) recommended additional research on the influence of social dynamics to enhance abstinence rates or tobacco reduction approaches. Partner support and the absence of partner criticism may be important in smoking cessation, but those behaviors are not easily changed by education and problem-solving interventions (Park et al., 2008). The authors' findings extend social support research by focusing on FC attributions and emotions in response to patient tobacco use.

The authors' aim was to examine relationships among FC attributional reactions, empathic responses, and helping behavior of FCs in response to patients' tobacco use. As guided by Weiner's (1995, 2006) theory, the results are based on a large sample of 304 dyads of patients with lung cancer and their FCs that allowed the authors to conduct rigorous SEM analyses of relationships among the study variables. Model fit estimates for the hypothesized model indicated that Weiner's (1995, 2006) attributional theory was an acceptable fit with the data. All path coefficients were significant and fully consistent with the hypothesized model, therefore providing additional evidence that the model fit the data well. Overall, robust support was found for Weiner's (1995, 2006) theory where the relationship between patient smoking cessation and FC helping were mediated by FC attributions, emotions, and empathy. More specifically, and of interest to clinicians in promoting supportive behavior by FCs, the authors found that the less the patient engaged in efforts to stop smoking, the more FCs tended to attribute blame, feel more anger, and be less empathic toward the patient.

That FCs desire mastery by patients to deal with their lung cancer is understandable. However, patients may feel pressured to cope in certain ways. A meta-analysis suggests that pressure may increase patient psychological distress (Petticrew, Bell, & Hunter, 2002). Kramer et al. (2010) found that family members who assert control have

Table 3. Covariances for the Study's Structural Model

Path	Model (Path) Estimate	SE	t
Patient smoking cessation and helping (direct)	0.1	0.02	1.37
Patient smoking cessation and responsibility	-0.39*	0.05	-6.64
Responsibility and anger	0.74*	0.04	11.27
Responsibility and pride	-0.31*	0.06	-4.53
Anger and empathy cognizance	-0.22*	0.07	-3.24
Pride and empathy strategies	0.19*	0.05	2.91
Empathy cognizance and helping	0.34*	0.06	2.83
Empathy strategies and helping	0.26*	0.05	2.58

* $p < 0.05$

SE—standard error

Note. The model (path) estimates are the standardized coefficients.

difficulty accepting the illness, and those who experience anxiety may behave in insensitive ways, such as insisting or making demands on the patient. As found in the current study, FCs' anger toward the patients in the context of smoking had a direct negative impact on FCs' empathic understanding of the patients' situation and FC helping behavior. What those findings suggest is a need for clinicians to consider interventions that target FC attributions related to perceived patient control over tobacco use to ameliorate feelings of anger, aggravation, or annoyance that have a direct negative impact on supportive responses such as empathy and helping behavior.

Limitations

Although the model had excellent fit estimates and support for hypothesized path relationships in accordance with Weiner's (1995, 2006) model, the predictor variables in the current study accounted for only 26% of the variance in helping outcomes. Other causal models may be more consistent with the data. Other than attributional reactions of responsibility and anger, non-attributional determinants (e.g., illness demands, FC skill or preparedness for the role, relationship qualities) may exist in predicting empathic helping responses by FCs. FCs may be inhibited to help based on a poor relationship with the patient, or they may feel too overwhelmed to help because of the poor prognosis associated with lung cancer; these were not measured in the current study but warrant additional investigation. The authors' supplementary analysis of variance did not find significant differences in FC anger as impacted by FC gender, religion, ethnicity, education level, relationship to the patient, degree of contact with the patient, employment status, or length of time caring for the patient. However, despite low reports of anger by FCs in the current study, the rigorous modeling analysis detected that FC anger was significantly influenced by FC attributions of responsibility, and FC anger had a significant direct impact on empathic thoughts and strategies by FCs. To date, evidence in the areas of FC anger toward patients dealing with smoking-related illness and how to help clinicians intervene with angry FCs remains limited (Coon, Thompson, Steffen, Sorocco, & Gallagher-Thompson, 2003; Julkunen, Gustavsson-Lilius, & Hietanen, 2009).

Despite acceptable reliability estimates for latent variables of responsibility, anger, pride, and empathic reactions, the Cronbach alpha estimate for helping behavior was low (less than 0.6). In exploring factor loadings on helping behavior, although talking and knowing loaded within an acceptable range (greater than 0.4) on helping behavior, assistance (0.28) did not. It may be that talking and knowing are kin concepts based on an underlying relational dynamic, whereas

assistance speaks more to functional or task-oriented behavior that has a more concrete nature. Low internal estimates for latent variable helping suggested that the current study's findings need to be evaluated with a more psychometrically sound measure to capture caregiver helping behavior. However, when the authors retained the three indicators for helping, the fit estimates indicated that the model had a good fit to the data. Because multiple indicators were used for each latent variable, the structural equation modeling analysis may have reduced the negative effects of measurement error or low internal consistency estimates (Hatcher, 1994).

Implications for Nursing Practice

In accordance with Weiner's (1995, 2006) theory, nurses should be able to change the helping behavior of FCs by altering their attributions and emotions in response to patient tobacco use. Clinicians need to take note that the helping behavior of FCs can be directly impacted by negative emotions, particularly if the FC believes that the patient is at fault for ongoing tobacco use despite a diagnosis of lung cancer. Because anger is directly related to empathy, which in turn is related to helping behavior, clinicians should pay attention to negative emotions that are expressed during clinical encounters with FCs.

In accordance with the current article's findings, as supported by Weiner's (1995, 2006) theory, anger is not only a reflection of how much responsibility is ascribed by the FC toward the patient for tobacco use, but also a risk factor for FC motivation to be empathic and help the patient to deal with cancer. Knowledge of the highly addictive nature of nicotine can be used to mitigate full responsibility or blame and anger being ascribed to the patient who engages in smoking. However, a delicate balance is in place that clinicians should heed in terms of not wanting FCs to remove the sense of responsibility by or a desire in patients to care better for their health. For instance, clinicians can alter attributions of blame toward the patient who craves nicotine by explaining to FCs that cravings are an autonomic, physiologic response in patients related to nicotine dependence. In addition, presenting the perspective to FCs that tobacco dependence is a chronic illness that involves relapses, repeated interventions, and multiple attempts to quit in time (Fiore et al., 2008) can help to mitigate or diminish blameful attributions and negative emotions, therefore boosting the motivation of FCs to engage in empathic helping responses. Such an attributional approach would help refocus the FC's attention on aspects of tobacco use that are realistically controllable by the patient (e.g., being aware of triggers to use tobacco), which can counter physiologic aspects that are less controllable (e.g., lifelong or periodic cravings)

and, therefore, mitigate blame and anger and enhance supportive, patient-oriented helping behavior.

The empathic stance used in motivational interviewing strategies for tobacco cessation (Lai, Cahill, Qin, & Tang, 2010) also can be taught to FCs so that they can appreciate a more effective patient-oriented understanding of tobacco dependence. Negative, critical, or forceful behaviors by FCs are not effective in cessation efforts or preventing relapses, but are more likely to contribute to diminishing patient self-efficacy or control in being able to engage in smoking cessation (Park et al., 2008). It might be powerful to include patients in dyadic counseling sessions where they are invited to share with FCs their perceptions of FC attributions and emotions and their influence on how patients deal with tobacco dependence. For instance, the patient may share that he or she interprets expressions of blame and anger by FCs as stemming from a belief that the patient is not trying hard enough, which in turn instills feelings of guilt and shame from a sense of ongoing failure to engage in tobacco cessation. In hearing the patient's perspective, FCs can appreciate how their attributions and emotions have had a key role in creating an unsupportive environment, which can be altered to influence patient expectancies of success, leading to a higher

possibility of successful attempts at tobacco cessation. Although the authors tested only the influence of anger on empathy and not the reverse, if FCs are taught how to empathically respond to the patient's viewpoint on motivations, perceived barriers, and self-efficacy to alter tobacco dependence, then their negative attributions and linked emotions may be diminished. That area of investigation is important and can advance knowledge on how to foster caring, empathic, and understanding contexts that promote self-efficacy in individuals as they engage in health behavior changes such as tobacco cessation (Fiore et al., 2008).

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