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Interpersonal communication apprehension, topic avoidance, and the experience of irritable bowel syndrome

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Abstract

Through the lens of the theory of inhibition and confrontation (Pennebaker, 1989), this study explored the relationships that interpersonal communication apprehension and topic avoidance in one's closest relationship share with the experience of irritable bowel syndrome (IBS). Specifically, an online survey that studied U.S. IBS-diagnosed and non-IBS subsamples examined person–partner communication apprehension, amount of overall topic avoidance, and reasons for topic avoidance in relation to four IBS experience variables. Communication apprehension displayed a particularly strong relationship with multiple aspects of the IBS experience, and a number of the communication avoidance variables varied according to IBS diagnosis. Implications for the theoretical understanding of interpersonal communication processes in the specific context of IBS and general chronic health conditions are discussed.

Irritable bowel syndrome (IBS) is a functional condition where patients suffer from gastrointestinal (GI) discomfort with no observable pathology (Gerson et al., 2006). A biopsychosocial perspective is the best vantage point from which to consider IBS because it posits that an individual's biology, actions, and cognitions combine to impact IBS, with early-life factors and one's social and physical surroundings representing additional influences (Lackner, 2005). Although behavioral and social components partially influence IBS, which also has a negative impact on sufferers' personal relationships (e.g., Day, Stuart, & Pretorius, 2001; Weinryb et al., 2003), no known research has examined how the presence and experience of IBS are associated with the communication that IBS-diagnosed individuals have with their closest relational partners.

Linking interpersonal communication in personal relationships with the presence and experience of IBS would (a) continue to expand scholarly knowledge of one's day-to-day experiences with this chronic, often unpleasant condition and (b) aid personal relationship scholars in improving interactions involving one relational partner who suffers from IBS in hopes of concurrently alleviating IBS symptom frequency and severity. To this end, this project employs the theory of inhibition and confrontation (Pennebaker, 1989), which connects the tendency to communicatively inhibit emotions and disclosures with health. Although most of the research that addresses these assumptions focuses on therapeutic writing as the primary form of disclosure, interpersonal communication could

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have as much of or even a greater positive association with one's health (Bootzin, 1997). This study thus explores this possibility by considering both communication apprehension (CA) and topic avoidance as interpersonal forms of inhibition in two ways: (a) in relation to the IBS experience of IBS-diagnosed individuals and (b) via comparison of IBS-diagnosed and non-IBS groups.

The experience of IBS

Chronic abdominal pain and disturbed bowel patterns that include bloating, pain, cramping, constipation, or diarrhea characterize the experience of IBS (Blanchard, 2005; Ringel, Sperber, & Drossman, 2001; Tkachuk, Graff, Martin, & Bernstein, 2003). About 14%–24% of females and 5%–19% of males have IBS (Tkachuk et al., 2003). Although many IBS patients experience minor symptoms, others' lives, relationships, and daily functioning are substantially compromised (Ringel et al., 2001).

Emerging research that consistently links a number of psychological and social variables to IBS symptom severity provides a preliminary basis for focusing on the experience of IBS from an interpersonal communication perspective. For example, stress about divorce, relationship problems, and caring for family members predicted sizable ongoing IBS symptom intensity (Bennett, Tennant, Piesse, Badcock, & Kellow, 1998). Indeed, this stress may be so important to the IBS experience that IBS symptoms can improve substantially or even disappear when an individual resolves major life stress and acquires effective life management skills (Bennett et al., 1998).

IBS-diagnosed individuals also felt that their families placed greater restrictions on them and that they experienced greater dissatisfaction, less acceptance, and less respect in their family relationships (Day et al., 2001); were more interpersonally sensitive (Locke, Weaver, Melton, & Talley, 2004); and had more interpersonal distress (Weinryb et al., 2003) compared with those in non-IBS control groups. Also, individuals with IBS were more self-conscious and reserved with others and less likely to seek out friendships and social interaction (Day et al., 2001). IBS-related friction and tension can also occur between IBS sufferers and their live-in partners and the significant others' irritation about patients' symptoms often exacerbated them (Dancey & Backhouse, 1993; Gerson & Gerson, 2005), meaning that IBS can also negatively impact sufferers' personal relationships.

These findings suggest a link between an IBS diagnosis and the absence of supportive relational partners, both in terms of the initial development of IBS and the hindrance of IBS symptom improvement (Day et al., 2001). The present research extends the comparison of IBS and non-IBS individuals to two forms of interpersonal communication avoidance: (a) CA as it applies to the interpersonal communication with one's closest relational partner and (b) the topic avoidance that occurs within this relationship. A single relational partner was this study's focus because an individual's emotional expression, which is a major component of the theory of inhibition and confrontation that frames this study, tends to be unique to a particular relational partner (Buck, 1993). The following section details how the theory of inhibition and confrontation can explain the associations between the IBS experience and communication avoidance.

The theory of inhibition and confrontation

The theory of inhibition and confrontation assumes that: (a) inhibition involves not disclosing important psychological experiences; (b) this inhibition increases stress; (c) which results in more health issues; conversely, (a) disclosing decreases inhibition; (b) reduced inhibition then decreases stress; (c) which results in improved health (Bootzin, 1997). In a review of experimental and correlational studies that test this theory, Pennebaker (1989) found that those writing about traumas had improved immune functioning compared with before the experiment and visited the university health center for illness significantly less after the experiment than the control group did, suggesting that talking with others or writing

about a trauma is linked to improved health. Inhibiting may be related to health problems because it involves physiological effort, such that inhibiting accompanies increases in autonomic nervous system and central nervous system (septal and hippocampal region) activities (Pennebaker, 1992).

Indeed, those who are not emotionally expressive were more likely to have asthma, headaches, early cancer death, and heart disease complications compared with those who express their emotions (Pennebaker, 1993). Nonetheless, the only known application of the theory to the experience of IBS found that IBS-diagnosed individuals assigned to write about a traumatic event did not evidence greater symptom decrease or life quality after 2 weeks compared with IBS-diagnosed control group participants (Siegel, 2003). One of Siegel's (2003) reasons for the lack of significant differences is that communicating with one's relational partner, who might also be a source of IBS stress, might be more beneficial than writing because there is the possibility of measurable relational changes based upon these disclosures.

Siegel's (2003) finding is in contrast with research that links alexythemia, which is a disorder where an individual has difficulty expressing emotion (Dumitrascu, 2006), with GI disorders. Indeed, IBS-diagnosed participants had higher levels of alexythemia compared with a non-IBS control group (Dumitrascu, 2006). Furthermore, individuals with functional GI disorders (FGIDs), including IBS, had significantly higher alexythemia levels than psychiatric patients (Porcelli et al., 2004), healthy controls, and those with inflammatory bowel disease (Porcelli, Taylor, Bagby, & De Carne, 1999). Thus, there is evidence that lack of disclosure can be related to the IBS experience. The next research step, discussed below, is to apply these theoretical principles to specific communication avoidance concepts that can occur within personal relationships.

CA

CA is a person's amount of anxiety or fear of interpersonal interactions, either anticipated or actual (McCroskey, 1977). The type of CA that is most applicable to interpersonal communication is person–partner CA, which is a "relatively enduring orientation toward communication with a given person" (McCroskey, 1984, p. 17). Person–partner CA is a reaction to relationship-specific situations and arises primarily from previous experiences and history with that particular relational partner (McCroskey, 1984). It is thus a fairly enduring interpersonal communication orientation within a relationship.

A positive relationship between CA and the IBS experience is predicted for two reasons. First, person–partner CA represents a stable tendency to inhibit one's communication with a relational partner, meaning that, according to the tenets of the theory of inhibition and confrontation, this type of CA should also be positively linked with IBS health outcomes. Second, because anxiety was strongly positively related to both CA (e.g., Daly, 1978; McCroskey, 1977) and IBS (e.g., Day et al., 2001; Gerson et al., 2006) in numerous studies, it is similarly logical to link CA to IBS symptom severity. The first hypothesis thus states:

> H1: *There is a positive relationship between person–partner CA and IBS symptom severity for IBS-diagnosed individuals*.

To further test the relationship between CA and IBS, this study also compares those who a physician has diagnosed with IBS at least 3 months ago and those who do not have IBS (i.e., a non-IBS control group). IBS patients exhibited more anxious behavior (Day et al., 2001) and were less assertive (Lackner & Gurtman, 2005) than non-IBS control groups. Thus, consistent with these findings and the logic of the first hypothesis, H2 states:

> H2: *IBS-diagnosed individuals report higher levels of person–partner CA than non-IBS individuals*.

Topic avoidance

When individuals deliberately decide not to share information about a specific topic with

their close relational partners, topic avoidance occurs (Afifi & Guerrero, 2000). Focusing on a single topic makes topic avoidance a bit more targeted and specific than person–partner CA. Because topic avoidance is a regularly occurring relational situation (Afifi & Guerrero, 2000) in multiple close relational contexts (e.g., Afifi & Burgoon, 1998; Afifi & Guerrero, 1998; Bevan, Stetzenbach, Batson, & Bullo, 2006; Guerrero & Afifi, 1995), it is particularly applicable as a potential communicative correlate of the IBS experience. Furthermore, although scholars view topic avoidance as an important and potentially beneficial aspect of close relationships, research findings consistently linked both partners' perceived use of topic avoidance with relational dissatisfaction (e.g., Caughlin & Afifi, 2004; Caughlin & Golish, 2002), and this association may extend to individual variables as well. Finally, and perhaps most importantly, both the theory of inhibition and confrontation and research linking self-disclosure with the improvement of physical and mental health (see Tardy, 2000, for a review) suggest that avoiding the discussion of certain topics or issues may be positively related to the experience of IBS.

Two specific aspects of topic avoidance are of interest here. The first is overall topic avoidance that involves how much an individual steers clear of one or more topics, such as relationships, negative life experiences, and sexual issues. Conceptualizing topic avoidance in this manner is consistent with previous research (e.g., Afifi & Guerrero, 1998; Caughlin & Afifi, 2004) and expands the theory of inhibition and confrontation, which tends to center on disclosure of traumatic personal experiences. Indeed, there are numerous parallels between participants' traumatic topics in tests of the theory of inhibition and confrontation and those included in overall topic avoidance, including relationship break-ups and divorce, alcoholism, and personal failures (Caughlin & Afifi, 2004; Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994; Pennebaker, 1989).

The second topic avoidance concept involves specific reasons or motivations to avoid a topic. These reasons, which Guerrero and Afifi (1995) initially identified and then Caughlin and Afifi (2004) refined, can generally be divided into four groups: (a) the self-protection motivation that is concerned with guarding against vulnerability or embarrassment, (b) those wherein protecting the relationship from threat or deterioration is foremost (i.e., the relationship protection and avoid conflict motivations), (c) those who consider the amount of closeness or potentially negative partner response (i.e., the lack of closeness and partner unresponsiveness motivations), and (d) the privacy motivation that focuses upon the fact that the topic itself is not for others to know about.

Topic avoidance has not yet been linked with psychological or physical health conditions, but a handful of studies examining related concepts in both cancer and IBS contexts do encourage the study of topic avoidance in the IBS context. Namely, Walsh, Manuel, and Avis (2005) found evidence of the presence of and concern with communication difficulty and avoidance with a romantic partner among women with breast cancer regarding the topics of the cancer itself, death, the future, feelings, and fears. Zhang and Siminoff (2003) similarly observed that cancer patients avoided communication about their conditions. Although IBS is not nearly as serious as cancer, the use of topic avoidance by IBS-diagnosed individuals could have a similar impact: the exacerbation of both partners' stress and mental anguish (Zhang & Siminoff, 2003).

In addition to the above preliminary findings regarding avoidance of communication in a cancer context, one known study has examined women's experience of IBS in relation to self-silencing (Ali et al., 2000). Self-silencing is conceptually related to topic avoidance in that it partially involves avoiding behaviors that might threaten or harm a close relationship. Ali and colleagues (2000) found that self-silencing levels were higher than normal for IBS-diagnosed participants and concluded that self-silencing might ultimately result in elevated stress levels, which would then exacerbate IBS. Thus, communication avoidance in multiple

forms appears to have a relationship with one's psychological and mental health.

When considering overall topic avoidance, consistent with the logic for H1, the findings above, and the theory of inhibition and confrontation, there should be a positive linear relationship between overall topic avoidance with one's closest relational partner and the experience of IBS. Furthermore, consistent with Ali and colleagues' (2000) finding that those with IBS used self-silencing more than normal, IBS-diagnosed individuals are also expected to engage in more topic avoidance than those who do not have IBS. Thus, H3 and H4 state:

> H3: *There is a positive relationship between use of overall topic avoidance and IBS symptom severity for IBS-diagnosed individuals*.
> H4: *IBS-diagnosed individuals report greater usage of overall topic avoidance than non-IBS individuals*.

When considering reasons for topic avoidance and the experience of IBS, females with breast cancer provided qualitative responses that suggested that they did not broach specific topics because they perceived that their partners were "emotionally unavailable and unwilling to discuss such issues" (Walsh et al., 2005, p. 86). Zhang and Siminoff (2003) similarly found that cancer patients avoided communication about their conditions to protect both their partner and themselves from emotional distress. Finally, the theory of inhibition and confrontation suggests that protecting one's physical, mental, and social well-being can be a motivation for active inhibition (Schwartz & Kline, 1995). Because these three reasons reflect the self-protection, partner unresponsiveness, and relationship protection motivations (Caughlin & Afifi, 2004; Guerrero & Afifi, 1995), H5 predicts that each will be more likely for IBS-diagnosed individuals than for non-IBS individuals:

> H5: *IBS-diagnosed individuals report greater (a) self-protection, (b) relationship protection, and (c) partner unresponsiveness motivations for topic avoidance compared with non-IBS individuals.*

Previous research does not provide guidance regarding how the remaining reasons for topic avoidance might vary according to IBS diagnosis. Thus, the study's sole research question explored these motivations:

> RQ: *Do IBS-diagnosed individuals differ from non-IBS individuals in the other reasons they report for avoiding topics?*

Method

Participants and procedures

I conducted this research in Orange County, California in the United States via an online questionnaire ($N = 261$). Individuals had to meet four conditions based partially upon the international Rome criteria (Thompson, Creed, Drossman, Heaton, & Mazzacca, 1992; also employed by Tkachuk et al., 2003) to be included in the IBS-diagnosed subsample ($n = 200$): (a) physician diagnosis of IBS at least 3 months ago; (b) IBS is their primary health problem; (c) no other GI disorder diagnosis, such as Crohn's disease or inflammatory bowel disease; and (d) not currently pregnant. A screening question asked about each criterion at the beginning of the survey. I removed those who responded in a manner that did not fulfill one or more of the requirements (including not responding to one or more screener items) from subsequent data analyses, leaving a final IBS-diagnosed subsample of 179.

Because there is no appropriate sampling frame available, I used a volunteer sample in this research, and the demographic characteristics of the IBS-diagnosed subsample generally reflect women of child-bearing age, who are the group that are most likely to be diagnosed with IBS (Levy, Cain, Jarrett, & Heitkemper, 1997). Physicians had diagnosed most IBS-diagnosed participants with IBS over 5 years ago ($n = 71$; 3–5 years ago, $n = 37$; 1–3 years ago, $n = 46$; 3–6 months ago, $n = 12$; 6 months to 1 year ago, $n = 13$).

Of the participants, 80 said that diarrhea was their most predominant IBS symptom, with 61 reporting abdominal bloating and pain and 38 stating constipation.

The survey asked the non-IBS subsample ($n = 61$) if their physician had diagnosed them with IBS at least 3 months ago. If they answered yes, the survey automatically directed them to the remaining IBS items. Two individuals in the non-IBS subsample reported that they had been diagnosed with IBS at least 3 months ago but indicated that IBS was not their primary health problem, which eliminated them, along with 7 non-IBS subsample participants who did not answer the IBS screener item, from the final non-IBS subsample (final $n = 52$).

The full final sample was predominantly female, White/Caucasian, heterosexual, and averaged 34 years of age. Participants' selected relational partners averaged 36 years of age and were predominantly male and White/Caucasian (see Table 1).[1] Their close relationships averaged just over 10 years in length ($SD = 119.93$, range = 1 month to 46 years) and included spouses ($n = 193$, 47%), romantic partners/fiancées ($n = 54$, 21%), friends ($n = 13$, 5%), parents ($n = 5$, 2%), a sibling ($n = 1$, .4%), and a relationship termed "other" ($n = 1$, .4%).

All participants completed the survey via SurveyMonkey, a secure Web-based survey program. Internet data collection is beneficial for studies that seek specialized populations (Best & Krueger, 2004). I recruited the IBS-diagnosed subsample primarily via an IBS bimonthly e-mail newsletter distributed through the Web site HelpforIBS.com. The following online message boards were used to recruit additional IBS-diagnosed participants: IBSgroup.org's IBS Self Help and Support Group, DailyStrength.org's Irritable Bowel Syndrome community, and HealingWell.com's IBS message board. When required, I obtained message board moderator permission before posting study information. For non-IBS subsample recruitment, I sent e-mails with the survey link and a short study description to social and professional networks and also asked these email recipients to forward the survey information on to their social networks. Data collection spanned 12 days for the IBS-diagnosed subsample and 5 days for the non-IBS subsample.

Upon entering the online survey and reading and agreeing to the consent form, the survey informed IBS-diagnosed participants that the study was concerned with their health and communication behaviors. The survey told non-IBS participants that the study's goal was to examine their interpersonal communication patterns in the last month and asked all participants to think of the one individual in their lives with whom they were closest. The survey defined "closest" as:

> An individual who knows a lot about you and with whom you feel most comfortable being around. In addition, this individual should be the relational partner in your life who you share your positive AND negative experiences and interactions with.

Once participants completed the survey, which took approximately 10–15 min, they could provide their e-mail address, which the survey program did not link with their survey responses. If they entered their email address, they received a US$5.00 Amazon.com gift card within 1 week of completing the survey. About 152 of the 200 IBS-diagnosed participants and 47 of the 61 non-IBS participants provided their e-mail addresses for compensation.

Measures

The IBS experience. Because self-report is an established and recommended method of measuring IBS symptoms (Tkachuk et al., 2003), the survey solicited ratings of participants' own IBS symptoms in the last month in four ways. First, three items adapted from Blanchard and Schwarz's (1988) IBS symptom severity measure each assessed abdominal pain severity, abdominal

1. Thirty-eight participants did not complete the demographic/relationship items, which were at the end of the survey.

Table 1. *Demographic and relational information by subsample and overall*

	IBS sample	Non-IBS sample	Overall
Sample size			
N	179	52	231
Participant gender			
Female	132	45	177
Male	9	6	15
Partner gender			
Female	21	12	33
Male	120	39	159
Participant age			
Mean	36	32	35
Standard deviation	11.64	9.26	11.24
Range	18–80	21–61	18–80
Partner age			
Mean	39	33	37
Standard deviation	12.7	9.26	12.19
Range	19–78	22–65	19–78
Participant ethnicity			
Asian	1	0	1
Bi-multiracial	2	2	4
Black/African American	2	0	2
Hispanic	2	3	5
Native American	1	0	1
White/Caucasian	133	46	179
Other	0	1	1
Partner ethnicity			
Asian	1	0	1
Bi-multiracial	1	0	1
Black/African American	3	1	4
Hispanic	4	1	5
Native American	0	0	0
White/Caucasian	132	46	178
Other	0	4	4
Participant sexual orientation			
Bisexual	6	0	6
Heterosexual	129	50	179
Homosexual	4	2	6
Don't know	1	0	1
Type of relationship			
Friend	6	7	13
Parent	4	1	5
Romantic partner/fiancée	48	6	54
Spouse	82	37	119
Relationship length			
Mean in months	144	89	126
Standard deviation	125.15	96.05	119.93
Range	1–552	3–408	1–552

tenderness, and diarrhea (1 = *not a problem*, 5 = *debilitating*). Second, participants reported the number of days (i.e., more than half the day) they spent in bed due to IBS, including hospital stays, and the number of physician visits for IBS (Broadhead, Blazer, George, & Tse, 1990). Previous GI research has used both of these items (e.g., Drossman et al., 2000). Third, Bennett and colleagues' (1998) measure assessed IBS frequency and severity (i.e., "Please characterize your IBS abdominal symptom frequency in the past

month"; 1 = *not a problem*, 4 = *occurred almost every day or daily*). Finally, Crane and Martin's (2003) five-item beliefs about IBS scale measured IBS symptom impact on participants' daily lives (e.g., "How much disruption in the last month to your daily life was caused by bowel symptoms?" 1 = *not at all*, 7 = *a great deal*).

I conducted data-reduction techniques that employed each of the IBS items via an exploratory principal axis analysis with oblique rotation, which was chosen for two reasons: (a) none of these scales are yet well established in the IBS literature and (b) examination of the content of the items suggested that there might be factors that included items from different scales. Criteria for factor selection included a .55 primary loading with all other loadings under .45, an eigenvalue of at least 1, a minimum of two items per factor, and a reliable Cronbach's alpha.

Three factors initially emerged. The first (eigenvalue = 5.35, 44.6% of the variance explained) included two items assessing abdominal pain and tenderness severity from Blanchard and Schwarz's (1988) scale and the abdominal symptom frequency and severity items from Bennett and colleagues (1998) and was labeled *IBS abdominal difficulty* ($M = 3.13$, $SD = 0.63$, Cronbach's alpha measure of reliability [α] = .76). Factor 2 (eigenvalue = 1.41, variance explained = 11.7%) included the three bowel symptom items from Crane and Martin (2003) and was labeled *IBS bowel difficulty* ($M = 4.12$, $SD = 1.82$, $\alpha = .91$). The final factor (eigenvalue = 1.18, variance explained = 9.8%) included two items: (a) days spent in bed ($M = 1.76$, SD = 3.96, range = 0–30 days) and (b) number of doctor visits due to IBS symptoms ($M = 0.77$, $SD = 1.77$, range = 0–20 visits), but the scale was not reliable ($\alpha = .59$) so I examined these items separately in data analyses. Thus, I reduced the data to the above four distinct IBS experience variables and standardized item responses to *z* scores because item response range varied within factors.

CA. McCroskey's (1982) dyadic/interpersonal subscale from the widely used Personal Report of Communication Apprehension (PRCA–24) measure assessed CA for all participants. This subscale originally had six items, but I excluded one item found to introduce error (Levine & McCroskey, 1990). I adapted the scale (1 = *strongly disagree*, 7 = *strongly agree*) in two ways to reflect recent interactions: (a) the survey prompted participants with the phrase "While participating in conversations with my partner in the last month. . . " and (b) I changed items to the past tense (e.g., "I felt very nervous"; "I was very calm and relaxed"—recoded). Higher values indicate greater person–partner CA ($M = 3.14$, $SD = 1.89$, $\alpha = .83$).

Topic avoidance. Guerrero and Afifi (1995) developed a 17-item, 7-point, bipolar response measure that Caughlin and Afifi (2004) later expanded that assessed topic avoidance. The items (e.g., "I avoid having in-depth conversations about my feelings and beliefs"; "I avoid discussing drinking or partying with my partner") included topics such as politics, household rules, relationships, beliefs and behaviors, and things the participant has failed at. Higher values indicate more topic avoidance ($M = 2.39$, $SD = 1.18$, $\alpha = .93$).

Reasons for topic avoidance. Caughlin and Afifi's (2004) 24-item reasons for avoidance 7-point, bipolar response scale measured reasons for topic avoidance (1 = *strongly disagree*, 7 = *strongly agree*). I conducted a confirmatory factor analyses (CFA), which requires unidimensional items to be face valid and to be similarly correlated with one another as well as with items from external scales (Hunter & Gerbing, 1982).[2] CFA results

2. I initially considered these five factors as two second-order factors: one a self-focused reason that included the self-protection, lack of closeness, privacy, and conflict avoidance motivations, and the second a partner-focused reason that included the relationship protection and partner responsiveness reasons. Brown (2006) recommended first examining first-order correlations between factors for patterns consistent with substantive theory and logic. In other words, correlations

confirmed the scale's existing factor structure (comparative fit index [CFI] = .96, root mean square error of approximation [RMSEA] = .06). Five items each measured self-protection (e.g., "I might get hurt"; $\alpha = .90$, $M = 3.18$, $SD = 1.72$) and partner unresponsiveness (e.g., "My partner is controlling of my behavior"; $\alpha = .85$, $M = 2.85$, $SD = 1.53$). The relationship protection variable included four items (e.g., "I want to protect my relationship with my partner"; $\alpha = .90$, $M = 3.91$, $SD = 1.88$). Two items each reflected privacy (e.g., "I want to keep my privacy"; $\alpha = .81$, $M = 2.53$, $SD = 1.61$), lack of closeness (e.g., "I am not emotionally close to my partner"; $\alpha = .80$, $M = 1.96$, $SD = 1.38$), and conflict avoidance (e.g., "I want to avoid conflict"; $\alpha = .85$, $M = 3.71$, $SD = 2.02$). Higher values indicate greater agreement with each of the six topic avoidance reasons.

Results

Preliminary analyses

Because previous research (Keefer et al., 2005; Lackner & Gurtman, 2005) has found that psychological and interpersonal variables significantly differed according to predominant IBS symptom and length of time with IBS, data analyses examined these two items in association with CA, overall topic avoidance, and reasons for topic avoidance to ensure that they did not exert any unexpected influence upon the hypothesized relationships. A series of univariate analyses of variance (ANOVAs) revealed that none of the dependent variables significantly differed according to either IBS item (see Table 2 for F values, means, and standard deviations for each preliminary analysis). Thus, I did not consider predominant IBS symptom and time since IBS diagnosis as covariates in subsequent hypothesis testing.

Preliminary analyses also examined type of relationship in association with the dependent variables to determine whether it exerted a significant impact upon the predicted relationships. Because only 1 participant each selected a sibling and "other" as their closest relational partners, I excluded them from further data analysis. A series of univariate ANOVAs determined that CA and the relationship protection and lack of closeness topic avoidance reasons did not significantly differ according to relationship type. The self-protection, privacy, and conflict avoidance motivations each displayed significant F values but Tukey honestly significant difference (HSD) post hoc analyses did not detect significant differences. Overall topic avoidance and the partner unresponsiveness topic avoidance reason displayed significant F values. Tukey HSD post hoc analyses revealed that those whose parents were their closest relational partners reported more overall topic avoidance than those whose spouses were their closest partners. Partner unresponsiveness was a significantly stronger reason for those whose spouses or romantic partners or fiancées were their closest partners compared with those selecting their parents. Analyses that included these variables thus considered relationship type as a covariate (see Table 2).

CA and topic avoidance as predictors of the IBS experience

Two hypotheses posited that there would be a positive relationship between CA (H1), topic avoidance (H3), and the IBS experience. Data analyses examined these relationships in two ways: (a) via bivariate, one-tailed correlations (see Table 3 for correlations among all study variables) and (b) via four multiple regressions that included both CA and topic avoidance as predictor variables and each IBS experience aspects as outcome variables. I coded relationship type as a series of dummy codes and entered these as a covariate in the first

among the three potential self-focused reasons should be substantially higher than that between them and each of the partner-focused reasons, with the same pattern also emerging for the correlations among the partner-focused reasons in comparison with their associations with the self-focused reasons. Examination of the correlation matrix showed that the correlations among these factors did not meet this initial benchmark: r values ranged from .11 to .72 and the anticipated patterns did not generally emerge. For example, the two partner-focused variables shared the lowest significant correlation ($r = .32$) and the privacy motivation correlated more strongly with partner responsiveness ($r = .72$) than with the self-protection reason ($r = .48$). As such, I did not pursue second-order factor analytic techniques.

Table 2. *Means and standard deviations for preliminary analyses and H2, H4, and H5*

	CA	TA level	Self-protect	Relationship protect	Partner	Closeness	Privacy	Conflict
Predominant IBS symptom								
Diarrhea	3.26	2.65	3.51	4.18	2.97	2.07	2.79	3.93
	(1.43)	(1.31)	(1.73)	(1.84)	(1.42)	(1.53)	(1.77)	(2.04)
Constipation	3.40	2.21	3.08	3.73	2.72	1.97	2.63	3.37
	(1.21)	(.982)	(1.54)	(1.85)	(1.48)	(1.24)	(1.49)	(1.82)
Abdominal bloating/pain	2.98	2.53	3.52	3.79	3.03	2.09	2.55	3.81
	(1.55)	(1.29)	(1.87)	(1.85)	(1.78)	(1.45)	(1.64)	(2.22)
F	0.95	1.35	0.77	0.93	0.42	0.08	0.32	0.79
Time since IBS diagnosis								
3–6 months	3.37	2.50	3.30	3.63	3.12	2.33	2.96	2.96
	(1.34)	(1.33)	(2.10)	(2.03)	(1.77)	(2.00)	(1.90)	(2.17)
6–12 months	2.87	2.85	3.78	4.06	2.84	1.83	2.67	3.78
	(1.26)	(1.06)	(1.65)	(1.82)	(1.52)	(1.09)	(1.46)	(1.60)
1–3 years	3.51	2.68	3.65	4.00	2.82	2.06	2.76	4.01
	(1.39)	(1.20)	(1.71)	(1.76)	(1.42)	(1.37)	(1.70)	(2.13)
3–5 years	3.11	2.30	3.11	3.43	3.08	2.16	2.63	3.47
	(1.47)	(.978)	(1.60)	(2.03)	(1.61)	(1.52)	(1.61)	(1.88)
Over 5 years	3.01	2.46	3.39	4.25	2.94	1.97	2.57	3.93
	(1.49)	(1.43)	(1.80)	(1.75)	(1.64)	(1.40)	(1.69)	(2.15)
F	0.94	0.61	0.54	1.11	0.17	0.25	0.17	0.86
Type of relationship								
Spouse	2.82	2.21_{a}	2.94	3.67	2.68_{a}	1.88	2.17	3.46
	(1.50)	(1.11)	(1.71)	(1.93)	(1.55)	(1.32)	(1.46)	(2.06)
Romantic partner/fiancée	2.92	$2.61_{a,b}$	3.64	4.25	2.88_{a}	1.92	3.13	3.91
	(1.36)	(1.21)	(1.65)	(1.78)	(1.45)	(1.41)	(1.79)	(1.86)

Continued

Table 2. *Continued*

	CA	TA level	Self-protect	Relationship protect	Partner	Closeness	Privacy	Conflict
Friend	3.00	$2.87_{a,b}$	3.74	4.63	$3.69_{a,b}$	2.46	3.04	5.19
	(1.03)	(1.35)	(1.34)	(1.75)	(1.50)	(1.77)	(1.76)	(1.56)
Parent	3.52	3.43_{b}	3.56	4.45	4.56_{b}	2.90	3.20	5.30
	(1.50)	(1.56)	(2.15)	(1.87)	(1.19)	(1.29)	(0.57)	(1.48)
F	0.44	3.67*	2.71*	2.00	3.94*	1.49	5.48*	4.33*
IBS vs. non-IBS								
IBS-diagnosed	3.13	2.53	3.46	3.95	2.94	2.05	2.68	3.82
	(1.42)	(1.26)	(1.72)	(1.86)	(1.58)	(1.44)	(1.69)	(2.07)
Non-IBS	2.24	2.11	2.50	3.85	2.64	1.69	2.11	3.57
	(1.25)	(0.9q)	(1.47)	(1.98)	(1.44)	(1.18)	(1.34)	(1.88)
F	15.01*	4.24*	12.15*	0.06	1.2	2.38	4.36*	0.44

Note. Values in parentheses are standard deviations. Higher values indicate greater levels of communication apprehension (CA), topic avoidance (TA), and reasons for topic avoidance on a 7-point scale. For type of relationship, subscript letters that differ in columns indicate significant differences at $p < .05$.

*Groups significantly differed from one another at $p < .05$.

Table 3. *Correlations between study variables*

Study variables	2	3	4	5	6	7	8	9	10	11	12
1. Communication apprehension	.55***	.58***	.22**	.57***	.30***	.50***	.42***	.17*	.17*	.20**	.23**
2. Overall topic avoidance		.66***	.25***	.67***	.51***	.70***	.53***	.16*	.05	.19**	.08
3. Self-protection reason			.46***	.61***	.51***	.48***	.59***	.22**	.18*	.16*	.24**
4. Relationship protection reason				.32***	.38***	.11	.53***	.13	.19*	.01	.17*
5. Partner responsiveness reason					.56***	.72***	.56***	.17*	.13	.25**	.18*
6. Lack of closeness reason						.56***	.41***	.19**	.06	.10	.16*
7. Privacy reason							.41***	.19**	.06	.29***	.13
8. Conflict avoidance reason								.09	.06	.11	.09
9. IBS abdominal difficulty									.55***	.30***	.39***
10. IBS bowel difficulty										.18**	.41***
11. Number of doctor visits											.56***
12. Number of days in bed											1

Note. All correlations are one-tailed.
*$p < .05$. **$p < .01$. ***$p < .001$.

block of each regression model. Relationship type was not a significant covariate in any test (see Table 4 for beta values). For all regression analyses, the variance inflation factor (VIF) did not exceed 1.44, indicating that the two predictor variables do not exhibit multicollinearity (Kleinbaum, Kupper, & Muller, 1988).

CA was significantly and positively correlated with each of the four IBS experience variables (abdominal difficulty, $r = .17$, $p < .05$; bowel difficulty, $r = .17$, $p < .05$; physician visits, $r = .20$, $p < .01$; days spent in bed, $r = .23$, $p < .01$) and topic avoidance was significantly and positively correlated with abdominal difficulty ($r = .16$, $p < .05$) and physician visits ($r = .19$, $p < .01$), but not with bowel difficulty ($r = .05$, $p = .28$) or days spent in bed ($r = .08$, $p = .17$). The multiple regression analyses found that only overall topic avoidance positively predicted abdominal difficulty and that none of the regression models were significant (see Table 4 for F, R^2, and β values). Thus, both H1 and H3 received mixed support.

Comparing the IBS-diagnosed and non-IBS subsamples

H2, H4, H5 and the RQ investigated differences for the dependent variables of CA, topic avoidance, and the reasons for topic avoidance between individuals diagnosed with IBS and those who are not (the independent variable). The moderate to high correlations between the dependent variables (i.e., ranging from .12 to .72) and a significant Bartlett's test of sphericity (871.32, $p < .001$) suggested that analyses test H2, H4, H5, and the RQ together in a multivariate analysis of covariance (MANCOVA) with relationship type as a covariate.

Analyses detected significant multivariate effects for the IBS diagnosis fixed factor, Wilks's lambda (Λ) = .87, $p < .01$, effect size (η^2) = .13. There were also significant univariate effects for CA $F(8, 179) = 15.01$, $p < .001$, $\eta^2 = .08$; topic avoidance, $F(8, 179) = 4.24$, $p < .05$, $\eta^2 = .02$; and the topic avoidance reasons of self-protection, $F(8, 179) = 12.50$, $p < .01$, $\eta^2 = .06$, and privacy, $F(8, 179) = 4.36$, $p < .05$, $\eta^2 = .02$. Analyses did not detect significant effects for the topic avoidance reasons of relationship protection, $F(8, 179) = 0.06$, $p = .80$, power = .06; partner unresponsiveness, $F(8, 179) = 1.20$, $p = .27$, power = .19; lack of closeness, $F(8, 179) = 2.38$, $p = .12$, power = .34; and conflict avoidance, $F(8, 179) = 0.44$, $p = .51$, power = .10. Relationship type was a significant covariate for overall topic avoidance, $F(8, 179) = 9.96$, $p < .01$, $\eta^2 = .06$, and the reasons of self-protection, $F(8, 179) = 4.87$, $p < .05$, $\eta^2 = .03$; relationship protection, $F(8, 179) = 4.59$, $p < .05$, $\eta^2 = .02$; partner unresponsiveness, $F(8, 179) = 10.35$, $p < .01$, $\eta^2 = .05$; privacy, $F(8, 179) = 10.16$, $p < .01$, $\eta^2 = .05$; and conflict avoidance, $F(8, 179) = 11.15$, $p < .01$, $\eta^2 = .06$ (see Table 2).

For each significant difference, examination of the means indicates that IBS-diagnosed individuals have more CA, engage in more topic avoidance, and are more likely to report that self-protection and privacy are reasons for this avoidance. Thus, the data are consistent with H2 and H4. Because analyses only detected a significant difference for the self-protection reason, the data were only partially consistent with H5. Finally, the significant differences observed for the privacy reason addresses the research question.

Discussion

Because "individuals with interpersonal problems characteristic of IBS patients may very well benefit from supportive social relationships, but be too submissive, compliant, yielding, or socially anxious to access them" (Lackner & Gurtman, 2005, p. 530), understanding interpersonal communication in a partnership where one individual has a chronic health condition such as IBS is crucial for creating a relational environment that aids in illness management. Thus, this study applied the theory of inhibition and confrontation to exploring the relationship between interpersonal communication with one's closest relational partner and the IBS experience. Results determined that CA and multiple aspects of topic avoidance varied

Table 4. *Regression statistics for the communication avoidance predictors of the IBS experience*

		IBS experience variables			
		Abdominal difficulty	Bowel difficulty	Number of doctor visits	Number of days in bed
	F	1.85	0.46	1.67	1.01
	R^2	.07	.02	.06	.04
Covariates					
Romantic partner/fiancée	β	−.00	−.01	−.11	.07
Friend	β	−.12	−.04	−.10	−.08
Parent	β	.12	−.05	.03	−.07
Predictor variables					
Communication apprehension	β	−.04	.08	.06	.00
Overall topic avoidance	β	.22*	.06	.18	.15

*$p < .05$.

according to IBS diagnosis. Furthermore, the findings detailed below are applicable to multiple close relationship contexts.

Person–partner CA

Although consistently linked with anxiety, research has not yet related CA to specific health conditions or physical symptoms. Results for H1 and H2 identified a fairly sizable relationship between the experience of IBS and person–partner CA. Findings determined that person–partner CA was positively correlated with each IBS experience variable but was not a significant predictor in multiple regression analyses (H1). H1's findings thus initially suggest including CA as a correlate of multiple physical and psychological aspects of IBS and including IBS abdominal severity and frequency, bowel severity, and number of physician visits and days spent in bed in the last month. Although the correlations were small to moderate in size, H1's findings nonetheless provide intriguing preliminary evidence of a CA–health communication link.

Furthermore, results strongly supported H2, with IBS-diagnosed individuals reporting significantly higher levels of person–partner CA than non-IBS individuals and IBS diagnosis explaining 8% of the CA variance. H2's finding provides compelling preliminary evidence that person–partner CA is particularly linked with the IBS experience and researchers should thus include this variable in the growing list of relationship variables that differ according to IBS diagnosis. Taken together, findings for H1 and H2 indicate that CA appears to be related to the experience of IBS. Furthermore, person–partner CA can also unfortunately extend to IBS sufferers' closest relational partners and can thus potentially add another layer of stress to their IBS experience. As such, the next step in this line of research should be to understand how alleviating CA might concurrently improve the experience of IBS.

Topic avoidance

Overall topic avoidance. H3 and H4 investigated the association between the IBS experience and overall topic avoidance. For H3, topic avoidance was positively correlated with abdominal difficulty and number of doctor visits in the last month and was also a significant predictor of abdominal difficulty. Thus, although not related to as many facets of the IBS experience as CA topic avoidance nevertheless seems to be linked with both physical and psychological aspects of IBS. One likely reason that CA is linked with more IBS experience variables than overall topic avoidance is that CA might be more stable of an interpersonal communication concept. Although CA may abate as a relationship develops (McCroskey, 1984),

the relationships examined here averaged 10 years, suggesting that CA levels are likely to have stabilized. In contrast, topics considered "taboo" can be later reintroduced (Roloff & Ifert Johnson, 2001).

Furthermore, findings supported H4, the IBS-diagnosed subsample reported engaging in more topic avoidance than the non-IBS subsample, although the effect was minor. Topic avoidance is fairly common in close relationships (Afifi & Guerrero, 2000) and it also seems to have some salience in relationships that include an IBS-diagnosed partner. These findings are generally consistent with the idea that individuals who actively avoid self-disclosing make themselves more vulnerable to stress that may then produce various physical illnesses (Jourard, 1971).

The combined results for CA and overall topic avoidance generally seem to echo the overwhelming bulk of evidence that shows that "self-disclosure promotes physiological health and well-being" (Tardy, 2000, p. 112). Although this position contrasts Parks's (1982) ideology of intimacy, it is consistent with recent evidence that topic avoidance can be dissatisfying for relational partners and linked with low communication competence (Caughlin & Afifi, 2004; Caughlin & Golish, 2002). Furthermore, this pattern of findings reflects the consequences of communication avoidance when one partner has a chronic health condition.

Reasons for topic avoidance. H5 and the RQ examined whether Caughlin and Afifi's (2004) six topic avoidance motivations varied according to IBS diagnosis. Results indicated that those diagnosed with IBS reported stronger self-protection and privacy topic avoidance motivations than those who do not have IBS. Afifi and Guerrero (2000) stated that the self-protection reason for topic avoidance is typically primary when an individual chooses to avoid a topic and a similar trend is evidenced here in the IBS context. Zhang and Siminoff (2003) also observed a self-protection motivation in individuals with cancer who avoided discussing their illness with family members.

Although IBS-diagnosed individuals might take their IBS experience into account when motivated to avoid topics due to self-protection, it may actually be to their disadvantage. Stiles's (1987) fever model states that those in psychological distress (which could serve as an aspect of the IBS experience) seek self-understanding to relieve this distress, which one can achieve via disclosure to a close relational partner. Using this logic, IBS-diagnosed individuals should instead consider communicating about these topics, rather than avoiding them, when seeking to protect themselves.

Petronio's (2002) communication privacy management (CPM) theory can aid in explaining the finding that IBS-diagnosed individuals reported a greater privacy motivation for topic avoidance (RQ). Specifically, Supposition 3 states that if one chooses not to disclose information due to privacy concerns, he or she may feel in control and autonomous. This might be a particularly appealing outcome to those who might feel as if they cannot control their own bodies or how they react to situations they are exposed to due to IBS. CPM theory might therefore represent a useful theoretical structure for future research that examines IBS-diagnosed individuals' interpersonal communication processes.

Although the self-protection and privacy motivations did differ according to whether participants had IBS or not, the relationship protection and partner unresponsiveness (as predicted by H5) and lack of closeness and conflict avoidance reasons (as examined in the RQ) did not significantly vary by IBS diagnosis. One explanation for these nonsignificant differences is that type of relationship may have exerted more of an influence on these reasons for topic avoidance than IBS diagnosis. Indeed, the partner unresponsiveness and conflict avoidance motivations varied according to relationship type in the preliminary analyses, and relationship type was a significant covariate for each of these nonsignificant topic avoidance reasons except for lack of closeness. Furthermore, each of these motivations significantly differed by relationship type in prior research (Golish & Caughlin, 2002; Guerrero & Afifi, 1995).

Overall, the findings for topic avoidance motivations suggest that IBS diagnosis seems to distinguish between the reasons that consider the relationship or the partner and those that focus upon privacy or one's own protection. As described above, this focus on the self—in terms of both protection and privacy—may be unique to the nature of the IBS experience. That IBS-diagnosed individuals did not report a significantly stronger relationship protection topic avoidance motivation than the non-IBS group is surprising when considering that this motivation is especially likely in satisfying cherished relationships (Afifi & Guerrero, 2000; Petronio, 2002). The exact role that each of these reasons plays in why IBS-diagnosed individuals avoided these topics does require further research clarification.

The theory of inhibition and confrontation

Pennebaker's (1989) theory of inhibition and confrontation provides a logical link from communicative expression to health outcomes. Prior recommendations (Bootzin, 1997; Siegel, 2003) to expand this theory to include interpersonal communication processes made it particularly appealing to the present study. The current findings generally support the tenets of the theory while also expanding its applicability to the experience of IBS. Specifically, the present results indicate that researchers can consider CA and topic avoidance as specific forms of inhibition, which share unique associations with different physical and psychological aspects of IBS. Furthermore, that the inhibition of a variety of topics—not just the traumatic ones that previous tests of the theory typically focus upon—seems to be linked to the IBS experience is also noteworthy. Overall, the observed links between communication avoidance and the IBS experience not only inform the theory of inhibition and confrontation but also strongly suggest that scholars should apply this theoretical framework in future research within personal relationship and health communication contexts.

Limitations and conclusions

Although the present study uncovered new interesting associations between interpersonal communication and the IBS experience, limitations do exist. The first limitation involves the sample, which is not generalizable to a known population and only focuses upon how variables are related in one cultural and structural context. Replications of this study that include a more diverse population will allow us to understand how findings might vary culturally, demographically and structurally.

A second limitation is the method of obtaining the IBS-diagnosed subsample. I employed multiple online IBS-related Web sites and discussion boards to collect this subsample, and individuals who visit these Web sites likely acknowledge their conditions and feel comfortable discussing it with others, whereas those who do not visit such Web sites may be unwilling or uncomfortable acknowledging or disclosing their IBS to others. Because there may be differences between those who do and do not acknowledge their IBS, future research should strive specifically to include the latter group.

Additionally, this study focused upon communication within interpersonal relationships but only assessed one partner's recall of prior interpersonal communication experiences (although these interactions took place in the last month in order to increase accurate recall). Nonetheless, because studying such a specific, difficult to identify population already represented a challenge, I felt that including relational partners was too advanced for an exploratory study such as this. Based upon the encouraging findings reported here, however, future research should include both relational partners and examine their actual communication interactions.

In sum, the intersection of interpersonal and health communication is a unique and important field of study, as illness intensifies vulnerability and alters how close relational partners negotiate their roles (Duggan, 2006). This statement is particularly applicable to the experience of IBS, which is a biopsychosocial condition where social situations

and interpersonal relationships can be linked with IBS symptom frequency and severity. This study found that interpersonal CA and topic avoidance with one's closest relational partner each were related to multiple physical (e.g., abdominal and bowel symptoms) and treatment-like (i.e., number of physician visits or days spent in bed due to IBS) components of the IBS experience. The pattern of findings evidenced in this study is sobering, in that the very relationships that should be a source of comfort and safety to IBS-diagnosed individuals may instead be related to the exacerbation of their symptoms.

Overall, the present study made introductory strides toward identifying interpersonal communication concepts as forms of inhibition that are related to multiple aspects of the IBS experience, including differentiating IBS-diagnosed individuals from those who do not suffer from the condition. In doing so, the current research expands both the scholarly understanding of IBS and the application of the theory of inhibition and confrontation to include interpersonal communication, with an eye toward a continued research focus on understanding health communication processes within close relationships in an IBS context.

The "take-away message" from this and other IBS studies examining social and interpersonal concepts (e.g., Bennett et al., 1998; Day et al., 2001) is not entirely positive: Close relational partners (including spouses and romantic partners, friends, and family members) and the interactions IBS-diagnosed individuals have with them seem to be associated with aggravated, rather than alleviated, IBS symptoms. Although the present data cannot establish a causal link, these interrelated associations strongly suggest that developing targeted strategies that improve communication within personal relationships can also ease an individual's IBS experience as well as create and foster a supportive and healthy relational environment for both partners.

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