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Chris Hinnen ^a; Adelita V. Ranchor ^a; Pieter C. Baas ^b; Robbert Sanderma ^a; Mariët Hagedoorn ^a

^a Northern Centre for Healthcare Research, University Medical Centre Groningen, University of Groningen, Groningen, The Netherlands ^b Martini Hospital, Groningen, The Netherlands

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Partner support and distress in women with breast cancer: The role of patients' awareness of support and level of mastery

Chris Hinnen^a, Adelita V. Ranchor^a, Pieter C. Baas^b,
Robbert Sanderman^a and Mariët Hagedoorn^{a*}

^aNorthern Centre for Healthcare Research, University Medical Centre Groningen, University of Groningen, A. Deusinglaan 1, Groningen, The Netherlands; ^bMartini Hospital, Van Swietenlaan 4, Groningen, The Netherlands

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The aim of the present study was to investigate the associations between partners' ways of providing support (both active engagement and protective buffering) and distress in women with breast cancer as a function of patients' awareness of the support received and their sense of mastery. These associations were investigated both cross-sectionally and longitudinally (i.e. changes in distress over time). At 3 months (T1) after diagnosis, women with breast cancer and their partners ($n = 82$ couples) were assessed regarding partners' supportive behaviour. Women also indicated their sense of mastery. At both 3 and 9 months (T2) after diagnosis, women reported their level of distress. Cross-sectional as well as longitudinal analyses showed that active engagement was unrelated to distress, regardless of patients' awareness of the support received and their feelings of mastery. In contrast, perceived protective buffering was found to be associated with more concurrent distress (i.e. cross-sectionally). Moreover, protective buffering that was reported by partners but remained unnoticed by patients was associated with higher levels of concurrent distress, but only for patients who were low in mastery. Over time, protective buffering that remained unnoticed by patients was associated with more distress, regardless of women's sense of mastery.

Keywords: relationship-focused coping; active engagement; protective buffering; invisible support; longitudinal

Introduction

Social support is a critical component of adaptation when confronted with an illness such as breast cancer. In the context of intimate relationships, partners are the primary source of support and have been found to play a unique role in the adaptation process of women with breast cancer (Helgeson & Cohen, 1996; Manne et al., 2003; Pistrang & Barker, 1995). Studies have found that patients who perceive their partner as available and who are

*Corresponding author. Email: m.hagedoorn@med.umcg.nl

satisfied with the support they receive from their partner report less distress, while patients who perceive their partner to be unavailable or critical and dismissive were found to report more problems adapting to the disease (e.g. Baider, Ever-Hadani, Goldzweig, Wygoda, & Peretz, 2003; Manne et al., 2004).

In the present study, we focused on supportive behaviour rather than perceived availability. Specifically, we addressed the *way* in which partners provided emotional or other types of support (Hagedoorn et al., 2000; Kuijer et al., 2000). For example, dealing with the other person's fears and worries by involving the other in conversations is one way of providing emotional support, while minimising the fears and worries of the other person is another way. Few studies have investigated the associations between different ways of spousal support and distress in people confronted with cancer, taking into account (1) patients' awareness of the way in which support is provided by partners (Bolger, Zuckerman, & Kessler, 2000), (2) individual difference characteristics of patients (Kobasa & Pucetti, 1983), such as patients' sense of mastery (i.e. perceived control), and (3) the time frame (short-term or long-term effects) adopted (DeLongis & Holtzman, 2005). The current study aims to fill these gaps.

Ways of providing support

According to Coyne & DeLongis (1986), coping with chronic illness is a dyadic process in which partners not only have to deal with their own distress (i.e. emotion-focused coping) and with various instrumental tasks (i.e. problem-focused coping), but also with the needs and worries of the other person (i.e. relationship-focused coping). Depending on situational, personal and relational factors, partners may use various positive (e.g. showing empathy and interest) or negative (e.g. withdrawal and dismissal) relationship-focused coping strategies (O'Brien & DeLongis, 1996). In the literature, active engagement and protective buffering have been identified as two broad classes of relationship-focused coping strategies (Coyne & DeLongis, 1986) or ways of providing support (Hagedoorn et al., 2000; Kuijer et al., 2000). *Active engagement* is characterised by involving one's partner in discussions, asking how the patient feels and other problem- and emotion-focused strategies. Active engagement is perceived as supportive and helpful by most people and associations have been found between active engagement and positive outcomes such as self-efficacy (Coyne & Smith, 1994; Kuijer et al., 2000) and marital satisfaction (Hagedoorn et al., 2000). However, in contrast to expectations, studies have failed to find an association between active engagement and distress in chronically ill patients (De Ridder, Schreurs, & Kuijer, 2005; Hagedoorn et al., 2000; Kuijer et al., 2000). *Protective buffering* is characterised by dismissing concerns or negative emotions and yielding to a partner in order to avoid disagreement. Protective buffering strategies are generally perceived as unhelpful and may interfere with cognitive and emotional processing of stressful situations (Manne et al., 2007). In line with this, protective buffering has been found to be associated with less marital satisfaction (Hagedoorn et al., 2000) and with worse mental health (De Ridder et al., 2005; Manne et al., 2007). However, some studies have found no link between protective buffering and concurrent distress (Hagedoorn et al., 2000; Kuijer et al., 2000; Suls, Green, Rose, Lounsbury, & Gordon, 1997). These null and inconsistent results may indicate that the association between active engagement and

protective buffering on the one hand and distress on the other hand are present only under certain conditions (Manne et al., 2007).

Patients' awareness of partner support

Bolger, Zuckerman and Kessler (2000) have suggested that recipients' awareness of the support received may impact the effectiveness of support. Specifically, being aware that one receives and needs help may undermine personal resources such as one's self-esteem and may result in more distress, while support that remains unnoticed (i.e. reported by the provider but not perceived by the recipient) will have no costs, only positive outcomes. The findings of two recent studies supported this idea with respect to both practical and emotional support (Bolger & Amarel, 2007; Shrout, Herman, & Bolger, 2006). Hence, it could be expected that active engagement reported by partners but not perceived by patients (i.e. unnoticed active engagement) would be helpful, while active engagement perceived by patients would not be helpful. Bolger and colleagues (2000) also suggest that protective buffering support may not be deleterious as long as it remains outside patients' awareness. Specifically, partners may be successful in hiding their own fears and worries and if they are, patients do not have to deal with their partner's concerns, perhaps preventing burden and distress in patients. In accordance, it can be argued that protective buffering that was reported by partners but not perceived by patients (i.e. unnoticed protective buffering) would not be harmful, whereas protective buffering support perceived by patients would be unhelpful.

Mastery

It has been suggested that having a supportive partner may be more important for some people than for other people (e.g. Collins & Feeney, 2000). Put differently, intrapersonal characteristics may moderate the association between different ways of providing support and distress. Consistent with an established tradition of research that places broad efficacy expectations (e.g. mastery, fatalism, locus of control, attachment) as central elements that will impact the outcome of social support processes (e.g. Goodwin et al., 2002; Kobasa & Pucetti, 1983), this study examines the possible moderating role of mastery.

Mastery is a development-based mental representation about one's ability to control life as it presents itself and to influence events personally, in contrast to feeling fatalistic and helpless (Edwards, 2002; Pearlin & Schooler, 1978). It is possible that the felt inadequacy to deal with stressors of people low in mastery makes them more vulnerable to poorer adjustment, especially when support is unhelpful (Hobfoll & Walfisch, 1984). In contrast, people who perceive more control over their lives may inherently be more resilient and, therefore, may show less distress even when support is unhelpful (Carver, 1998; Kobasa & Pucetti, 1983). In accordance, it can be argued that perceived protective buffering may be more harmful for women low on mastery than for women high on mastery.

Overall, unnoticed protective buffering is not expected to be associated with more distress. However, there may be a positive association between unnoticed protective buffering and distress in women low on mastery. These women tend to appraise stressors as more threatening compared to women high on mastery (Felsten, 1991). As a consequence of unnoticed protective buffering, patients low on mastery in particular may perceive a discrepancy between the impact their illness appears to have on their partners and the impact their illness has on themselves. Such a discrepancy is likely to add to their distress.

Moreover, people low in mastery may not only be hampered more by unhelpful interactions; they may also profit less from supportive interactions, despite the possibility that they may be in need of more support (Hobfoll & Lerman, 1988). The cost of needing support, as was indicated by Bolger and colleagues (2000), may be more prominent in people low on mastery, as it may strengthen their belief that they are unable to solve problems themselves. Therefore, people low on mastery may be less aided by support as people high on mastery (Felsten, 1991). In accordance, Goodwin et al. (2002) showed that social support did have a smaller positive impact on mental health in people high in fatalism (cf. low mastery) than in people low in fatalism. Similarly, perceived active engagement may be effective in people high in mastery but not in people low in mastery which could explain the null findings between active engagement and distress in previous studies.

Time

Finally, the time-frame adopted (i.e. cross-sectional or longitudinal) may explain variation in the effectiveness of support (DeLongis & Holtzman, 2005). Support that seems effective in the short-term (i.e. cross-sectionally) may or may not be effective in reducing distress over time (i.e. longitudinally), while support that seems ineffective or even deleterious in the short-term may become effective or may no longer be deleterious over time. For example, DeLongis & Holtzman (2005) reported that while empathic responding did not always have an immediate beneficial effect, such behaviours were found to be associated with future favourable outcomes, such as a decrease in marital tension over time. Similarly, the effectiveness of different ways of providing support may vary as a function of the time-frame adopted (short-term effect or changes over time). The only two previous studies (De Ridder et al., 2005; Suls et al., 1997) with a prospective design investigating the outcome of ways of providing support did not find a relationship between perceived active engagement and changes in psychological distress over time. Moreover, only De Ridder et al. (2005) found a weak association between the use of protective buffering strategies by partners as perceived by patients and changes in distress in patients with asthma and diabetes over time. Neither of these studies, however, investigated the impact of active engagement and protective buffering that occurs outside patients' awareness or included mastery as a potential moderator. Therefore, in the present study we explored the associations between different ways of providing support and concurrent distress as well as changes in distress over time by testing our hypotheses both cross-sectionally and longitudinally.

Hypotheses

The current study tested the following hypotheses with respect to the associations between partners' active engagement and protective buffering and distress in patients:

- (1) Perceived active engagement is negatively related to distress, but only in patients with a higher sense of mastery.
- (2) Unnoticed active engagement is associated with less distress in patients.
- (3) Perceived protective buffering is associated with more distress, especially in patients with a weaker sense of mastery.
- (4) Unnoticed protective buffering is associated with more distress, but only in patients with a weaker sense of mastery.

Method

Procedure and participants

The data for the present study was collected as part of a larger study investigating the influence of intimate relationship dynamics on adaptation to breast cancer in the first year after diagnosis. Participants were recruited from five hospitals in the Netherlands. There were multiple assessments within a 12-month period, including three extensive self-report assessments and briefer telephone assessments every six weeks. Inclusion criteria were: within three months after diagnosis, living with a partner, willingness to participate in the study by women with cancer and their male partners, woman's age between 30 and 75 years, prognosis of at least 15 months survival, no previous cancer history for either the woman or the partner, and both fluent in Dutch. In a procedure required by the hospital Medical Ethics Committee, women received a letter from their physician inviting the couple to participate in the study. Women interested were encouraged to enlist their partners and to mail back consent forms. After approximately four weeks, couples who did not return the consent form were contacted by the study team with a reminder.

A total of 284 patient couples received information about the study. In the end, 92 couples (a response rate of 32%) participated in the study. This response rate reflects the burden of the intensive design of the study and, perhaps more importantly, the consent procedure required by the Medical Ethics Committee and the initiative it required from the patients. Nonetheless, this percentage is comparable to what has been found in some well-resourced studies investigating couples (Manne et al., 2005; Manne et al., 2006). Not surprisingly, the main reason (31%) for not participating was that couples indicated that participation was too great a burden. In addition, 28% of the couples were simply not interested; in 15% of the cases a partner was not willing to participate; 10% indicated that they wanted to put the cancer experience behind them; and another 16% of the couples gave other reasons for not participating in the study.

For the present study, we selected those women with breast cancer and their partners who had no missing data on the variables under study at both three (T1) and nine months (T2) after diagnosis. A six-month period was considered long enough to detect meaningful changes in distress. This resulted in a group of 82 patients and their partners. *T*-tests revealed no differences in socio-demographics between the participants included and excluded from analyses. Participating women with cancer were on average 52 ($SD=9.0$) years old and their partners were on average 54 ($SD=9.0$) years old. Almost half of the women with cancer (46%, $n=38$) and three quarters of their partners (67%, $n=55$) had a paid job. Twenty nine percent of the patients ($n=24$) and their partners ($n=24$) had a lower level of education, respectively, 45% ($n=37$) and 39% ($n=32$) had a secondary level of education and 26% ($n=21$) and 32% ($n=26$) had a higher level of education. All women with cancer received surgery and 73% ($n=52$) received adjuvant treatment. At T1 (i.e. three months after diagnosis) 63% ($n=52$) of the women were still in treatment. Of these women, 24 received chemotherapy, 18 received radiotherapy, 12 received hormonal therapy and three received (also) alternative therapies.

Measures

The current study applied a longitudinal design in which the predictor variables (i.e. active engagement and protective buffering as perceived by patients and as reported by partners) and the moderator variable (i.e. mastery) were assessed at three months after

diagnosis (T1), and the outcome variable (i.e. distress) was assessed at three (T1) and nine months after diagnosis (T2).

Active engagement and protective buffering

Patients were asked to judge to what extent their partners adopted active engagement and protective buffering strategies as ways of providing support. A parallel measure assessed the partners' perception of their own behaviour. These measures were developed by Buunk, Berkhuysen, Sanderman, Nieuwland, and Ranchor (1996), and have been used extensively (De Ridder et al., 2005; Hagedoorn et al., 2000; Kuijer et al., 2000). The active engagement scale consists of five items (e.g. 'My partner asks me how I feel'/'I ask my partner how she feels') and eight items measure protective buffering (e.g. 'My partner tries to keep his worries about me to himself'/'I try to keep my worries about my wife to myself'). All items were answered on a five-point scale ranging from 'never' (1) to 'very often' (5). Cronbach's alpha for the active engagement scale was 0.78 and 0.82 as assessed by patients and partners, respectively. Cronbach's alpha for the protective buffering scale was 0.61 and 0.76 as assessed by patients and partners, respectively.

Mastery

Patients' general perception of control was measured using the Mastery scale of Pearlin and Schooler (1978). This seven-item self-report questionnaire assesses overall perceived control over one's life and has been used regularly in the context of stress and coping (e.g. Dabbs et al., 2003). These studies show that the scale has adequate reliability and validity. Items include 'I have little control over the things that happen to me' and 'I feel helpless in dealing with the problems of life' that were answered on a five-point scale, ranging from 'totally agree' (1) to 'totally disagree' (5). Cronbach's alpha in the present study was 0.74.

Distress

Patients completed the Hospital Anxiety and Depression Scale (HADS) (Spinhoven et al., 1997; Zigmond & Snaith, 1983) in order to assess distress at three (T1) and nine months after diagnosis (T2). The HADS is a 14-item self-report scale assessing feelings of anxiety and depressive symptoms on a four-point scale (0–3). In the present study, the total score was calculated as an indicator of psychological distress. Harter, Woll, Wunsch, Bengel, and Reuter (2006) found that with a large sample of medically ill patients, there was no advantage of using the individual depression and anxiety subscales of the HADS over a single summary scale. Cronbach's alpha for the total score was 0.87 at T1 and 0.92 at T2, further supporting the use of the total scale.

Statistical analysis

The associations between the main variables and socio-demographics (i.e. age, education level, employment status, in treatment yes/no, type of treatment) were explored to see which demographic variables should be included in the model as covariates. To test the hypotheses, multiple hierarchical regression analyses were performed.

To test the associations between active engagement and protective buffering that occurred outside patients' awareness and distress, patients' accounts were entered into the regression first, followed by partners' reports (i.e. support reported by partners, controlling for the support perceived by patients). This procedure is in accordance with Bolger et al. (2000) and indicates the support provided by partners but unnoticed by patients (i.e. unnoticed active engagement and unnoticed protective buffering, respectively). Moreover, in order to investigate the moderating role of mastery, interaction terms were computed as the product of the centered scores (i.e. centered around zero) on the component variables of the interaction term to minimise multicollinearity (Aiken & West, 1991). An additional advantage of this method is that the component variables of the interaction term remain dimensional which limits the loss of power and prevents an overestimation of the results (Coyne & Whiffen, 1995). As a visual aid to determine the direction of significant interactions between support and mastery, the regression lines for the association between spousal support and distress were drawn at two levels of mastery ($\text{mean} \pm 1 \text{ SD}$). As suggested by Aiken & West (1991), additional regression analyses were completed to test the significance of the simple slopes.

Results

Preliminary analyses

Independent *T*-tests revealed that for women with breast cancer, being in treatment or having a paid job was not associated with any of the variables under study. Also, analyses of variance showed that type of treatment was not associated with any study variable. We did find that women with a lower level education ($M = 22.25$, $SD = 4.41$) had a significantly lower sense of mastery, $F(2, 79) = 4.82$, $p = 0.01$, than women with a medium ($M = 25.16$, $SD = 4.00$) or high level of education ($M = 25.81$, $SD = 4.45$). Also, women with a lower level of education ($M = 2.86$, $SD = 0.61$) had partners who reported the use of significantly more protective buffering strategies, $F(2, 79) = 10.23$, $p < 0.001$, than women with a medium ($M = 2.41$, $SD = 0.61$) or high level of education ($M = 2.10$, $SD = 0.54$). Similarly, partners with a lower level of education ($M = 2.85$, $SD = 0.58$) reported the use of more protective buffering strategies, $F(2, 79) = 10.33$, $p < 0.001$, than partners with a medium ($M = 2.45$, $SD = 0.70$) or high level of education ($M = 2.10$, $SD = 0.45$). Furthermore, older partners reported the use of more protective buffering strategies ($r = 0.26$, $p < 0.05$).

Women who reported more distress at T2 were younger ($r = -0.22$, $p < 0.05$) and were significantly more likely ($t(80) = 2.01$, $p = 0.05$) to have a partner who had a paid job at T1 ($M = 9.20$, $SD = 7.82$) than to have a partner who did not have a paid job at T1 ($M = 5.81$, $SD = 5.40$). Thus, except for patients' age and partners' employment status, socio-demographic variables were not related with patients' distress and could therefore be excluded as covariates from further analysis (Christenfeld, Sloan, Carroll, & Greenland, 2004).

Table 1 shows that patients' perception of active engagement and partners' report of active engagement as well as patients' perception of protective buffering and partners' report of protective buffering were related ($r = 0.46$, $p < 0.001$ and $r = 0.31$, $p < 0.001$, respectively). The moderate strength of these associations indicates that patients and partners may disagree about the way support was provided, suggesting that support may have been provided that remained unnoticed by patients.

Table 1. Correlations among the variables under study.

	1	2	3	4	5	6	Mean	SD
1 Partner reported active engagement							4.20	0.51
2 Partner reported protective buffering	-0.14						2.45	0.66
3 Patient perceived active engagement	0.46**	-0.15					3.98	0.63
4 Patient perceived protective buffering	-0.23*	0.31*	-0.34**				2.11	0.56
5 Mastery	0.02	-0.26*	0.11	-0.09			24.48	4.43
6 Distress T1	0.09	0.17	-0.17	0.28*	-0.27*		9.35	6.40
7 Distress T2	0.10	0.30**	-0.10	0.23*	-0.36**	0.54**	8.09	7.30

Notes: * $p < 0.05$, ** $p < 0.01$.

The role of active engagement

Regression analyses showed that when controlling for patients' age and partners' employment status, active engagement as perceived by patients was not associated with distress and that this association was also not moderated by mastery (Table 2). Thus *Hypothesis 1* stating that perceived active engagement would be associated with less distress only in women with a higher sense of mastery was not supported. Mastery was found to have a main effect on distress, indicating that women with a stronger sense of mastery reported less distress. Unnoticed active engagement (i.e. partner accounts of active engagement after controlling for patient accounts) was also not found to be associated with distress at T1, meaning that *Hypothesis 2* was not supported.

In the longitudinal analyses (Table 2), we also found no significant associations between active engagement – perceived or unnoticed – and distress at T2, after controlling for distress at T1, regardless of patients' sense of mastery. Thus, the hypotheses regarding the association between active engagement and changes in distress over time were not supported. Distress at T1 and mastery did have a main effect on distress at T2, indicating that women who reported more distress at three months after diagnosis and women who reported a weaker sense of mastery reported more distress at nine months after diagnosis.

The role of protective buffering

Next, we investigated the association between protective buffering and distress (Table 3). As expected, patients' perceived protective buffering did have a positive association with distress at T1, explaining 9% of the variance in distress. However, this association was not found to be moderated by mastery, which is in contrast with *Hypothesis 3*. Next, we investigated whether unnoticed protective buffering (i.e. partners' account of protective buffering controlling for patients' account) was associated with distress at T1 in women with a low sense of mastery (*Hypothesis 4*).

Figure 1 shows that unnoticed protective buffering support was differently associated with distress depending on patients' sense of mastery. The simple slope for patients low on mastery differed significantly from zero ($B = 2.85$, $p = 0.04$). In contrast, the simple slope for patients high on mastery did not differ from zero ($B = -2.34$, $p = 0.13$). This indicates that more unnoticed protective buffering was associated with more distress in women with

Table 2. Summary of hierarchical regression analyses for patient perceived and partner reported active engagement (AE) and mastery predicting patient distress ($N = 82$).

		Hypothesis 1				Hypothesis 2			
		B (p value)	SE	ΔF (p value)	ΔR^2	B (p value)	SE	ΔF (p value)	ΔR^2
Cross-sectional analysis: Distress T1									
1	Patient's age	-0.12 (0.23)	0.10	1.22 (0.30)	0.03	-0.09 (0.39)	0.10	1.22 (0.30)	0.03
	Partner's employment	-0.03 (0.99)	1.86			-0.63 (0.74)	1.91		
2	Patient perceived AE	-1.34 (0.22)	1.09	2.30 (0.12)	0.03	-2.68 (0.04)	1.25	2.50 (0.12)	0.03
3	Partner reported AE					2.40 (0.12)	1.54	2.43 (0.12)	0.03
4	Mastery	-0.38 (0.02)	0.15	6.03 (0.02)	0.07				
5	Mastery X perceived AE	-0.42 (0.15)	0.29	2.09 (0.15)	0.02				
Longitudinal analysis: Distress T2									
1	Distress T1	0.52 (<0.001)	0.11	11.78 (<0.001)	0.31	0.57 (<0.001)	0.11	11.78 (<0.001)	0.31
	Patient's age	-0.09 (0.35)	0.10			-0.06 (0.58)	0.10		
	Partner's employment	-1.26 (0.50)	1.84			-1.51 (0.43)	1.90		
2	Patient perceived AE			0.03 (0.87)	0.00			0.03 (0.87)	0.00
3	Partner reported AE	-0.12 (0.91)	1.09			-0.51 (0.69)	1.28		
4	Mastery	-0.40 (0.01)	0.16	6.54 (0.01)	0.06	0.81 (0.60)	1.56	0.27 (0.60)	0.00
5	Mastery X perceived AE	0.26 (0.37)	0.29	0.82 (0.37)	0.01				

Table 3. Summary of hierarchical regression analyses for patient perceived and partner reported protective buffering (PB) and mastery predicting patient distress ($N = 82$).

		Hypothesis 3			Hypothesis 4				
		<i>B</i> (<i>p</i> value)	<i>SE</i>	ΔF (<i>p</i> value)	ΔR^2	<i>B</i> (<i>p</i> value)	<i>SE</i>	ΔF (<i>p</i> value)	ΔR^2
Cross-sectional analysis: Distress T1									
1	Patient's age	-0.13 (0.18)	0.09	1.22 (0.30)	0.03	-0.16 (0.09)	0.09	1.22 (0.30)	0.03
	Partner's employment	-0.39 (0.83)	1.80			-0.47 (0.79)	1.75		
2	Patient perceived PB	2.95 (0.02)	1.18	7.64 (0.01)	0.09	3.17 (0.01)	1.19	7.64 (0.01)	0.09
3	Partner reported PB					0.25 (0.82)	1.07	1.20 (0.28)	0.01
4	Mastery	-0.37 (0.01)	0.15	6.05 (0.02)	0.06	-0.38 (0.01)	0.15	5.02 (0.03)	0.05
5	Mastery X perceived PB	-0.34 (0.15)	0.24	2.08 (0.15)	0.02				
6	Mastery X reported PB					-0.59 (0.01)	0.22	7.34 (0.01)	0.07
Longitudinal analysis: Distress T2									
1	Distress at T1	0.45 (<0.001)	0.12	11.78 (<0.001)	0.31	0.47 (<0.001)	0.12	11.78 (<0.001)	0.31
	Patient's age	-0.11 (0.28)	0.10			-0.11 (0.25)	0.10		
	Partner's employment	-1.12 (0.54)	1.82			-1.24 (0.49)	1.79		
2	Patient perceived PB	1.44 (0.25)	1.24	1.35 (0.25)	0.01	0.78 (0.54)	1.28	1.35 (0.25)	0.01
3	Partner reported PB					2.08 (0.06)	1.09	5.57 (0.02)	0.05
4	Mastery	-0.41 (0.01)	0.16	6.71 (0.01)	0.06	-0.33 (0.04)	0.16	4.62 (0.04)	0.04
5	Mastery X perceived PB	-0.21 (0.39)	0.24	0.74 (0.39)	0.01				
6	Mastery X reported PB					0.10 (0.68)	0.23	0.17 (0.68)	0.00

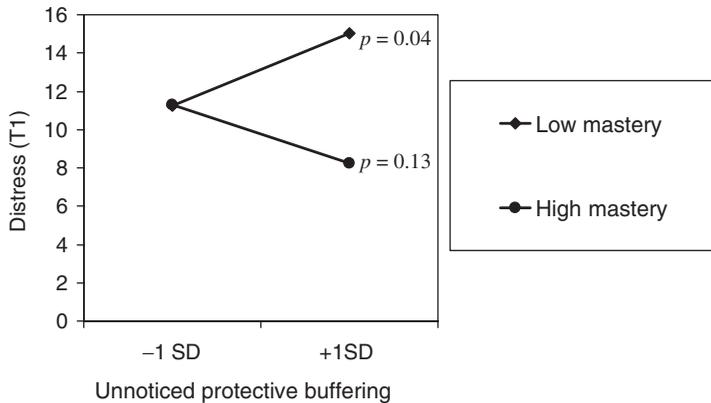


Figure 1. Distress at T1 explained by protective buffering support reported by partners and not perceived by patients and mastery.

Note: p -values refer to the discrepancy from zero of the simple slopes.

a lower sense of mastery but not in women with a higher sense of mastery. Moreover, the significant interaction effect indicates that, in comparison to women with a weaker sense of mastery, women with a higher sense of mastery reported less distress when they received more unnoticed protective buffering. Specifically, additional tests of differences between the predicted values on distress showed that the value in the low mastery group differed significantly from that in the high mastery group when men indicated to be engaged in much protective buffering ($B = -0.77$, $p = 0.001$), whereas no significant differences between the two groups was observed in the case of little protective buffering ($B = 0.25$, $p = 0.82$). These findings are in line with *Hypothesis 4* which states that unnoticed protective buffering would be associated with more distress in women with a lower sense of mastery.

The results of the longitudinal analyses (Table 3) revealed that perceived protective buffering was not associated with more distress at T2, after controlling for distress at T1 and regardless of women's sense of mastery. However, unnoticed protective buffering was found to be associated with more distress over time.

Discussion

The main findings of the present study indicate that active engagement was not related to distress, whereas the association between protective buffering and distress was found to be influenced by patients' awareness, their sense of mastery and by the time-frame adopted. Women who perceived their partner as engaging relatively often in protective buffering strategies showed more concurrent distress. Furthermore, women with a higher sense of mastery reported less concurrent distress than women with a lower sense of mastery if their partner engaged relatively often in protective buffering that remained unnoticed by these women. In the long term, however, protective buffering that was reported by partners but unnoticed by patients was associated with more distress, regardless of patients' sense of mastery.

The finding that perceived protective buffering was associated with more concurrent distress (i.e. cross-sectional) is in line with some (Manne, Taylor, & Dougherty, 1997; Manne et al., 2007), but not all the previous work

(Hagedoorn et al., 2000; Kuijer et al., 2000). Protective buffering may be unhelpful and lead to more distress, but an alternative explanation for the association might be that patients who are more distressed elicit more protective buffering strategies from their partner. Although Suls et al. (1997) found some support for this reasoning, the present results do not seem to support this possibility as one would also expect distress in patients and protective buffering reported by partners to be related. In the present study, we found no such association.¹ Over time, protective buffering perceived by women with breast cancer was not associated with more distress, which is in contrast with some (De Ridder et al., 2005; Manne, Ostroff, Winkel, & Grana, 2005) but not all previous findings (Suls et al., 1997).

Cross-sectionally, we found high levels of unnoticed protective buffering support to be differently associated with distress depending on the women's sense of mastery. In line with our fourth hypothesis, women low on mastery reported more distress when partners used more protective buffering that remained unnoticed by patients. In women high on mastery, more unnoticed protective buffering was not associated with concurrent distress. Thus, the notion by Bolger et al. (2000) that protective buffering may not be detrimental to the recipient as long as it occurs outside awareness was only found to be true for women high on mastery and only in the short term.

The interaction effect of unnoticed protective buffering by mastery on distress may be explained by arguing that protective buffering strategies, even when the actual buffering behaviours remain unnoticed, can give a patient the feeling that her partner is oblivious to her suffering imposed by the illness as he does not express his own concerns and tries to act as if everything is fine. This may be more distressing for women low on mastery than for women high on mastery, as it is in contrast with their own appraisal of the situation and distress levels. An alternative explanation for the interaction effect might be that women low on mastery may be especially contaminated by the distress of their partner that may underlie the use of more protective buffering strategies. While partners may use protective buffering strategies to deal with and mask their own strong emotions (Hinnen, Hagedoorn, Sanderman, & Ranchor, 2007; Suls et al., 1997), they may not be able to do so completely. That is, there may be some leakage of emotions (Ekman & Friesen, 1969). The suggestion that people low on mastery may be particularly susceptible to the stress of their intimates (Hobfoll & Lerman, 1988) could explain why more unnoticed protective buffering was associated with more distress in women low on mastery in comparison to women high on mastery.

In contrast to expectations, over time (i.e. longitudinally), unnoticed protective buffering support was associated with an increase in distress in patients, regardless of their sense of mastery. Why would protective buffering behaviour that remains unnoticed be deleterious over time? First, protective buffering support that occurs outside awareness may wear down patients' personal resources. While unhelpful interactions that are recognised may be modified or buffered by other coping resources (Manne et al., 2003), those that remain outside awareness may not be challenged. Instead, they may continue to impact coping efficacy and situational control (Manne & Glassman, 2000) which may generalise to a weaker sense of self-esteem and, in turn, to more distress over time (Aldwin, Sutton, & Lachman, 1996; Carver, 1998). An alternative explanation might be that patients who are less aware of the protective buffering support of their partners are themselves more avoidant and inclined to use protective buffering strategies. The mutual avoidance of cancer related feelings and worries by patients and partners may accrue resulting in higher distress over time.

The finding that protective buffering did explain distress better than active engagement is in accordance with most studies (De Ridder et al., 2005; Kuijer et al., 2000) and supports

the idea that unsupportive interactions impact patients' well-being more than supportive interactions (Manne et al., 1997; Pistrang et al., 1995; Schroevers, Ranchor & Sanderman, 2003). In other words, the presence of negative support may be more detrimental than the absence of positive support. This is also in accordance with the more general notion that negative events seem to have a stronger impact on people's well-being than positive events (Taylor, 1991). Possibly, evolutionary processes may have predisposed human beings to be more vigilant regarding negative experiences because they represent potential threats to survival and security.

The explanation offered by Bolger and colleagues (2000) that supportive interactions, such as active engagement, are most effective when they are not perceived by recipients but only reported by providers was not supported in the present study. An explanation for this may be that Bolger and colleagues focused on acute stressors (i.e. bar examination, speech task) that allow people to exert a high degree of control, whereas in the present study we focused on a chronic less controllable stressor (Bolger et al., 2000; Bolger & Amarel, 2007; Shrout et al., 2006). It can be argued that, especially in the former situation, knowing that one needs help is deleterious, while in the latter situation needing and receiving support may be much more accepted and appreciated. It remains unclear why we and others did not find an association between active engagement and distress, and future studies may investigate other moderators.

We found that the moderating role of mastery in the association between ways of providing support and distress was limited. Other moderators, such as relationship satisfaction (Manne et al., 2007), may be better able to elucidate the conditions under which ways of providing support may be effective or detrimental. Also, mastery may impact on other aspects of the support process, such as the tendency to seek support or embrace the support received (Felsten & Wilcox, 1992), more than the effectiveness of different ways of providing support. We did find mastery to have a main effect on distress. Specifically, mastery was found to be associated with lower concurrent distress as well as a decrease in distress over time. This is in accordance with other studies showing that people high on mastery typically experience less distress when confronted with a physical or psychological threat (Aldwin et al., 1996; Bovier, Chamot, & Perneger, 2004; Stiegelis et al., 2003). Although one can argue that there might be some overlap in the items measuring mastery and distress, the two constructs appear to be distinct as was shown by Dalgard and colleagues (2007). This is also supported by the finding in the present study that mastery and distress were only moderately correlated and that mastery did explain some of the variance in distress at T2, after controlling for distress at T1. Moreover, although overall there is a small decline in distress over time, there is enough individual variability in changes in distress over time (mean difference between T1 and T2 = 1.27, $SD = 6.64$). However, as in other research, distress at T1 is a relatively good predictor of distress at a later time point; about 25% of T2 distress is explained by T1 distress.

The present study has some distinct strengths, such as a longitudinal design and the availability of partner reports of the support provided as well as patient reports of the support received, but has some limitations as well. Only women with breast cancer and no men with cancer were included. Therefore, the present study does not allow for distinguishing between patient-partner effects and gender effects. Male partners of women confronted with cancer have been found to report less distress than female partners (Hagedoorn, Buunk, Kuijer, Wobbes, & Sanderman, 2000; Hagedoorn et al., 2001; Tuinstra et al., 2004) and men have been found to be more reluctant to acknowledge threatening experiences and respond to distress with more repressive and distancing strategies (Kring & Gordon, 1998; Lutzky & Knight, 1994). Therefore, we should be

careful to generalise the present findings to men with cancer and their female partners (Hagedoorn, Sanderman, Bolks, Tuinstra, & Coyne, 2008). Moreover, in the present study, the response rate was relatively low, potentially biasing our sample. Findings should therefore be replicated in future studies. Moreover, the reliability coefficient of protective buffering reported by patients was rather low (0.61), which might have impacted the results. Similar reliability coefficients have been found in other studies (De Ridder et al., 2005; Hagedoorn et al., 2000) and this scale may have to be developed further, as was suggested by De Ridder et al. (2005).

The present study was the first to investigate partner support that occurs outside the awareness of women with breast cancer. Traditionally coping research focuses on the influence of conscious responses and much less attention has been given to the 'cognitive unconscious' which is concerned with how events to which we fail to attend nonetheless influence our actions, cognitions and affects (Somerfield & McCrae, 2000). We indeed found that protective buffering support that remained unnoticed by patients was associated with more distress. Future studies may investigate the impact of unconscious processes further. Unconscious processes may be investigated by comparing data from different sources (e.g. self-report from patients and partners, interviews with members of the social network, observations), by using priming techniques (Mikulincer, Gillath, & Shaver, 2002) or by other experimental designs (Bolger & Amarel, 2007). Furthermore, the present study showed that the outcome of partner support may not only differ depending on patients' awareness of the support received, but also based on patients' sense of mastery and the time frame (cross-sectional or longitudinal) adopted. Other factors such as relational factors may also help to explain the effectiveness of partner support. Identifying these factors may be important for the development of individually tailored interventions.

Note

1. It can also be argued that patient distress may not have an immediate impact on partner distress but may erode partner support over time, which in turn may contribute to more distress (Bolger, Foster, Vinokur, & Ng, 1996). Therefore, we investigated whether patient distress (T1) was associated with changes in partner reported protective buffering and active engagement over time. Regression analysis showed that patient distress at T1 did not explain partner reported support (either active engagement or protective buffering) at T2 when partner reported support at T1 was controlled for. Thus, this alternative explanation was not supported.

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