

Is Self-Disclosure in Couples Coping With Cancer Associated With Improvement in Depressive Symptoms?

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Objective: This study examined associations between the degree of self-disclosure and changes in depressive symptoms in couples coping with colorectal cancer. **Method:** Sixty-four newly diagnosed patients and their partners completed a measure of depressive symptoms (Center of Epidemiologic Studies Depression Scale) 3 and 9 months postdiagnosis. Furthermore, approximately 2 months after the first assessment, they engaged in a cancer-related conversation in which the patient was asked to introduce a concern. Each partner's verbalizations of emotions, thoughts, and wishes (i.e., self-disclosures) were coded by independent observers. **Results:** Patients who reported more depressive symptoms at baseline showed more self-disclosures. Mutual self-disclosure was not associated with lower levels of depressive symptoms in patients and partners as compared with one-sided self-disclosure or low disclosure in both patients and partners. It is important to note that decreases in depressive symptoms over time were least prominent in couples in which the partner disclosed a lot whereas the patient disclosed little. **Conclusion:** These results suggest that mere disclosure of emotions and thoughts to one's intimate partner is not beneficial in reducing distress. Partners' self-disclosure toward patients who disclose few emotions and concerns even appears to be harmful both for patients and partners, given that it reduces the decrease of depressive symptoms over time. If there is a mismatch in the need for self-disclosure within couples, partners with a strong need to talk about their emotions and concerns may be recommended to confide in someone else in their social network or to consult a health care professional.

Keywords: self-disclosure, distress, couples, spouse, communication

There is a widespread belief that sharing feelings and thoughts with other people in times of stress is beneficial in terms of emotional well-being. For example, 90% of a large sample of

laypersons believed that talking about emotional experiences alleviates the emotional impact of upsetting events (Zech & Rimé, 2005). As well, in the context of a chronic medical illness, the importance of self-disclosure has been stressed. In the psychooncological literature, for example, claims that open communication and self-disclosure are beneficial for patients' adjustment have been made frequently (e.g., Figueiredo, Fries, & Ingram, 2004; Harrison, Maguire, & Pitceathly, 1995; Porter, Keefe, Hurwitz, & Faber, 2005). As our overview of the literature will show, the empirical evidence to support the belief that disclosing emotions to another person actually alleviates psychological distress is limited. The present longitudinal study aims to increase understanding of the associations between self-disclosure within couples coping with colorectal cancer and depressive symptoms in both partners. Specifically, we are interested in whether the degree of patient self-disclosure is associated with a decrease in distress over time in both patients and partners, depending on the degree of partner self-disclosure. Therefore, patients' and partners' self-disclosures, defined as verbalizations of emotions, thoughts, or wishes, were observed during a conversation in which the patient introduced a cancer-related concern to their partner.

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Self-Disclosure Within Couples Coping With Cancer

Open communication and self-disclosure within couples are thought to be important for patients' and partners' psychological adjustment to cancer (e.g., Boehmer & Clark, 2001; Cordova, Cunningham, Carlson, & Andrykowski, 2001; Harrison et al., 1995). The general idea is that disclosure may provide opportunities for validation, reappraisal, and finding meaning in the cancer experience. It may facilitate the cognitive processing of cancer-related thoughts and feelings to interpret them meaningfully and reach a state of emotional acceptance (e.g., Lepore, 2001). As cancer affects patients as well as their partners, both members of the couple may benefit when the patient brings up a cancer-related concern.

However, few studies have actually examined self-disclosure to one's partner within the context of cancer. In these empirical studies, a distinction has been made between disclosure or emotional expression and a lack of disclosure (i.e., hiding worries, "holding back," and emotional inhibition). For example, one study found that women with breast cancer who indicated that they had held back from disclosing also reported poorer emotional well-being than did those who reported that they did not hold back (Figueiredo et al., 2004). The extent of self-disclosure, however, was not associated with patients' emotional well-being. Another survey study among individuals with gastrointestinal cancer and their partners showed that holding back one's emotions was positively associated with intrusive thoughts about the cancer in patients and with avoidance of reminders of the cancer in patients and partners (Porter et al., 2005). Holding back by patients and partners, as well as patient and partner self-disclosure, was unrelated to emotional well-being in patients.

Questionnaire-based studies examining associations between relationship-focused coping strategies (i.e., protective buffering and active engagement) and psychological distress may shed some light on this issue as well. Protective buffering involves hiding worries and dismissing concerns or negative emotions, whereas active engagement is characterized, for example, by involving one's partner in discussions (Coyne & Smith, 1991). A few studies in the context of cancer have found protective buffering by patients to be associated with more psychological distress in patients (Kayser, Sormanti, & Strainchamps, 1999; Manne, Dougherty, Veach, & Kless, 1999; Manne et al., 2007) and buffering by partners to be associated with more distress in partners (Hinnen, Hagedoorn, Sanderman, & Ranchor, 2007; Manne et al., 1999, Manne et al., 2007). In contrast, active engagement was found to be unrelated to distress (Hinnen et al., 2007; Kayser et al., 1999). Furthermore, some studies (Kuijer et al., 2000; Manne et al., 2007), but not all (Hagedoorn et al., 2000), revealed that protective buffering by partners was associated with more distress in patients. In a similar vein, family avoidance in communicating cancer concerns was found to be related to lower well-being in women with breast cancer (Mallinger, Griggs, & Shields, 2006). Taken together, these primarily cross-sectional studies suggest that holding back emotions may be harmful, but there is little evidence that self-disclosure is positively associated with emotional well-being.

Evidence for the Beneficial Effect of Self-Disclosure From Experimental Studies

Although the experimental studies discussed here do not include romantic dyads, they do provide insight into the potential causal effects of disclosure of a personal event to another person. In an interesting line of research by Rimé and colleagues (Rimé, Finke-nauer, Luminet, Zech, & Philippot, 1998; Zech & Rimé, 2005),¹ participants were asked to recall an upsetting event that they still thought about and that evoked strong negative emotions. The findings revealed that participants who were invited to share their emotions openly with an interviewer rated the experience as more helpful than did participants who were asked to talk about trivial topics to an interviewer. It is important to note, however, that emotional recovery—defined as a decrease in intensity of the emotion elicited by the specific upsetting event before talking to the interviewer compared with 7 days (and 2 months) after the interview—was not promoted by self-disclosure. Put differently, the findings consistently failed to support the belief that merely talking with others about an upsetting event alleviates its emotional impact. To the contrary, Rimé and colleagues found that people who did not recover from an upsetting event kept talking about it to others (cf. Ullrich, Rothrock, Lutgendorf, Jochimsen, & Williams, 2008).

Mutual Self-Disclosure

The studies discussed earlier provide little evidence for the belief that disclosing emotions to another person after an upsetting event has a beneficial effect on emotional well-being. However, it is important to recognize that the response of the person to whom one talks about one's emotions and thoughts may make a crucial difference (Lepore, 2001; Marin, Holtzman, DeLongis, & Robinson, 2007). According to the social-cognitive processing model put forth by Lepore (2001), disclosures may facilitate cognitive processing and provide opportunities for validation and reappraisal if listeners are receptive.

Although the interviewers in the self-disclosure experiments discussed earlier were trained to maintain a warm, nondirective, empathic attitude (e.g., Zech & Rimé, 2005), disclosing to such an empathic listener was not found to promote emotional recovery. Similarly, in an intervention aimed to enhance emotional disclosure in persons with cancer, healthy partners learned to take on the role of an understanding reflective listener, yet this did not improve mood for patients and partners (Porter et al., 2009). One reason might be that the interviewers and partners in these studies did not actually assume the role of an empathic, understanding listener. Another reason might be that it is not sufficient to have a receptive attitude to a person who is introducing a concern. Rather, it may be key to reveal personal emotions or thoughts oneself

¹ Research on the basis of the writing paradigm developed by Pennebaker and his colleagues (e.g., Pennebaker, 1997) is another line of work that may come to mind. However, these studies intentionally do not address the interpersonal nature of the sharing process (i.e., there is no listener who responds, and most often emotions are expressed through writing rather than talking) and therefore have limited value in answering the question whether disclosing emotions, thoughts, and wishes to another person is beneficial.

during the conversation. For example, in a study by Lepore, Ragan, and Jones (2000), participants watched an upsetting movie about the Holocaust and were told to share their experiences with another participant who was actually a confederate. The standardized response of the confederate to participants included self-disclosures concerning the movie. Compared with a no-talk condition, talking to the confederate did show a reduction in perceived stress at a later assessment after reexposure to the stressor. It is interesting, and in line with the findings of Rimé et al. (1998; Zech & Rimé, 2005), that these researchers did not find a beneficial effect of self-disclosure in another, but similar, experiment in which the validating confederate was presented as not having seen the upsetting movie and thus did not make any self-disclosures about the movie (Lepore, Fernandez-Berrocal, Ragan, & Ramos, 2004).

The Rimé et al. (1998; Zech & Rimé, 2005) and the Lepore et al. (2000, 2004) studies involved disclosing emotions to a stranger, which may be different from disclosing to one's partner. It may be that patients are more open to a neutral outsider than to their partner, because they might not want to burden their partner. Conversely, patients may feel more comfortable and protected when talking to their partner and, therefore, be more open to a partner than an outsider. Furthermore, in the cancer context, partners are likely to experience distress themselves. Additionally, disclosing one's emotions and thoughts concerning a cancer experience may be different from disclosing emotions and thoughts concerning other personal events, especially acute events such as an upsetting movie. These issues were addressed by Manne, Ostroff, Sherman, et al. (2004), who made use of observational data from women with breast cancer and their male partners. The degree of self-disclosures during a cancer-related discussion was not associated with the women's psychological distress as assessed a few days before the discussion. However, the more likely the women's disclosures were to be followed by a disclosure of their partners (i.e., reciprocity), the less distress the women reported. Similarly, a few survey studies showed that mutual constructive communication, including the expression of feelings, was associated with less psychological distress in couples dealing with breast (Manne et al., 2006) and prostate cancer (Badr & Carmack Taylor, 2009).

The Present Study

To date, little is known about the association between the degree of self-disclosure within couples dealing with cancer and changes in depressive symptoms over time in both partners of the couple. Furthermore, it is unclear whether it makes a difference if self-disclosure is one sided (i.e., one person does most of the disclosing) or mutual (i.e., both partners disclose). The present longitudinal, observational study in which patients were asked to discuss a cancer-related issue with their partners begins to fill this gap. We were interested in mutuality in the degree of disclosures between patients and partners and formulated two competing hypotheses with respect to depressive symptoms. On the basis of the literature discussed earlier, it might be expected that self-disclosure is beneficial for both partners only if it is mutual. Therefore, Hypothesis 1 is that patients and partners will report fewer depressive symptoms over time if they both show a relatively high level of disclosure, as compared with those couples in which both members

show low levels of disclosure or only one partner shows high levels of disclosure. However, one pattern that has not yet received attention in the literature is the pattern in which the patient discloses little but the partner discloses much. It may be that such a pattern hampers psychological well-being over time. Specifically, for patients who bring up an issue but do not disclose much, the disclosures of the intimate partner may confront them with more worries, which may be perceived as an additional burden. At the same time, partners may feel that they are not able to support the patient if the patient does not reciprocate their disclosures at any time during the conversation. In other words, in these circumstances, the partners are not successful in stimulating the patient to open up, while at the same time drawing attention toward themselves. Accordingly, we also tested Hypothesis 2, suggesting that a pattern in which the patient discloses little, whereas the partner discloses a lot, is associated with more depressive symptoms over time in both partners of the couple as compared with all other combinations of patient and partner disclosure.

Method

Participants

Participants were newly diagnosed persons with colorectal cancer and their intimate partners who were recruited from oncology clinics at eight participating hospitals in the Netherlands (Dagan et al., 2011; Hagedoorn et al., in press). Persons with colorectal cancer were eligible if they were waiting for treatment or recently underwent surgery, were currently living with an intimate partner, and were between 18 and 75 years of age. Inclusion criteria for couples were fluency in Dutch, no documented hearing or cognitive impairments, and informed consent of both partners. A total of 280 couples were eligible, of which 88 expressed a willingness to participate and completed the baseline questionnaire. Of these 88 couples, 64 completed the videotaped interaction. Comparisons between patients who declined participation and those who participated did not indicate differences in gender, $\chi^2(1, 260) = 1.08$, $p = .30$; or age, $t(236) = 1.82$, $p = .07$. In addition, participants and couples who consented but did not complete the interaction task were compared. These analyses did not reveal any significant differences in terms of hospital recruitment site, duration of the relationship, age, treatment status, or depressive symptoms and emotional inhibition² of either partner. However, the dropout was largest among the small group of patients with Stage IV cancer (66%, compared with 27% dropout overall). Nine couples indicated that they did not feel that they were able to complete the interaction task because of a poor prognosis or complications. In addition, 1 patient and 1 partner died before the interaction task could be completed.

² We used three items of Roger and Najarian's emotional inhibition scale (Roger, de la Banda, Lee, & Olason, 2001): "When something upsets me I prefer to talk to someone about it than to bottle it up" (reverse scored), "I seldom show how I feel about things," and "I don't feel embarrassed about expressing my feelings" (reverse scored). Two new items were added: "I like to talk about my problems to vent my emotions" (reverse scored) and "Some people feel the need to confide in someone, but I prefer to solve my problems by myself." Cronbach's alpha was 0.71 for patients and 0.73 for partners.

Among the 64 couples who participated in the videotaped recordings, 46 were couples with a male patient and 18 were couples with a female patient. Most couples were married (88%), and the mean length of their relationship was 34 years ($SD = 14$; range = 4–56). Patients and partners had a mean age of 61 ($SD = 10$). The level of education of patients and their partners was quite varied. Of the patients, 9% finished elementary school only, 58% received secondary education, and 33% received a higher vocational education or a university degree. For partners, these percentages were 9%, 69%, and 22%, respectively. About 18% of the participants had a paid job. The majority of the men were retired (53%), whereas the modal occupation for women was homemaker (37%).

Fifty percent of the patients were diagnosed with colon cancer and the other half with rectal cancer. The stage of the cancer varied: I = 17%, II = 36%, III = 44%, and IV = 3%. The majority (66%) of the patients had received surgery. Fourteen patients (22%) had a colostomy, and another 9 (14%) were scheduled to receive one in the near future. About 36% of the patients had received chemotherapy ($n = 6$), radiotherapy ($n = 13$), or both ($n = 4$). Another 22% were scheduled to receive chemo- and/or radiotherapy in the near future. The patients reported a reasonable (29%) to high (71%) chance of being cured. A considerable number of the patients reported comorbidities (62%), and many partners (64%) also indicated health complaints, most commonly hypertension, chronic back pain, and arthritis.

Procedure

Newly diagnosed persons with colorectal cancer and their intimate partners received an information letter along with a consent form during an outpatient visit from their physician or nurse. A research assistant was available by phone to answer potential questions about the study. Couples who returned the consent form to the investigators were contacted by phone and received a background questionnaire, including the depressive symptoms measure. Patients and partners completed this questionnaire separately and returned it by mail. Approximately 2 months later, couples engaged in the interaction task, and a follow-up questionnaire was completed about 4 months after this task. This procedure was approved by the Medical Ethical Committee of the hospitals involved.

The interaction task consisted of a semistructured communication task in which patients presented a personal cancer-related concern to their partners. We used a procedure quite similar to those used in previous marital interaction studies (e.g., Manne, Ostroff, Sherman, et al., 2004; Pasch & Bradbury, 1998). Specifically, patients were asked to list their cancer-related concerns and to select one that caused them considerable distress and that they would like to discuss with their partner. The most common cancer-related concerns were fear of recurrence, uncertainty about the future, concerns about their stoma and treatment, worries about work, and concerns about their partner and children. Partners were instructed to be involved in the discussion and to respond in whatever way felt natural to them. To facilitate this, the psychologist left the room during the interaction. Moreover, the communication task was conducted at the couples' homes because conversations tend to be more spontaneous and realistic when conducted at home instead of in the laboratory (e.g., Gottman & Notarius, 2000). The underlying idea was that this interaction task

captures how couples talk about cancer-related issues when the patient brings up a concern in everyday life.

The 10-min conversation was videotaped and later coded for behaviors. If the couple had not finished after 11 min, they were told they could stop. The interaction was preceded by a 5-min warm-up conversation about how they met, allowing the couple to get used to the taping procedure. After the conversation about the patients' cancer-related concern, participants rated the discussion in terms of the degree to which the discussion had been typical of their discussions outside the study. The mean rating was 4.00 ($SD = 0.81$) for patients and 4.16 ($SD = 0.71$) for partners on a scale ranging from 1 (*not at all*) to 5 (*very much*). There were no gender differences with respect to these ratings.

Measures

Depressive symptoms. We assessed participants' depressive symptoms with both the initial and follow-up questionnaires using the Center of Epidemiologic Studies Depression Scale (Dutch translation; Bouma, Ranchor, Sanderman, & Van Sonderen, 1995; see also Radloff, 1977). The 20 items were completed on a 4-point scale ranging from 0 (*rarely or never*) to 3 (*almost always*). Items were summed within participants into a single score ($\alpha_s = 0.85$ and 0.88 for patients and partners, respectively). Participants scoring at or above the cutoff score of 16 are at risk for developing a clinical depression.

Self-disclosure. This variable was defined as the disclosure of a personal feeling, thought, wish, or need with respect to the issue discussed. We used an adjusted version of Bradbury and Pasch's (1994) coding system, with subdivided categories based on the Rapid Marital Interaction Coding System (RMICS; Heyman & Vivian, 1997) to allow for the coding of disclosures on each speaker turn. Consistent with the RMICS, if a speaker turn included more than one statement that reflected different codes, the most negative code was assigned. Given this, critical or demanding remarks toward the partner were not coded as disclosures. Because couples varied in their speech turns, the number of times a speech turn was coded as self-disclosure was divided by the participant's total number of speech turns. Three coders were trained by Mariët Hagedoorn. They received 8 hr of in-person training and then practiced until they reached 80% interrater agreement. Videotapes were randomly assigned to coders, with 25% assigned to two coders for reliability checks. Cohen's kappas for patient and partner self-disclosure were 0.74 and 0.80, respectively.

Results

Univariate and Bivariate Analyses

We performed t tests to examine gender differences in depressive symptoms and self-disclosure in patients and partners separately. In line with previous research (Hagedoorn, Sanderman, Bolks, Tuinstra, & Coyne, 2008), we found a gender difference with respect to depressive symptoms in partners, $t(62) = 2.80$, $p = .01$, at baseline and $t(62) = 2.67$, $p = .01$, at follow-up. Specifically, female partners reported more depressive symptoms ($M = 14.8$, $SD = 8.7$, 46% ≥ 16 at baseline; and $M = 13.0$, $SD = 9.6$, 36% ≥ 16 at follow-up) than did male partners ($M = 8.7$, $SD = 7.5$, 17% ≥ 16 at baseline and $M = 6.5$, $SD = 6.0$, 11% ≥ 16 at

follow-up). Among patients, the difference was in the same direction but did not reach significance ($M = 17.0$, $SD = 10.5$, $41\% \geq 16$ vs. $M = 12.3$, $SD = 8.5$, $33\% \geq 16$ at baseline). For disclosure, we did not find a gender effect within the patient and partner groups. Repeated-measures analyses to examine differences within couples revealed that patients ($M = 0.29$, $SD = 0.17$) disclosed more than did partners ($M = 0.15$, $SD = 0.13$), $F(1, 62) = 41.09$, $p < .001$, $\eta^2 = .40$; which is not surprising, given that patients were asked to introduce a topic.

In addition to gender, the presence of comorbidities was associated with more depressive symptoms in patients at baseline ($M = 10.6$, $SD = 6.2$ vs. $M = 15.1$, $SD = 10.2$), $t(59) = -2.21$, $p = .03$; and at follow-up ($M = 7.0$, $SD = 5.6$ vs. $M = 11.6$, $SD = 8.9$), $t(62) = -2.20$, $p = .03$. Similarly, the presence of health complaints was associated with more depressive symptoms in partners at follow-up ($M = 8.0$, $SD = 7.0$ vs. $M = 12.9$, $SD = 9.7$), $t(62) = -2.1$, $p = .04$. Other demographic and illness variables, including age, education, duration of the relationship, type of cancer (i.e., colon or rectal cancer), cancer stage, surgery before baseline (yes/no), were not related to depressive symptoms or to self-disclosure.

Baseline depressive symptoms and self-disclosures within participants were positively correlated, albeit only approaching significance for partners (see Table 1). That is, participants who reported more depressive symptoms at baseline disclosed more emotions, thoughts, and wishes than those who reported fewer depressive symptoms.

Longitudinal Analysis

As can be seen in Table 1, on average, depressive symptoms in patients declined over time, $t(63) = 3.50$, $p = .001$. For partners, the decline in depressive symptoms approached significance, $t(63) = 1.80$, $p = .08$. To test whether these changes were associated with the degree of patient and partner self-disclosure (i.e., to test Hypotheses 1 and 2), we used a mixed-levels model to examine the data (Raudenbush & Bryk, 2002). We conducted analyses using HLM v6 software (Raudenbush & Bryk, 2002) and used the data-analytic approaches detailed by Kenny, Kashy, and Cook (2006). Our data consisted of two levels; namely, dyads at Level 2 and individuals (i.e., patients and partners) nested within a dyad at Level 1. For Level 1, all data were centered around the sample mean before the files were applied to the HLM v6 package and two dummy coded variables were created; one for patients (1 = patient, 0 = partner) and one for partners (1 = partner, 0 = patient). Following the two-intercept approach suggested by Kenny et al. (2006),³ each Level 1 predictor variable was multiplied by the dummy coded variables to create separate predictor variables for patients and for partners. At Level 1, the general intercept was removed and replaced with the dummy coded variables: patients and partners. Each row in the Level 2 file represented predictors at the couple level; all Level 2 data were grand-mean centered around all couples' data. This approach permits dealing appropriately with nonindependence in the data between members of each dyad and addresses the need to model simultaneous regressions for patients and partners.

Using the approach outlined earlier, we examined associations between participants' degree of self-disclosure during the cancer-related conversation and their depressive symptoms for patients

and their partners within the same model, controlling for baseline depressive symptoms, gender, and comorbidities. The model is as follows:

Level 1 model:

$$\begin{aligned} \text{T2 Depressive Symptoms}_{ij} = & B_{0j}(\text{Patient}) + B_{0j}(\text{Partner}) \\ & + \beta_1(\text{Patient T1 Depressive Symptoms})_j \\ & + \beta_1(\text{Partner T1 Depressive Symptoms})_j \\ & + \beta_2(\text{Patient Comorbidities})_j \\ & + \beta_2(\text{Partner Comorbidities})_j \\ & + \beta_3(\text{Patient Gender})_j \\ & + \beta_2(\text{Partner Gender})_j + e_{ij} \end{aligned}$$

Level 2 model:

$$\begin{aligned} B_{0j}(\text{Patient}) = & \gamma_{00} + \gamma_{01}(\text{Patient Self-Disclosure}) \\ & + \gamma_{02}(\text{Partner Self-Disclosure}) \\ & + \gamma_{03}(\text{Patient Self-Disclosure} \\ & \times \text{Partner Self-Disclosure}) \\ B_{0j}(\text{Partner}) = & \gamma_{00} + \gamma_{01}(\text{Patient Self-Disclosure}) \\ & + \gamma_{02}(\text{Partner Self-Disclosure}) \\ & + \gamma_{03}(\text{Patient Self-Disclosure} \\ & \times \text{Partner Self-Disclosure}) \end{aligned}$$

where T2 Depressive Symptoms_{ij} reflects the depressive symptoms at follow-up for each participant, i , in couple j . T1 refers to the depressive symptoms at baseline. $B_{0j}(\text{Patient})$ and $B_{0j}(\text{Partner})$ are the intercepts for patients and partners, respectively, and are functions of the effects of patient and partner self-disclosure and their interaction term. The control variables were specified at Level 1. Finally, e_{ij} represents within-couple error.

Table 2 presents the results of the HLM analysis. For both patients and partners, the analysis did not reveal significant main effects of patient and partner self-disclosure, but we did find significant interactions between patient and partner self-disclosure. To examine whether the interactions were in line with either Hypothesis 1 or Hypothesis 2, we calculated the simple slopes for the associations between partner self-disclosure and depressive symptoms at two levels of patient self-disclosure (i.e., $\pm 1 SD$ from its mean). As depicted in Figure 1, partner self-disclosure was associated with higher levels of depressive symptoms in patients at follow-up if patient self-disclosure was relatively low, $B = 34.77$, $SE = 17.39$, $t(111) = 2.00$, $p = .05$; but not if patient self-disclosure was relatively high, $B = -3.06$, $SE = 7.06$, $t(111) =$

³ As suggested by Kenny et al. (2006), to examine the direction of nonindependence in our outcomes, we computed intercorrelations between patients and partners for each variable. The correlations between patient and partner depressive symptoms ($r = .04$, $p = .73$; and $r = .20$, $p = .12$, respectively) and self-disclosure ($r = .13$, $p = .30$) were positive but nonsignificant.

Table 1

Descriptive Statistics and Pearson Correlations Between Patient and Partner Self-Disclosure and Depressive Symptoms at Baseline (T1) and Follow-Up (T2)

Variable	1	2	3	4	5	6	<i>M</i>	<i>SD</i>	% Participants scoring \geq cutoff ^a
1. Patient self-disclosure	—	.13	.33*	-.23	.17	-.14	0.29	0.17	
2. Partner self-disclosure		—	-.08	.23	-.02	.17	0.15	0.13	
3. Patient T1 depressive symptoms			—	.04	.59**	.01	13.6	9.3	34
4. Partner T1 depressive symptoms				—	.00	.59**	13.0	8.9	35
5. Patient T2 depressive symptoms					—	.20	10.1	8.3	24
6. Partner T2 depressive symptoms						—	11.1	9.2	19

^a The cutoff on the Center of Epidemiologic Studies Depression Scale = 16, indicating that individuals are at risk for developing a clinical depression. * $p < .01$. ** $p < .001$.

–0.43, $p = .67$. For partners, we found a similar pattern. Partner self-disclosure was associated with higher levels of depressive symptoms at follow-up if patient self-disclosure was relatively low, $B = 17.57$, $SE = 9.01$, $t(111) = 1.95$, $p = .05$; but not if patient self-disclosure was relatively high, $B = 0.13$, $SE = 5.47$, $t(111) = 0.02$, $p = .98$ (see Figure 2). Thus, in contrast with Hypothesis 1, it was not mutual self-disclosure that was associated with lower levels of depressive symptoms in both patients and partners than the other three patterns. Instead, the interaction revealed that the pattern in which the partner discloses relatively often while the patient does not was associated with relatively high levels of depressive symptoms over time in both members of the couple, which is in support of Hypothesis 2.

Discussion

The aim of this observational study was to increase our understanding of the link between self-disclosure within couples confronted with colorectal cancer and changes in depressive symptoms over time in both partners of the couple. On average, we

observed a decline in depressive symptoms over time. Neither patient nor partner self-disclosure was found to be associated with changes in these symptoms in patients and partners. This is in line with experimental research by Rimé et al. (1998; Zech & Rimé, 2005), which failed to show a significant effect of self-disclosure on emotional recovery. Furthermore, we did not find support for Hypothesis 1; that is, mutual self-disclosure was not found to be associated with the lowest levels of depressive symptoms at follow-up. It is important to note that we did find support for Hypothesis 2. Specifically, the findings revealed that both members of the couple reported relatively high levels of depressive symptoms at follow-up if the partner showed a lot of disclosure whereas the patient showed little disclosure of emotions and thoughts.

To our knowledge, there is only one other observational study that examined supportive communication within couples coping with cancer (Manne, Ostroff, Sherman, et al., 2004). The levels of disclosure reported in that study among women with breast cancer ($M = 0.24$, $SD = 0.17$) and their partners ($M = 0.19$, $SD = 0.14$)

Table 2

Hierarchical Linear Model: Associations Between Patient and Partner Self-Disclosure During a Cancer-Related Conversation and Depressive Symptoms at Follow-Up (T2), Controlling For Baseline Depressive Symptoms (T1)

Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	ES (<i>r</i>)
Patient depressive symptoms at T2					
Intercept	11.16	1.62	6.89	<.001	
T1 depressive symptoms	0.41	0.10	4.12	<.001	.38
Gender (–1 = female, 1 = male)	–0.80	0.85	–0.95	.35	.09
Patient comorbidities (no/yes)	1.37	0.83	1.65	.10	.15
Patient self-disclosure	–11.84	8.05	–1.47	.14	.14
Partner self-disclosure	15.86	10.60	1.50	.14	.14
Patient Self-Disclosure \times Partner Self-Disclosure	–111.27	47.02	–2.37	.02	.22
Partner depressive symptoms at T2					
Intercept	10.73	1.20	8.94	<.001	
T1 depressive symptoms	0.51	0.10	4.86	<.001	.42
Gender (–1 = female, 1 = male)	–0.96	0.89	–1.08	.28	.10
Partner comorbidities (no/yes)	1.58	0.88	1.80	.08	.17
Patient self-disclosure	–6.32	4.37	–1.45	.15	.14
Partner self-disclosure	8.85	6.59	1.34	.18	.02
Patient Self-Disclosure \times Partner Self-Disclosure	–51.30	20.51	–2.50	.01	.23

Note. Effect size r for each t was computed with the following equation: $r = \sqrt{[t^2/(t^2 + df)]}$. $df = 111$.

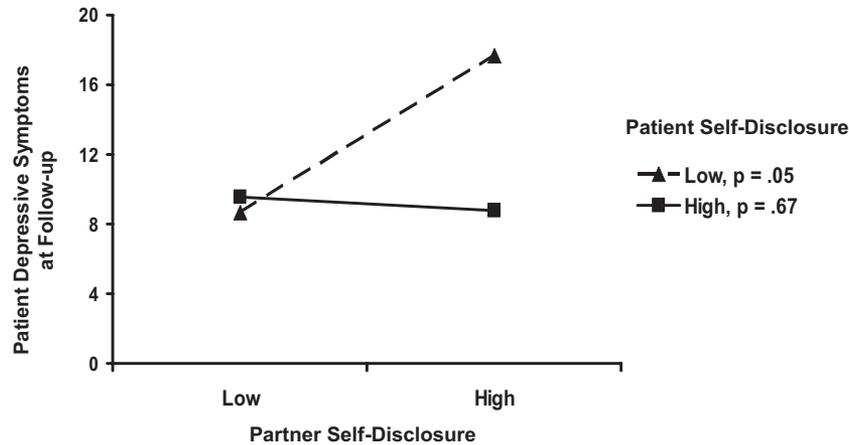


Figure 1. Association between patient self-disclosure and partner self-disclosure and depressive symptoms in patients at follow-up, controlling for their baseline depressive symptoms ($M = 13.6$).

were in the same range as the levels reported in the present study ($M_s = 0.29$ and 0.15 , respectively). The fact that patients disclosed more than partners is not surprising, given that patients were asked to introduce a topic. Taking a somewhat different approach by performing sequential analyses and focusing on distress measured a few days before the interaction task in patients only, Manne et al.'s study indicated that the more frequently a disclosure of the patient was followed by a disclosure of the partner, the less distress the patient reported. Our findings do not support the idea that mutual self-disclosure is associated with less distress than one-sided self-disclosure by the patient. Instead, the combination not examined in Manne et al.'s observational study—namely, little patient self-disclosure and much partner self-disclosure—appeared to be associated with relatively high levels of depressive symptoms at follow-up in both members of the couple.

What is noteworthy, based on the same sample, is that Manne et al.'s (2006) questionnaire data did show an association between demand–withdraw communication and distress in women with cancer. The demand–withdraw pattern is often observed in dis-

tressed couples and is characterized by one partner demanding change and the other partner trying to withdraw from the discussion (e.g., Christensen & Shenk, 1991). Similarly, Manne et al. found that couples who said they engaged more often in a communication pattern in which one partner pressured the other partner to talk about a cancer-related problem while the other partner withdrew from the conversation also reported higher distress than did couples who engaged less in such a demand–withdraw communication pattern. The partner disclose–patient nondisclose pattern that we found might be similar to a demand–withdraw pattern. In their role as caretaker, partners perhaps try to persuade the patient to disclose emotions and thoughts by disclosing their own feelings and concerns. Such attempts by partners to be supportive may be distressing to patients, either because their partners' worries burden them or because they prefer not to talk about their feelings and thoughts. More specifically, partners' disclosures of their own anxiety and fear about the cancer (e.g., "I fear I will lose you") may evoke guilt, anxiety, and distress in patients, both because they feel they cannot provide the reassurance their partner

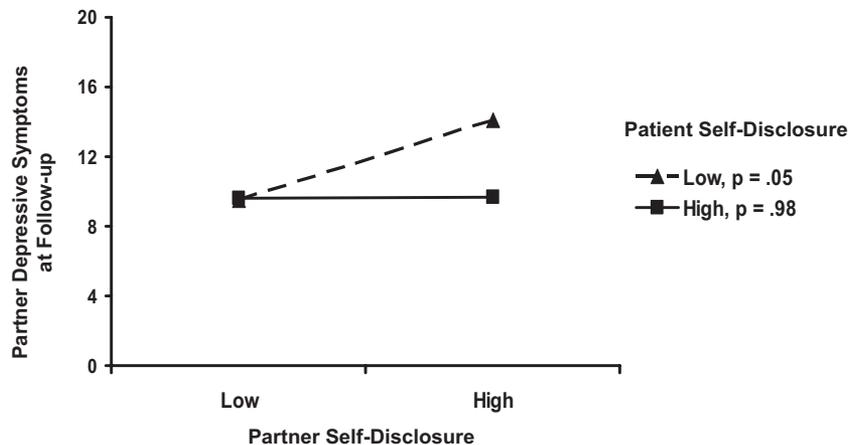


Figure 2. Association between patient self-disclosure and partner self-disclosure and depressive symptoms in partners at follow-up, controlling for their baseline depressive symptoms ($M = 13.0$).

needs that everything will be “okay,” and because it serves as a reminder of their own uncertain future. One alternative explanation for our finding of relatively high depressive symptoms in partners under the condition of high self-disclosure and low patient disclosure may be that partners feel alone in dealing with the disease. Partners may feel pushed away by patients who do not disclose, yet they depend on the patient for important cancer-related information (e.g., bodily sensations of the patient and physician-provided information). Future research may test our assumption that partner self-disclosures are intended to stimulate the patient to open up and provide a more definite answer to why the partner disclose–patient nondisclose pattern is distressing to both patients and partners.

Although the present findings did not show support for Hypothesis 1 (i.e., mutual self-disclosure was not found to be associated with the lowest levels of depressive symptoms), it may be that mutual self-disclosure has a social function in that it increases intimacy. Previous studies have shown that people who disclose more tend to be liked more than people who disclose less (for a review, see Collins & Miller, 1994). Furthermore, disclosing tends to cause people to like their listener more. Similarly, the interpersonal process model of intimacy posits that disclosures enhance perceptions of responsiveness and intimacy within couples (Laurenceau, Barrett, & Pietromonaco, 1998; Reis & Patrick, 1996). Support for this model has also been found in a study among women with breast cancer and their husbands (Manne, Ostroff, Rini, et al., 2004). Similarly, an intervention consisting of enhancing partner-assisted emotional disclosure did increase intimacy in patients and partners coping with cancer (Porter et al., 2009; cf. Porter et al., 2005). Perhaps the association between self-disclosure and intimacy is especially strong if couples show mutual self-disclosure.

In addition, we found that patients who were more distressed at baseline tended to engage in more self-disclosure about their cancer worries during the interaction task 2 months later. For partners, the association was in the same direction but only approached significance. This is in line with the conclusion of a review of 17 studies indicating that, in general, positive albeit modest associations between the intensity of the emotion and the degree of self-disclosing have been reported (Rimé et al., 1998). These associations were found to be considerably higher in laboratory induction studies than in recall studies. In the first type of studies, participants were exposed to an emotional stimulus and disclosing was assessed by self-report in a later session or observed in the waiting room immediately after the emotion induction. In recall-type studies, participants recalled a recent emotional event and reported both the distress associated with the event and the frequency of self-disclosure. In the context of cancer, some survey studies examining the degree to which patients disclosed their emotions to others have shown similar effects on emotional adjustment (Ullrich et al., 2008) but not all (Figueiredo et al., 2004; Porter et al., 2005).

There are several strengths of this study, as well as limitations, that should be considered in interpreting the findings. The observational method (i.e., interaction task) used is a key strength of our study because it avoids problems of same-method variance, social desirability, and memory distortions that might be present had we relied exclusively on self-report. We believe that this method may be able to capture better how people actually behave when engaged in supportive communication than would a questionnaire. At

the same time, our method has its limitations in that it may be perceived as somewhat artificial. The assumption is that the interaction resembles the conversations that patients and partners typically have. We tried to promote this by videotaping the conversation in the couples' homes, with the psychologist responsible for explaining the interaction task sitting in a separate room during their conversation. It is encouraging that both patients and partners indicated that the interaction did indeed reflect the way they normally talked about cancer-related issues. However, it has to be noted that it may resemble only conversations in which the patient introduces a concern and not the partner.

Another strength is our longitudinal design, which allowed us to test whether self-disclosure patterns assessed in couples are associated with changes in depressive symptoms in patients and their partners. Nevertheless, we cannot draw causal conclusions. Our results do suggest, however, that we need to consider that, contrary to the strong belief that talking about emotions and concerns is a good thing, some people may not be helped by talking about their emotions or by being confronted with the emotions of their significant other.

A limitation is the low response rate. Although the sample shows diversity in terms of demographic characteristics and disease stage, and participants differed in the degree to which they disclosed emotions and thoughts, only couples who were willing to talk about their cancer experiences participated in this study. It is important to note that the low response rate did not result in an exceptionally low distressed group. In contrast, the levels of depressive symptoms in the present sample were higher than the levels we found in a previous study among couples facing colorectal cancer that consisted of a questionnaire component only, with no requirement that participants discuss concerns (for female patients, $M = 13.4$; for male patients, $M = 7.7$; for female partners, $M = 11.3$; for male partners, $M = 7.8$; Tuinstra et al., 2004). It has to be noted that, in line with previous literature, only a minority of the participants were found to be at risk for developing clinical depression (i.e., about 35% were found to be at risk shortly after diagnosis and 19%–24% were found to be at risk 6 months later; Hagedoorn et al., 2008).

Furthermore, we only studied the quantity of self-disclosures and not the quality. In other words, disclosures could include emotions, thoughts, or wishes and could vary in intensity. It is important to note, however, that complaints or hostile speech were not coded as a self-disclosure. Also, our study is limited to depressive symptoms as an outcome variable. Future research is needed to examine whether the type or intensity of self-disclosure qualifies the interaction between patient and partner self-disclosure with respect to depressive symptoms and other possible outcomes, such as intimacy.

To our knowledge, this is the first study that examined associations between self-disclosure within couples coping with cancer and depressive symptoms in both partners of the couple. Although replication is important to examine the robustness of our findings, the results of our dyadic approach are consistent with the literature concerning self-disclosure in suggesting that disclosing cancer-related concerns and emotions to one's partner does not alleviate one's depressive symptoms. Partners' self-disclosure toward patients who bring up a concern but disclose little thereafter even appears to be harmful for both patients and their partners. Specifically, our findings suggest that such a partner disclose–patient

nondisclose pattern of interaction slows the recovery from depressive symptoms over time. Perhaps the intention of these partners is to encourage patient self-disclosure through their own self-disclosure. However, this strategy may backfire and result in more distress in both members of the couple if it is not successful in increasing patient self-disclosure. In case there is a mismatch in the need for self-disclosure within couples, partners with a strong need to talk about their emotions and concerns may be recommended to confide in someone else in their social network or to consult a health care professional.

References

- Badr, H., & Carmack Taylor, C. L. (2009). Sexual dysfunction and spousal communication in couples coping with prostate cancer. *Psycho-Oncology, 18*, 735–746.
- Boehmer, U., & Clark, J. A. (2001). Communication about prostate cancer between men and their wives. *Journal of Family Practice, 50*, 226–231.
- Bouma, J., Ranchor, A. V., Sanderman, R., & Van Sonderen, E. (1995). *Het meten van symptomen van depressie met de CES-D* [The measurement of symptoms of depression with the CES-D]. Groningen, the Netherlands: University of Groningen, Northern Centre for Healthcare Research.
- Bradbury, T. N., & Pasch, L. A. (1994). *The social support interaction coding system (SSICS)*. Unpublished coding manual. Los Angeles: University of California.
- Christensen, A., & Shenk, J. L. (1991). Communication, conflict, and psychological distance in nondistressed, clinic, and divorcing couples. *Journal of Consulting and Clinical Psychology, 59*, 458–463.
- Collins, N. L., & Miller, L. C. (1994). Self-disclosure and liking: A meta-analytic review. *Psychological Bulletin, 116*, 457–475.
- Cordova, M. J., Cunningham, L. L. C., Carlson, C. R., & Andrykowski, M. A. (2001). Social constraints, cognitive processing, and adjustment to breast cancer. *Journal of Consulting and Clinical Psychology, 69*, 706–711.
- Coyne, J. C., & Smith, D. A. F. (1991). Couples coping with a myocardial infarction: A contextual perspective on wives' distress. *Journal of Personality and Social Psychology, 61*, 404–412.
- Dagan, M., Sanderman, R., Schokker, M. C., Wiggers, T., Baas, P. C., van Haastert, M., & Hagedoorn, M. (2011). Spousal support and changes in distress over time in couples coping with cancer: The role of personal control. *Journal of Family Psychology, 25*, 310–318.
- Figueiredo, M. I., Fries, E., & Ingram, K. M. (2004). The role of disclosure patterns and unsupportive social interactions in the well-being of breast cancer patients. *Psycho-Oncology, 13*, 96–105.
- Gottman, J., & Notarius, C. (2000). Decade review: Observing marital interaction. *Journal of Marriage and the Family, 62*, 927–947.
- Hagedoorn, M., Dagan, M., Puterman, E., Hoff, C., Meijerink, J., DeLongis, A., & Sanderman, R. (in press). Relationship satisfaction in couples confronted with colorectal cancer: The interplay of past and current spousal support. *Journal of Behavioral Medicine*.
- Hagedoorn, M., Kuijer, R. G., Buunk, B. P., Dejong, G. M., Wobbles, T., & Sanderman, R. (2000). Marital satisfaction in patients with cancer: Does support from intimate partners benefit those who need it the most? *Health Psychology, 19*, 274–282.
- Hagedoorn, M., Sanderman, R., Bolks, H. N., Tuinstra, J., & Coyne, J. C. (2008). Distress in couples coping with cancer: A meta-analysis and critical review of role and gender effects. *Psychological Bulletin, 134*, 1–30.
- Harrison, J., Maguire, P., & Pitceathly, C. (1995). Confiding in crisis: Gender differences in pattern of confiding among cancer patients. *Social Science & Medicine, 41*, 1255–1260.
- Heyman, R. E., & Vivian, D. (1997). *RMICS: Rapid Marital Interaction Coding System: Training manual for coders*. Unpublished manuscript, State University of New York at Stony Brook.
- Hinnen, C., Hagedoorn, M., Sanderman, R., & Ranchor, A. V. (2007). The role of distress, neuroticism and time since diagnosis in explaining support behaviors in partners of women with breast cancer: Results of a longitudinal analysis. *Psycho-Oncology, 16*, 913–919.
- Kayser, K., Sormanti, M., & Strainchamps, E. (1999). Women coping with cancer: The influence of relationship factors on psychosocial adjustment. *Psychology of Women Quarterly, 23*, 725–739.
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York: Guilford Press.
- Kuijer, R. G., Ybema, J. F., Buunk, B. P., De Jong, G. M., Thijs-Boer, F., & Sanderman, R. (2000). Active engagement, protective buffering, and overprotection: Three ways of giving support by intimate partners of patients with cancer. *Journal of Social and Clinical Psychology, 19*, 256–275.
- Laurenceau, J. P., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology, 74*, 1238–1251.
- Lepore, S. J. (2001). A social-cognitive processing model of emotional adjustment to cancer. In A. Baum & B. Andersen (Eds.), *Psychosocial interventions for cancer* (pp. 99–118). Washington, DC: American Psychological Association.
- Lepore, S. J., Fernandez-Berrocá, P., Ragan, J., & Ramos, N. (2004). It's not that bad: Social challenges to emotional disclosure enhance adjustment to stress. *Anxiety Stress and Coping, 17*, 341–361.
- Lepore, S. J., Ragan, J. D., & Jones, S. (2000). Talking facilitates cognitive-emotional processes of adaptation to an acute stressor. *Journal of Personality and Social Psychology, 78*, 499–508.
- Mallinger, J. B., Griggs, J. J., & Shields, C. G. (2006). Family communication and mental health after breast cancer. *European Journal of Cancer Care, 15*, 355–361.
- Manne, S., Dougherty, J., Veach, S., & Kless, R. (1999). Hiding worries from one's spouse: Protective buffering among cancer patients and their spouses. *Cancer Research, Therapy and Control, 8*, 175–188.
- Manne, S., Ostroff, J., Rini, C., Fox, K., Goldstein, L., & Grana, G. (2004). The interpersonal process model of intimacy: The role of self-disclosure, partner disclosure, and partner responsiveness in interactions between breast cancer patients and their partners. *Journal of Family Psychology, 18*, 589–599.
- Manne, S., Ostroff, J., Sherman, M., Heyman, R. E., Ross, S., & Fox, K. (2004). Couples' support-related communication, psychological distress, and relationship satisfaction among women with early stage breast cancer. *Journal of Consulting and Clinical Psychology, 72*, 660–670.
- Manne, S. L., Norton, T. R., Winkel, G., Ostroff, J. S., Fox, K., & Grana, G. (2007). Protective buffering and psychological distress among couples coping with breast cancer: The moderating role of relationship satisfaction. *Journal of Family Psychology, 21*, 380–388.
- Manne, S. L., Ostroff, J. S., Norton, T. R., Fox, K., Goldstein, L., & Grana, G. (2006). Cancer-related relationship communication in couples coping with early stage breast cancer. *Psycho-Oncology, 15*, 234–247.
- Marin, T. J., Holtzman, S., DeLongis, A., & Robinson, L. (2007). Coping and the response of others. *Journal of Social and Personal Relationships, 24*, 951–969.
- Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology, 66*, 219–230.
- Pennebaker, J. W. (1997). Writing about emotional experiences as a therapeutic process. *Psychological Science, 8*, 162–166.
- Porter, L. S., Keefe, F. J., Baucom, D. H., Hurwitz, H., Moser, B., Patterson, E., & Kim, H. J. (2009). Partner-assisted emotional disclosure for patients with gastrointestinal cancer. *Cancer, 115*, 4326–4338.
- Porter, L. S., Keefe, F. J., Hurwitz, H., & Faber, M. (2005). Disclosure

- between patients with gastrointestinal cancer and their spouses. *Psycho-Oncology*, *14*, 1030–1042.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Newbury Park, CA: Sage.
- Reis, H. T., & Patrick, B. C. (1996). Attachment and intimacy: Component processes. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 523–563). New York: Guilford Press.
- Rimé, B., Finkenauer, C., Luminet, O., Zech, E., & Philippot, P. (1998). Social sharing of emotion: New evidence and new questions. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (pp. 225–258). Chichester, United Kingdom: Wiley.
- Roger, D., de la Banda, G. G., Lee, H. S., & Olason, D. T. (2001). A factor-analytic study of cross-cultural differences in emotional rumination and emotional inhibition. *Personality and Individual Differences*, *31*, 227–238.
- Tuinstra, J., Hagedoorn, M., Van Sonderen, E., Ranchor, A. V., Van den Bos, G. A. M., Nijboer, C., & Sanderman, R. (2004). Psychological distress in couples dealing with colorectal cancer: Gender and role differences and intracouple correspondence. *British Journal of Health Psychology*, *9*, 465–478.
- Ullrich, P. M., Rothrock, N. E., Lutgendorf, S. K., Jochimsen, P. R., & Williams, R. D. (2008). Adjustment and discussion of cancer: A comparison of breast and prostate cancer survivors. *Psychology & Health*, *23*, 391–406.
- Zech, E., & Rimé, B. (2005). Is talking about an emotional experience helpful? Effects on emotional recovery and perceived benefits. *Clinical Psychology & Psychotherapy*, *12*, 270–287.