9

Examining Uncertainty and Interference with Cardiology Patients: Applying a Relational Turbulence Perspective in Health Contexts

AMANDA CARPENTER, KATHRYN GREENE, MARIA G. CHECTON, AND DANIELLE CATONA

Heart disease is the leading cause of death in the United States (Centers for Disease Control and Prevention [CDC], 2015). It is the leading cause of death for both men and women of most races and ethnicities, and approximately 600,000 people die of heart disease every year (CDC, 2015). Managing a heart condition can be difficult because of the significant lifestyle changes required to cope effectively with such a diagnosis. Owing to the severity of heart disease, understanding the psychosocial factors that contribute to successfully managing heart disease can lead to significant benefits.

Specific factors in social and romantic relationships have been documented as a risk factor to health (Burman & Margolin, 1992; House, Landis, & Umberson, 1988), especially in relation to chronic health conditions. There is evidence that marital stress worsens the prognosis for women diagnosed with coronary heart disease (Orth-Gomer et al., 2000). In fact, marital stress was associated with an almost three times increased risk for recurrent coronary heart disease events after controlling for other factors, including age, estrogen levels, education, smoking, diagnosis, diabetes, blood pressure, and triglyceride level (Orth-Gomer et al., 2000). In this study, work stress did not predict any recurrent events related to coronary heart disease (Orth-Gomer et al., 2000), highlighting the key role of marital stress rather than stress generally. In related research, cardiac patients who experienced high levels of stress from either family or work had further disease progression than did patients who experienced low stress generally (Wang et al., 2007), suggesting that added stress from relationships, combined with or aside from work, influenced patients managing a cardiac diagnosis. Further, loneliness and marital quality were both found to influence recovery and health outcomes of patients undergoing cardiac rehabilitation (Dafoe & Colella, 2016). The literature also suggests the psychological traits of the patient and spouse affect the patient's psychological well-being after undergoing coronary artery bypass

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

surgery (Ruiz, Matthews, Scheier, & Schulz, 2006). For example, higher presurgical neuroticism from the spouse predicted higher levels of patient depression, which has been identified as a risk factor for cardiac patients (Rozanski, Blumenthal, Davidson, Saab, & Kubzansky, 2005).

The findings from this review suggest that romantic partners, specifically spouses, can make it difficult for patients diagnosed with a cardiac condition to manage their disease effectively. This study draws upon the logic of relational turbulence theory (RTT; Solomon et al., 2016) to identify features of the illness experience that influence outcomes related to health management. Specifically, this study examines illness uncertainty and partner interference in health behavior as predictors of health-related topic avoidance and perceptions that one's health condition is a burden. Theoretically, the current study advances the literature on the RTT by examining health as a context in which a romantic partner's influence may be relevant to managing a chronic health condition. Pragmatically, this study identifies features of illnesses and romantic relationships that may serve as barriers to successfully managing a cardiac condition so that they can be targeted to improve treatment and adherence. In the sections that follow, we outline the RTT and explain how managing a heart condition is subject to a partner's influence. Finally, we report the results of a study designed to assess the ways in which romantic partners might influence cardiac patients' disease management.

RELATIONAL TURBULENCE THEORY AND HEALTH MANAGEMENT

RTT (Solomon et al., 2016) focuses on the challenges that arise when established relationships experience transitions. The theory highlights two features of close relationships, relational uncertainty and partner interference, that are heightened during transitions and predict heightened emotional, cognitive, and behavioral reactivity in relationships (e.g., Solomon & Knobloch, 2004; Solomon & Theiss, 2008). The RTT has been applied to health-related transitions in established relationships including depression (Knobloch & Knobloch-Fedders, 2010; Knobloch, Knobloch-Fedders, & Durbin, 2011), infertility (Steuber & Solomon, 2008, 2011), breast cancer (Weber & Solomon, 2008), type 2 diabetes (Leustek & Theiss, 2018), and weight loss (Theiss, Carpenter, & Leustek, 2016). Although previous applications of RTT in health contexts have examined how ambiguity about the relationship and disruptions to interdependence are implicated in health transitions, they have not considered how uncertainty and interference related to the illness itself may exacerbate experiences of relational turbulence. This study invokes the logic of RTT, but shifts the focus of uncertainty and interference to consider sources of ambiguity and goal disruptions stemming from the health condition. Accordingly, the sections that follow define illness uncertainty and

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

health interference and describe their anticipated associations with health outcomes of topic avoidance and perceived burden.

UNCERTAINTY AND INTERFERENCE AS MECHANISMS OF TURBULENCE

The first mechanism in RTT that is responsible for heightened reactivity in close relationships is *relational uncertainty*, which reflects a lack of confidence in people's perceptions of their relationship (Solomon et al., 2016). Relational uncertainty encompasses doubts about one's own involvement in the relationship (*self uncertainty*), the partner's involvement in the relationship (*partner uncertainty*), and the nature of the relationship as a whole (*relationship uncertainty*). Whereas relational uncertainty indexes ambiguity about relationship involvement, it does not capture ambiguity, confusion, or doubt about the broader context or external factors that might be influencing the relationship. In the context of acute or chronic illness, uncertainties about the diagnosis and prognosis of one's illness are likely to permeate the relational climate. This study extends the sources of uncertainty that may invoke relational turbulence to include *illness uncertainty*, which reflects people's inability to determine the meaning of illness-related events (Mishel, 1988).

The second mechanism in RTT that predicts reactivity during relationship transitions is the degree of influence between partners (Solomon et al., 2016). As part of establishing interdependence, relationship partners have an increasing amount of influence over one another's goals and routines. In some cases, a partner's influence can help to facilitate individuals' personal goals and routines, which is referred to as *facilitation from partners*. More often, creating interdependence leads to missteps, barriers, and disruptions to personal goals and routines, which is referred to as *interference from partners*. Most empirical tests of RTT have considered how mundane disruptions to personal routines in the execution of daily life contribute to frustration, irritation, and turbulence for romantic partners (e.g., Knobloch & Theiss, 2010; Solomon & Knobloch, 2001; Theiss & Knobloch, 2009). Coping with a health condition creates unique opportunities for a romantic partner to interfere with the treatment and management of one's illness. Thus, this study adds *health interference* as a unique source of partner interference that reflects a perceived disruption in health management caused by a relational partner (Greene et al., 2012).

Although the RTT has been applied to consider the potential for relational turbulence in a number of different health contexts (e.g., Leustek & Theiss, 2018; Knobloch, Knobloch-Fedders, & Durbin, 2011; Steuber & Solomon, 2008; Theiss et al., 2016; Weber & Solomon, 2008), these investigations have primarily considered how people's appraisals of the relationship both shape and reflect their experiences with a health condition. Given that

relationship mechanisms have been the main focus of this research, these studies overlook specific features of the health context that may be driving reactivity to interpersonal events. Focusing on illness uncertainty and health interference brings elements of the illness experience into the forefront as possible predictors of relational turbulence. Based on the logic of the RTT, we expect illness uncertainty and health interference to predict indicators of turbulence. We also expect illness uncertainty and health interference to covary, such that increased illness uncertainty is positively associated with higher health interference. The management of a chronic health condition provides increased opportunities for partner involvement in care and treatment, which can give rise to interference and raise questions about the impact of one's health condition on relationship quality. Therefore, our first hypothesis follows the logic of the RTT to suggest that illness uncertainty and health interference covary.

H1: Perceptions of illness uncertainty and health interference are positively associated.

MARKERS OF TURBULENCE IN THE CONTEXT OF CHRONIC ILLNESS

The RTT argues that relational uncertainty and interference from partners heighten people's emotional, cognitive, and communicative reactivity to relationship events (Solomon et al., 2016). Prior tests of the theory have linked these mechanisms to a variety of outcomes, including irritations (e.g., Solomon & Knobloch, 2004; Theiss & Knobloch, 2009), negative emotion (e.g., Knobloch & Theiss, 2010), jealousy (e.g., Theiss & Solomon, 2006), hurt (e.g., Theiss, Knobloch, Checton, & Magsamen-Conrad, 2009), perceived turmoil (e.g., Knobloch, 2007), indirect communication (e.g., Theiss & Knobloch, 2009), and topic avoidance (e.g., Knobloch & Carpenter-Theune, 2004). Notably, most of the outcomes that have been considered in previous tests of RTT examine variables that are important features of close relationships. In this study, we consider two markers of turbulence that are especially relevant to the management of chronic illness: topic avoidance and perceived partner burden.

Topic Avoidance as a Marker of Turbulence in Chronic Illness

Topic avoidance is an intentional decision to evade certain topics in relationships, either by an individual or both parties (Afifi & Guerrero, 1998). Several studies have documented a positive association between relational uncertainty and avoidance of communication about taboo topics or the relationship in general (e.g., Knobloch & Carpenter-Theune, 2004; Knobloch & Theiss,

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

2011; Theiss & Estlein, 2014; Theiss & Nagy, 2012). Several studies have also documented associations between relational uncertainty and topic avoidance in various health contexts. For example, Knobloch, Sharabi, Delaney, and Suranne (2016) found that relational uncertainty mediated the relationship between depressive symptoms and topic avoidance in couples in which one or both partners was experiencing depression. In addition, Donovan-Kicken and Caughlin (2010) identified sources of and reasons for topic avoidance in a sample of women diagnosed with breast cancer, and the association between topic avoidance and relationship quality was moderated by several factors stemming from uncertainty about avoidance, such as self-protection and social constraints. A dyadic study about cancer communication indicated that increased open communication between partners predicted less topic avoidance about the illness (Venetis, Magsamen-Conrad, Checton, & Greene, 2014). Interestingly, a study specific to cardiology patients found that patients perceived that they shared more information with their partner than they actually did share (Checton & Greene, 2014). Taken together, this evidence suggests that, like relational uncertainty, illness uncertainty should render people more reluctant to talk to their partner about their cardiac health because they may lack sufficient information about their condition to be able to discuss it with a partner, or they may worry about how their health condition affects the partner or the relationship. Therefore, we propose the following hypothesis:

H2: Perceptions of illness uncertainty are positively associated with topic avoidance about a cardiac condition.

Health interference should also increase people's topic avoidance when it comes to discussing their cardiac health with a partner. Some tests of RTT have indicated that interference from partners is associated with less open and direct communication about a variety of topics (e.g., Theiss & Knobloch, 2013; Theiss & Solomon, 2006), as well as being indirectly associated with increased topic avoidance about taboo topics such as sexual intimacy (e.g., Theiss & Estlein, 2014). Although tests of the RTT have tended to focus on the influence of partner interference in everyday goals and activities, some research has considered the impact of interference related to health goals. For example, in couples in which one partner was trying to lose weight, interference in weight loss behavior from a partner resulted in topic avoidance about weight loss (Theiss, Carpenter, & Cox, 2015). The health interference scale (Greene et al., 2012) has received limited empirical attention, but the logic of RTT provides guidance for hypothesizing about the association between health interference and topic avoidance. Individuals are unlikely to want to discuss their health condition with a partner who is frequently making it more difficult to manage their illness or accomplish health-related goals. Thus, we propose the following hypothesis:

H3: Perceptions of health interference are positively associated with topic avoidance about a cardiac condition.

Perceived Burden as a Marker of Turbulence in Cardiac Health

The second marker of turbulence that we consider as a downstream outcome of illness uncertainty and health interference is the perceived burden of managing the illness on one's partner. *Perceived partner burden* is defined as the degree to which chronically ill individuals feel that they are a hindrance to their romantic partner (Cousineau, McDowell, Hotz, & Hebert, 2003). We anticipate that illness uncertainty and health interference both influence perceived partner burden through their effect on health-related topic avoidance. Prior research demonstrates that topic avoidance can have negative consequences for individuals and their relationships, such as increased levels of depression and anxiety (Donovan-Kicken & Caughlin, 2011), as well as decreased relationship satisfaction and intimacy (e.g., Theiss & Estlein, 2014; Theiss & Nagy, 2012). In health contexts, topic avoidance can have additional consequences. For example, in a study of cancer patients, Venetis et al. (2014) examined cancer-related communication, partner burden, and topic avoidance. Results indicated that topic avoidance from both patients and partners predicted an increase in the patient's perceived level of partner burden, as well as reports of the partner's experienced burden. Therefore, our final hypothesis considers the association between topic avoidance and perceived partner burden as a marker of turbulence.

H4: Topic avoidance is positively associated with perceived partner burden.

METHOD

To examine these hypotheses, we conducted a cross-sectional study in which patients completed surveys while waiting for their appointment in a cardiology office. Participants were approached by members of the research team to participate in the study. Individuals were eligible to participate if they were (a) 18 years of age or older, (b) diagnosed with a heart condition, and (c) received assistance in managing their heart condition from another individual. Eligible cardiac diagnoses included coronary artery disease, arrhythmias, hypercholesteremia, hypertension, heart failure, congenital heart failure, and cerebrovascular disease.

Procedure

After patients signed in for their appointments and were in the waiting room, they were approached to participate. We excluded patients at the office for an initial consultation or for cardiac preoperative clearance for an unrelated

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

condition. After consenting to and before beginning the survey, participants were asked to complete the survey while thinking about a specific person who helped manage their cardiac condition. Based on this response, they received either a survey worded for a spouse or romantic partner, or a survey worded for another person (e.g., friend, child, parent, sibling, etc.)

Participants

We asked participants to think of a specific person who helped manage their care when completing the survey. Most participants completed the survey about their spouse (n = 161, 72.2%), while others completed the survey about their daughter (n = 33, 14.8%), friend (n = 11, 4.9%), son (n = 10, 4.5%), or sister (n = 5, 2.2%). For the purposes of this study, we utilized only spousal data for analyses, and these spouse-specific data (N = 161) are presented in this section and the results. Our sample included 112 males (69.6%) and 46 females (28.6%). Average age was 67.3 years (SD = 10.9, range = 47–93 years). Length of diagnosis ranged from 1 to 44 years (M = 11.3 years). Participants reported visiting the cardiologist between one and eight times annually. The average length of the relationship reported by participants was 36.4 years (SD = 13.6, range = 6 – 65 years). The majority of participants self-identified as Caucasian/white (n = 138, 85.7%), followed by African American/black (n = 3, 1.9%), Hispanic/Latino(a) (n = 2, 1.2%), multiracial (n = 2, 1.2%), and Middle Eastern (n = 2, 1.2%). Five participants did not report race or ethnicity. Reported education level ranged from college (n = 62, 38.5%), high school (n = 40, 24.8%), master's degree (n = 27, 16.8%), some college (n = 18, 11.2%), professional school [including law, medical, or PhD] (n = 6, 3.7%), to associate degree (n = 3, 1.9%).

Measures

Study variables used 5-point Likert-type scales. All scales underwent exploratory factor analysis (EFA). The scales used in the study have previously received validation in other health contexts, but never in a sample of cardiology patients. Therefore, the EFA (Varimax rotation) was employed for all model variables. Items loaded above .50, and all loaded onto a primary factor. Variables were computed by averaging responses. Information for each of the variables included in the model is presented in the following section.

Illness uncertainty. To measure illness uncertainty, we used a shortened version of Mishel's (1997) illness uncertainty scale. Instructions asked participants to indicate their agreement, on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree,* with an additional option, 0 = *not applicable*), with

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

statements about uncertainty regarding their heart condition. Higher scores indicated increased concerns about the illness and effective illness management. Sample items included "Because of the unpredictability of my heart condition, I cannot plan for the future" and "My symptoms continue to change unpredictably." Results suggested a one-factor scale (eigenvalue = 5.50, 34.40% variance explained, 10 items loading above 0.60 onto this factor, $\alpha = 0.90$, $M = 1.86$, $SD = 0.79$).

Health interference. To tap into the health interference construct, we used a modified version of Knobloch and Solomon's (2004) partner interference scale. Checton, Greene, Magsamen-Conrad, and Venetis (2012) and Greene et al. (2012) tailored the original Knobloch and Solomon (2004) scale to measure patient perceptions of health interference. Instructions asked participants how they viewed their heart condition, how the other person viewed the heart condition, and how participants viewed their relationship and heart condition. Items were measured on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*), with higher scores indicating increased interference from partners. Sample items include "My heart condition negatively affects my life" and "My heart condition interferes with the things my spouse likes to do each day." Results indicated a one-factor solution (eigenvalue = 5.01, 55.64% variance explained, nine items loading above 0.60, $\alpha = 0.89$, $M = 2.02$, $SD = 0.83$).

Topic avoidance. Measurement of topic avoidance was adapted from Donovan-Kicken and Caughlin's (2010) scale that was developed for health-specific perceptions of avoidance. Instructions asked participants what they avoided discussing with their spouse. Items were measured on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree,* with an additional option, 0 = *not applicable*). Higher scores indicated greater avoidance about a particular issue. Sample items included those pertaining to "sexual issues," "health issues," and "fear of dying." Results pointed to a one-factor solution (eigenvalue = 7.08, 41.67% variance explained, 16 items loading above 0.50, $\alpha = 0.91$, $M = 2.17$, $SD = 0.64$).

Perceived partner burden. Perceived partner burden was measured using items from the Cousineau et al. (2003) scale for medical patients. Instructions asked participants to think about their heart condition and how it affected their spouse. Items were measured on a 5-point scale (1 = *none of the time* to 5 = *all of the time*), with higher scores indicating greater perceptions of burden. Sample items included "I worry that [my spouse] is overextending him/herself in helping me" and "I feel guilty about the demands that I make on [my spouse]." Results indicated a single factor (eigenvalue = 4.65, 46.47% variance explained, eight items loading above 0.60, $\alpha = 0.89$, $M = 1.55$, $SD = 0.66$).

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

RESULTS

This section outlines analyses and results from the hypotheses and research question we presented. The section begins with a review of the preliminary analyses, followed by a description of the use of structural equation modeling to examine the research question.

Preliminary Analyses

To begin our analyses, we examined bivariate correlations between the variables in the model (see Table 9.1). Our first hypothesis asked about the relationship between illness uncertainty and health interference. Results indicated that uncertainty and interference were positively correlated, such that increased uncertainty was related to increased interference, $r = 0.64$, $p < 0.01$. Neither illness uncertainty nor health interference was associated with topic avoidance as predicted. Finally, topic avoidance and perceptions of burden were positively associated, such that increased topic avoidance was associated with increased perceptions of burden ($r = 0.16$, $p < 0.05$).

Substantive Analyses

To examine our remaining research question, we used structural equation modeling (SEM). Factor variances and covariances were freely estimated, and we used indirect latent factor scaling (i.e., fixing the factor loading of items within each latent factor). Results of the SEM revealed good model fit, χ^2 (56) = 109.30, $p < 0.05$, CFI = 0.94, RMSEA = 0.08 (see Figure 9.1 for final model with path coefficients). Consistent with H1, illness uncertainty and illness interference were positively associated. As predictors of topic avoidance, however, neither illness uncertainty (H2) nor illness interference (H3) was significantly associated with the avoidance of communication about one's health condition.

TABLE 9.1 *Zero-order correlations between model variables*

Measure	Uncertainty	Interference	Topic Avoidance	Perceptions of Burden
Uncertainty	—			
Interference	0.64**	—		
Topic Avoidance	0.12	−0.03	—	
Perceptions of Burden	0.59**	0.48**	0.16*	—

*$p < 0.05$. **$p < 0.01$.

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

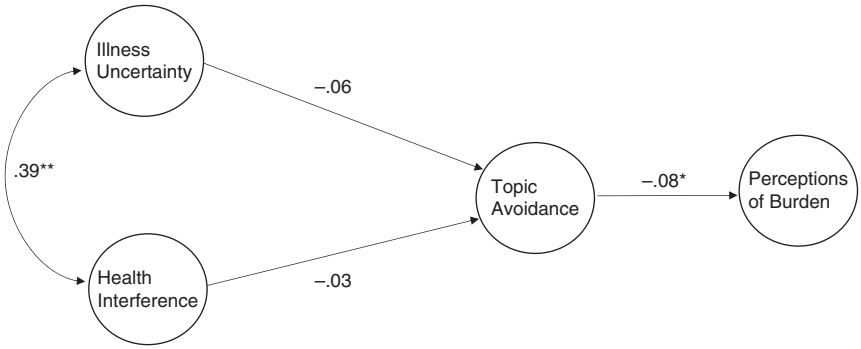

FIGURE 9.1 Final model with path coefficients.
*$p < 0.05$. **$p < 0.01$.

Finally, although H4 predicted a positive association between topic avoidance and partner burden, results indicated that avoiding communication about one's health condition decreased, rather than increased, perceptions of partner burden.

DISCUSSION

This study explored health-specific variables and their relationship to an indicator of relational turbulence, topic avoidance. Our results extend the assumptions of the RTT as it relates to health management and point to aspects of chronic illness that may serve as a barrier to managing a chronic health condition effectively. Our first hypothesis was supported, as illness uncertainty and health interference were positively associated. Neither our second nor third hypothesis was supported, because neither illness uncertainty nor health interference was associated with topic avoidance. Our fourth hypothesis found a negative association between topic avoidance and perceptions of partner burden, contrary to what we hypothesized. Results suggest that the modified mechanisms stemming from the logic of RTT may not be suitable for predicting markers of turbulence in an ongoing health management context. Although the model yielded a good fit overall, the main pathways linking illness uncertainty and health interference were not significant. With regard to application, these results point to topic avoidance as a significant factor that can hinder effective health management. The rest of this section discusses the implications of the results of this study, as well as its strengths, its limitations, and suggestions for future research.

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

Theoretical Implications

As a starting point, this research considered sources of illness uncertainty and types of health interference that impede conversations about health management with a relational partner. With regard to H1, illness uncertainty and health interference were positively correlated, indicating that within a framework of chronic health management, higher levels of uncertainty are related to higher levels of interference from a spouse. H2 and H3 predicted that illness uncertainty and health interference would be positively associated with topic avoidance. Although the model fit our data, neither illness uncertainty nor health interference significantly predicted topic avoidance, and the effects were in the opposite direction of what was predicted. We identify two possible explanations for the lack of association. First, the average relationship length for the couples in this study was 36.4 years; thus, given that these were established relationships, there might be few topics that patients are unwilling to discuss with their spouse. Second, perhaps patients are more motivated to communicate about their illness when they are trying to reduce uncertainty about their illness or more effectively coordinate their actions with a spouse. Theoretical perspectives on uncertainty management and uncertainty reduction point to information seeking as the primary means through which individuals reduce their uncertainty (Berger & Calabrese, 1975; Brashers, 2001); thus, it is possible that people are less likely to avoid conversations about this topic to the extent that they desire uncertainty reduction. Similarly, when a partner is regularly interfering in efforts to manage a health condition, more direct communication might be necessary to avoid misunderstandings and forestall disruptions. Additional research is needed to examine the potential for illness uncertainty and health interference to predict health outcomes in the context of chronic illness.

Our results also highlight a significant association between topic avoidance and perceptions of partner burden, although the effect was not in the predicted direction. We found that topic avoidance was negatively associated with perceived partner burden for cardiology patients, suggesting that less communication about managing their illness was related to decreased burden on the spouse. Although this finding is not what we expected, in hindsight it seems logical that individuals will feel less burdened by their partner's illness to the extent that the partner withholds information about their health. When individuals avoid discussing their health condition, partners are unlikely to feel burdened because they lack awareness of what the patient is going through. In fact, one explanation for this finding is that preventing partner burden might actually serve as a motivation for individuals to avoid communicating about topics related to their illness. In this way, topic avoidance may be a protective action designed to buffer a romantic partner from the stress and burden of co-managing the illness. This result also points to the potential

for bidirectional effects between these variables. Although we positioned topic avoidance as a mediator in our model based on evidence that the mechanisms of relational turbulence predict more avoidant communication behaviors (e.g., Knobloch & Carpenter-Theune, 2004; Theiss & Nagy, 2012), an alternative possibility is that partner burden is a more proximal outcome of uncertainty and interference that predicts topic avoidance. When relationship partners share the burden of managing illness, they are likely unable to avoid conversations about a partner's health condition. Thus, individuals may be less likely to avoid talking about a cardiac condition if they are willingly trying to help their partner manage the illness. Additional research is needed utilizing different types of designs to further explore the potential for bidirectional effects.

Practical Implications

The findings from this study also offer several practical implications for couples co-managing a chronic health condition. First, illness uncertainty and health interference were positively related, suggesting that romantic partners may struggle to collectively manage a chronic condition long term. One interpretation of this finding is that when people have ambiguity about a health condition, it can make it difficult for partners to identify the best ways to provide assistance or support. Consequently, partners might struggle to effectively coordinate their actions if they are unsure about what actions would be most appropriate or effective for managing the illness. An alternate interpretation is that when a partner is perceived as interfering in efforts to manage a chronic health condition, individuals may experience more questions about their ability to cope with their illness. Thus, illness uncertainty and health interference likely exert mutual influence on one another in the process of coping with a health diagnosis.

Our findings also point to interesting implications regarding the role of interpersonal communication in managing a chronic health condition. There tends to be a positive bias in people's assumptions about the role and impact of communication in relational and health contexts, with individuals endorsing the belief that open communication will result in closer relationships and more effective health management. Our results challenge this notion that increased openness will produce more relational and health benefits by showing that avoiding communication about one's health condition can mitigate the burden on partners to help manage a health condition. Particularly in the context of a chronic health condition, constant openness about the condition over the long term may contribute to chronic fatigue. Our findings suggest that although there are certainly times to promote openness about one's health, there are also times when it may be beneficial for the patient to exercise some restraint for the benefit of the relationship and/or the

https://doi.org/10.1017/9781108304344.010 Published online by Cambridge University Press

partner. The challenge, of course, is navigating the fine line between appropriate levels of openness and privacy. Additional research is needed to determine the point at which topic avoidance becomes problematic rather than beneficial.

Limitations

This study has some limitations. First, we asked for the perspective of only one partner in the relationship, specifically the patient with a cardiac condition. Although understanding how cardiac patients perceive their health condition and the support they receive from a relationship partner in managing their condition is crucial, it is equally important to understand how the partner of individuals with a chronic health condition might cope with that partner's illness. Helping a romantic partner manage the health condition can contribute to uncertainty about one's feelings toward a partner or the future of the relationship, and it can interfere in one's ability to pursue and achieve personal goals and routines. Dyadic data would be beneficial for providing insight into the experiences of both the patient and the partner when managing a chronic health condition. Moreover, dyadic data would make it possible to examine how partners collectively manage and cope with the illness.

Attempting to extend the RTT beyond the scope of the original theory is another limitation of this study. The RTT is concerned with features of relationships that are heightened during relationship transitions, specifically relational uncertainty and general partner interference. We attempted to extend the theory by examining sources of uncertainty and partner interference that stem from illness. Although it is likely that relationship and health processes work in tandem by affecting partners' perceptions of uncertainty, interference, and other communicative behaviors, our results suggest that the mechanisms in RTT may not have been effectively translated into variables specific to this health context. Future RTT studies should compare models with solely relationship or health variables to explore which process might be more pertinent.

Finally, a more robust study would examine these processes over time to observe how relationships and health are interconnected and evolve over the course of a chronic illness. Longitudinal studies would measure changes in the relationship and health management behaviors. Additionally, studying a relationship from initial diagnosis through the course of disease progression would extend the RTT literature. Our study examined patients in couples who had been married long term and generally diagnosed with their heart condition for an extended period of time. Perhaps couples who were in developing relationships or managing an initial diagnosis would experience increased turbulence over time. These are areas ripe for future research.

REFERENCES

Afifi, W. A., & Guerrero, L. K. (1998). Some things are better left unsaid II: Topic avoidance in friendships. *Communication Quarterly*, *46*, 231–249. doi: 10.1080/01463379809370099

Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interactions and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research*, *1*, 99–112. doi: 10.1111/j.1468–2958.1975.tb00258.x

Brashers, D. E. (2001). Communication and uncertainty management. *Journal of Communication*, *51*, 477–497. doi: 10.1111/j.1460–2466.2001.tb02892.x

Burman, B., & Margolin, G. (1992). Analysis of the association between marital relationships and health problems: An interactional perspective. *Psychological Bulletin*, *112*, 39–63. doi: 10.1037/0033–2909.112.1.39

Centers for Disease Control and Prevention (CDC). (2015). *Heart disease facts*. Retrieved from: www.cdc.gov/heartdisease/facts.htm

Checton, M. G., & Greene, K. (2014). "I tell my partner everything … (or not)": Patients' perceptions of sharing heart-related information with their partner." *Journal of Family Nursing*, *20*, 164–184. doi: 10.1177/1074840714521320

Checton, M. G., Greene, K., Magsamen-Conrad, K., & Venetis, M. K. (2012). Patients' and partners' perspectives of chronic illness and its management. *Families, Systems, & Health*, *30*, 114–129. doi: 10.1037/a0028598

Cousineau, N., McDowell, I., Hotz, S., & Hebert, P. (2003). Measuring chronic patients' feelings of being a burden to their caregivers. *Medical Care*, *41*, 110–118. doi: 10.1097/01.MLR.0000039832.32412.7D

Dafoe, W. A., & Colella, T. J. F. (2016). Loneliness, marriage, and cardiovascular health. *European Journal of Preventive Cardiology*, *23*, 1242–1244. doi: 10.1177/2047487316643441

Donovan-Kicken, E., & Caughlin, J. P. (2010). A multiple goals perspective on topic avoidance and relationship satisfaction in the context of breast cancer. *Communication Monographs*, *77*, 231–256. doi: 10.1080/03637751003758219

Donovan-Kicken, E., & Caughlin, J. P. (2011). Breast cancer patients' topic avoidance and psychological distress: The mediating role of coping. *Journal of Health Psychology*, *16*, 596–606. doi: 10.1177/1359105310383605

Greene, K., Magsamen-Conrad, K., Venetis, M. K., Checton, M. G., Bagdasarov, Z., & Banerjee, S. C. (2012). Assessing health diagnosis disclosure decisions in relationships: Testing the disclosure decision-making model. *Health Communication*, *27*, 356–368. doi: 10.1080/10410236.2011.586988

House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, *241*, 540–544. doi: 10.1126/science.3399889

Knobloch, L. K. (2007). Perceptions of turmoil within courtship: Associations with intimacy, relational uncertainty, and interference from partners. *Journal of Social and Personal Relationships*, *24*, 363–384. doi: 10.1177/0265407507077227

Knobloch, L. K., & Carpenter-Theune, K. E. (2004). Topic avoidance in developing romantic relationships. *Communication Research*, *21*, 173–205. doi: 10.1177/0093650203261516

Knobloch, L. K., & Knobloch-Fedders, L. M. (2010). The role of relational uncertainty in depressive symptoms and relationship quality: An actor-partner interdependence model. *Journal of Social and Personal Relationships*, *27*, 137–159. doi: 10.1177/0265407509348809

Knobloch, L. K., Knobloch-Fedders, L. M., & Durbin, C. E. (2011). Depressive symptoms and relational uncertainty as predictors of reassurance-seeking and negative feedback-seeking in conversation. *Communication Monographs*, *78*, 437–462. doi: 10.1080/03637751.2011.618137

Knobloch, L. K., Sharabi, L. L., Delaney, A. L., & Suranne, S. M. (2016). The role of relational uncertainty in topic avoidance among couples with depression. *Communication Monographs*, *83*, 25–48. doi: 10.1080/03637751.2014.998691

Knobloch, L. K., & Solomon, D. H. (2004). Interference and facilitation from partners in the development of interdependence within romantic relationships. *Personal Relationships*, *11*, 115–130. doi: 10.1111/j.1475–6811.2004.00074.x

Knobloch, L. K., & Theiss, J. A. (2010). An actor-partner interdependence model of relational turbulence: Cognitions and emotions. *Journal of Social and Personal Relationships*, *27*, 595–619. doi: 10.1177/0265407510368967

Knobloch, L. K., & Theiss, J. A. (2011). Relational uncertainty and relationship talk within courtship: A longitudinal actor-partner interdependence model. *Communication Monographs*, *78*, 3–26. doi: 10.1080/03637751.2010.542471

Leustek, J., & Theiss, J. A. (2018). Factors that shape cognitive and behavioral coping among individuals with type 2 diabetes: Features of illness versus features of romantic relationships. *Health Communication, 33,* 1549–1559. doi: 10.1080/10410236.2017.1384346

Mishel, M. H. (1988). Uncertainty in illness. *Journal of Nursing Scholarship*, *20*, 225–232. doi: 10.1111/j.1547–5069.1988.tb00082.x

Mishel, M. H. (1997). Uncertainty in illness scales manual. Available from M. Mishel at the University of North Carolina-Chapel Hill, School of Nursing.

Orth-Gomer, K., Wamala, S. P., Horsten, M., Schenck-Gustafsson, K., Schneiderman, N., & Mittleman, M. A. (2000). Marital stress worsens prognosis in women with coronary heart disease. The Stockholm female coronary risk study. *Journal of the American Medical Association*, *284*, 3008–3014. doi: 10.1001/jama.284.23.3008

Rozanski, A., Blumenthal, J. A., Davidson, K. W., Saab, P. G., & Kubzansky, L. (2005). The epidemiology, pathophysiology, and management of psychosocial risk factors in cardiac practice. *Journal of the American College of Cardiology*, *45*, 637–651. doi: 10.1016/j.jacc.2004.12.005

Ruiz, J. M., Matthews, K. A., Scheier, M. F., & Schulz, R. (2006). Does who you marry matter for your health? Influence of patients' and spouses' personality on their partners' psychological well-being following coronary artery bypass surgery. *Journal of Personality and Social Psychology*, *91*, 255–267. doi: 10.1037/0022–3514.2.255

Solomon, D. H., & Knobloch, L. K. (2001). Relationship uncertainty, partner interference, and intimacy within dating relationships. *Journal of Social and Personal Relationships*, *18*, 804–820. doi: 10.1177/0265407501186004

Solomon, D. H., & Knobloch, L. K. (2004). A model of relational turbulence: The role of intimacy, relational uncertainty, and interference from partners in appraisals of irritations. *Journal of Social and Personal Relationships*, *21*, 795–816. doi: 10.1177/0265407504047838

Solomon, D. H., Knobloch, L. K., Theiss, J. A., & McLaren, R. M. (2016). Relational turbulence theory: Explaining variation in subjective experiences and communication within romantic relationships. *Human Communication Research*, *42*, 507–532. doi: 10.1111/hcre.12091

Solomon, D. H., & Theiss, J. A. (2008). A longitudinal test of the relational turbulence model of romantic relationship development. *Personal Relationships*, *15*, 339–357. doi: 10.1111/j.1475–6811.2008.00202.x

Steuber, K. R., & Solomon, D. H. (2008). Relational uncertainty, partner interference, and infertility: A qualitative study of discourse within online forums. *Journal of Social and Personal Relationships*, *25*, 831–855. doi: 10.1177/0265407508096698

Steuber, K. R., & Solomon, D. H. (2011). Factors that predicted married couples' disclosures about infertility to social network members. *Journal of Applied Communication Research*, *39*, 250–270. doi: 10.1080/00909882.2011.585401

Theiss, J. A., Carpenter, A., & Cox, J. (2015, May). *Relationship characteristics that predict communication about weight loss and efficacy to achieve weight loss goals*. Paper presented at the annual meeting of the International Communication Association, San Juan, Puerto Rico.

Theiss, J. A., Carpenter, A. M., & Leustek, J. (2016). Partner facilitation and partner interference in individuals' weight loss goals. *Qualitative Health Research*, *26*, 18–30. doi: 10.1177/1049732315583980

Theiss, J. A., & Estlein, R. (2014). Antecedents and consequences of the perceived threat of sexual communication: A test of the relational turbulence model. *Western Journal of Communication*, *78*, 404–425. doi: 10.1080/10570314.2013.845794

Theiss, J. A., & Knobloch, L. K. (2009). An actor-partner interdependence model of irritations in romantic relationships. *Communication Research*, *36*, 510–536. doi: 10.1177/0093650209333033

Theiss, J. A., & Knobloch, L. K. (2013). A relational turbulence model of military service members' relational communication during reintegration. *Journal of Communication*, *63*, 1109–1129. doi: 10.1111/jcom.12059

Theiss, J. A., Knobloch, L. K., Checton, M. G., & Magsamen-Conrad, K. (2009). Relationship characteristics associated with the experience of hurt in romantic relationships: A test of the relational turbulence model. *Human Communication Research*, *35*, 588–615. doi: 10.1111/j.1468–2958.2009.01364.x

Theiss, J. A., & Nagy, M. E. (2012). A cross-cultural test of the relational turbulence model: Relationship characteristics that predict turmoil and topic avoidance for Koreans and Americans. *Journal of Social and Personal Relationships*, *29*, 545–565. doi: 10.1177/0265407512443450

Theiss, J. A., & Solomon, D. H. (2006). Coupling longitudinal data and multilevel modeling to examine the antecedents and consequences of jealousy experiences in romantic relationships: A test of the relational turbulence model. *Human Communication Research*, *32*, 469–503. doi: 10.1111/j.1468–2958.2006.00284.x

Venetis, M. K., Magsamen-Conrad, K., Checton, M. G., & Greene, K. (2014). Cancer communication and partner burden: An exploratory study. *Journal of Communication*, *64*, 82–102. doi: 10.1111/jcom.12069

Wang, H. X., Leineweber, C., Kirkeeide, R., Svane, B., Schenck-Gustafsson, K., Theorell, T., & Orth-Gomer, K. (2007). Psychosocial stress and atherosclerosis: Family and work stress accelerate progression of coronary disease in women. The Stockholm female coronary angiography study. *Journal of Internal Medicine*, *261*, 245–254. doi: 10.1111/j.1365–2796.2006.01759.x

Weber, K. M., & Solomon, D. H. (2008). Locating relationship and communication issues among stressors associated with breast cancer. *Health Communication*, *23*, 548–559. doi: 10.1080/10410230802465233