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Denise T. D. de Ridder<sup>a</sup>, Karlein M. G. Schreurs<sup>b</sup> & Roeline G. Kuijer<sup>a</sup>

<sup>a</sup> Department of Health Psychology, Utrecht University, The Netherlands

<sup>b</sup> Roessingh Rehabilitation Centre, The Netherlands

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## Is spousal support always helpful to patients with asthma or diabetes? A prospective study

DENISE T. D. DE RIDDER<sup>1</sup>, KARLEIN M. G. SCHREURS<sup>2</sup>,  
& ROELINE G. KUIJER<sup>1</sup>

<sup>1</sup>*Department of Health Psychology, Utrecht University, The Netherlands and*

<sup>2</sup>*Roessingh Rehabilitation Centre, The Netherlands*

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### Abstract

The current study examined effects of three ways of providing spousal support (active engagement, protective buffering, and overprotection) on self-efficacy and physical and mental health in patients with diseases imposing a high demand on self-management routines (36 asthma patients and 21 diabetic patients). Employing a nine-month prospective design, we hypothesized that active engagement would be positively related to health and self-efficacy, that overprotection would have a negative impact, and that the impact of protective buffering would depend on symptom level at baseline. Results confirmed the latter hypothesis while either positive or negative effects of active engagement and overprotection were absent. These findings are discussed with respect to the role of spousal support in diseases requiring self-management behaviour.

**Keywords:** *Asthma, diabetes, spousal support, self-efficacy, self-management*

Both asthma and diabetes impose a high burden on patients' lives because the course of disease strongly depends on patients' self-management behaviour. Asthma patients need to use daily inhalation medication, adjusting it to their pulmonary function as self-monitored with a peak flow meter (Kotses, Stout, McConnaughy, Winder & Creer, 1999). They also must arrange their living environment to avoid triggers of exacerbations, such as air pollution, which can prevent them visiting public places or the homes of friends and family (Kotses et al., 1999). Diabetic patients must keep a balance in insulin level, physical efforts, and caloric intake to regulate their blood glucose levels (Glasgow & Eakin, 1998).

They must be alert and responsive to symptoms of a low blood glucose level because severe hypoglycaemia may result in coma. In addition, hyperglycaemia must be avoided to prevent future micro- and macrovascular complications.

The self-management routines imposed by diabetes or asthma do not only affect patients' lives but also those of their families (cf Unger, Jacobs & Cannon, 1996; Wing, Marcus, Epstein & Jawad, 1991). Partners and relatives of asthma patients are required to keep the living environment clean, must avoid smoking or keeping pets, and must assist in cases of a severe asthma attack. Diabetic families are affected by the patient's requirements of regular and healthy meals, and they need to be alert to signs of severe hypo- or hyperglycaemia. Previous research has demonstrated that spouses may help but also hinder the performance of self-management tasks (Coyne et al., 2001; Cutrona, 1996; Heijmans, De Ridder & Bensing, 1999; Schreurs & De Ridder, 1997). For example, levels of marital adjustment and intimacy have been found to predict diabetes-related quality of life up to two years later (Trief, Wade, Britton & Weinstock, 2002), while asthma patients with satisfactory relationships take better care of their disease (Schmaling & Afari, 2002).

The importance of studying the role of spouses in disease management has been emphasised in a number of studies (e.g., Fisher et al., 1998), but the exact mechanisms by which spouses' behaviour affects the way patients deal with self-management tasks requires further examination. In this study, we focus on ways of providing support by spouses. In studies of patients with life-threatening diseases such as cancer and heart disease, three spousal support styles have been distinguished, active engagement, protective buffering (Coyne & Smith, 1994) and overprotection (Buunk, Berkhuisen, Sanderman, Nieuwland & Ranchor, 1996). Active engagement refers to 'involving the partner in discussions, inquiring how the partner feels and engaging in other constructive methods of problem solving'. Protective buffering is a strategy of 'hiding concerns, denying worries and yielding to the partner in order to avoid disagreements' (Coyne & Smith, 1994, p. 44). Overprotection occurs when spouses are 'overhelping' and restricting patient's activities (Buunk et al., 1996).

Most studies concerning patients with cancer or heart disease have shown that active engagement by spouses is positively related to patients' perceptions of relationship quality and self-efficacy (Hagedoorn et al., 2000; Kuijer, Ybema, Buunk & De Jong, 2000), but not to patient's well-being (Buunk et al., 1996; Kuijer et al., 2000). In contrast, overprotection by spouses has consistently been found to be detrimental. Overprotection has been related to less self-efficacy in patients after myocardial infarction (Buunk et al., 1996; Coyne & Smith, 1994), to more distress in heart and cancer patients (Buunk et al., 1996; Kuijer et al., 2000), and to more depression and lower feelings of control in stroke patients (Thompson & Pitts, 1992; Thompson & Sobolew-Shubin, 1993). When patients receive unwanted help, this may affect their self-esteem and increase feelings of helplessness (cf Bolger, Zuckerman & Kessler, 2000; Martire, Druley, Stephens & Wojno, 2002; Newsom & Schulz, 1998; Thompson & Pitts, 1992). The role of protective buffering is less unequivocal, which makes sense when one realises that, theoretically, hiding worries from one's spouse may be at odds with feelings of belonging in an intimate relationship but may also make the patient believe that he or she is in control of illness. Negative relations of protective buffering with self-efficacy and well-being have been found in heart patients (Buunk et al., 1996). In patients recovering from myocardial infarction, however, protective buffering was positively associated with patients' self-efficacy (Coyne & Smith, 1994), whereas Kuijer and colleagues (2000) could not detect either positive or negative effects from protective buffering on self-control or psychological distress in cancer patients.

All of these studies concern patients with life-threatening diseases in which the impact of patients' attempts to influence disease course is limited. As far as we know, no research on spousal support styles has been conducted in diseases requiring self-management, such as diabetes and asthma. Examining the impact of spousal support in this kind of diseases is important because it may reveal different relationships between spousal support styles and patients' well-being compared to the ones found in life-threatening diseases and thus may contribute to further theorizing on the role of disease characteristics in the association between spousal support and patients' well-being. We expect the role of active engagement and overprotection to be similar as patients confronted with self-management tasks may equally benefit from the constructive support in dealing with disease (active engagement) or hindered by spouses' attempts to 'overhelp' them (overprotection). We also expect these relationships to be moderated by patients' disease status as patients who face a temporary increase in symptoms may be in more need of support and are more responsive to spousal support strategies (cf Hagedoorn et al., 2000). Dealing with a temporary increase in symptoms, patients may benefit more from their spouses' engaging support while, in contrast, the effects of overprotection may be more negative. With respect to protective buffering, we expect to find more straightforward relationships than the ones found in life-threatening diseases. In patients dealing with diseases that impose a demanding self-management regimen, the role of protective buffering may be more unequivocal when currently experienced disease burden (symptom level) is taken into account. We expect that patients who need help in performing self-management tasks because they experience many symptoms may be bothered by protective buffering as they may interpret their spouses' behaviour as a denial of their worries (cf Coyne & Smith, 1994), resulting in lower self-efficacy and lower quality of life. In contrast, patients with few symptoms may actually benefit from protective buffering because it boosts their self-efficacy and well-being.

These hypotheses were addressed in a longitudinal study of asthma patients and diabetic patients who had been experiencing a recent failure in self-management, indicated by a temporary increase in symptoms. Although, of course, asthma and diabetes are different diseases, from a psychological point of view both diseases share the feature that patients are required to actively deal with their illness and manage their symptoms on a daily basis. Therefore, these diseases provide a good model of how different types of spousal support affect patients' well-being and self-efficacy taking into account the role of symptom management.

## **Method**

Patients were recruited via the outpatient departments of six hospitals in The Netherlands. These patients participated in a randomized controlled trial evaluating an intervention to promote self-management skills (Schreurs, Colland, Kuijer, De Ridder & Van Elderen, 2003). The present study employs the data of the first wave of measurement (before the start of the intervention) and the follow-up measurement nine months later and comprises patients from both the control group and the experimental group. As the intervention was specifically aimed at self-management skills and did not address topics related to spousal support, we expected no differences in spousal support between experimental and control conditions. However, in multivariate analyses we will control for the impact of experimental condition. At baseline, all patients were interviewed at the hospital. Follow-up measures were obtained by questionnaires to be completed at home. Patients returned the questionnaires by mail. At baseline, patients kept a symptom diary for 14 days.

### Sample

Patients were included if they met the following criteria: (a) a medical diagnosis of asthma (moderate–severe, moderate, or moderate–mild according to the classification of the guidelines of the American Thoracic Society, 1987), or insulin-dependent Type 1 or Type 2 diabetes (glycosylated haemoglobin >8%), (b) a minimum disease duration of one year, (c) age between 18 and 65 years, and (d) a recently experienced failure in self-management (exacerbations of symptoms and/or difficulties in following the medical regimen or recommended self-care activities, resulting in repeated non-scheduled visit or emergency visits in the past six months). As a result of our selection criteria, patients were moderately ill but were not seriously handicapped by their disease, representing the broad category of patients who experience some difficulties in managing their illness (see for details, Kuijer & De Ridder, 2003). A total of 126 patients participated in the randomized controlled trial: 71 patients with asthma and 55 patients with diabetes. Since the current study focused on spousal support, we selected participants with a spouse, resulting in 48 asthma patients and 32 diabetic patients. Of these 80 eligible patients, 36 patients with asthma and 21 with diabetes completed the baseline and follow-up measurements. Participants who dropped out of the study did not differ from completers in demographic characteristics, disease characteristics, or baseline measures of spousal support, self-efficacy, and well-being. Demographic characteristics are shown in Table I. Mean age was about 45 years; most patients were relatively well-educated and had a paid job. Patients with asthma reported a longer disease duration than patients with diabetes. About 62% of asthma patients were female, whereas 42% of the diabetes sample was female.

### Measures

*Spousal support* was measured both at baseline and follow-up. Based on Coyne and Smith (1991), Buunk and colleagues (Buunk et al., 1996) developed a questionnaire to measure three ways of providing support: active engagement, protective buffering, and overprotection. Patients were asked to judge to what extent their partner adopted these ways of giving support. The questionnaire contained 19 items which were measured on a 5-point scale ranging from ‘never’ (1) to ‘very often’ (5). Five items measured active engagement; sample items are ‘My partner asks me how I feel’ and ‘When something

Table I. Demographic characteristics.

	Asthma N = 36		Diabetes N = 21		<i>p</i> <sup>a</sup>
Age (in years)	45.19	12.42	44.24	10.97	0.77
Time since diagnosis (in years)	24.45	19.20	13.05	10.09	0.01
Level of education <sup>b</sup>	4.39	1.51	4.24	1.41	0.71
Gender					0.06
Male	10	38%	11	58%	
Female	26	62%	10	42%	
Employment status					
– paid job >20 hours/week	15	51%	13	75%	0.37
– paid job <20 hours/week	10	19%	5	8%	
– no paid job	11	30%	3	17%	

<sup>a</sup>*p*-value for *t*-tests age, time since diagnosis, level of education or  $\chi^2$  for gender and employment status.

<sup>b</sup>Level of education was measured on a 6-point scale (1 = lowest level, 6 = highest level).

bothers me, my partner tries to discuss the problem' ( $\alpha = 0.82$ ). Eight items measured protective buffering; sample items are 'My partner tries to hide his or her worries about me' and 'My partner can't endure me being concerned and acts as if he or she doesn't notice my worries' ( $\alpha = 0.68$ ). The subscale for overprotection consisted of six items, for example 'My partner treats me like a baby' and 'When it comes down to it, my partner seems to think that I don't know what is right for me' ( $\alpha = 0.71$ ).

*Physical and mental health* were measured with the SF-12 Short Form Health Survey (Jenkinson et al., 1997; Ware, Kosinski & Keller, 1996) and assessed both at baseline and follow-up. The SF-12 is a generic health status measure that comprises two components: the Physical Component ( $\alpha = 0.83$ ) and the Mental Component ( $\alpha = 0.80$ ). Items are measured on different rating scales. The rating scales were all transferred to 5-point scales. Higher scores of these scales represent better physical and mental health.

*Self-efficacy regarding self-management* was measured both at baseline and follow-up. Following Lorig et al. (1996), we asked patients to fill out questions on their self-efficacy beliefs regarding the performance of behaviour to control the illness and regarding achieving the desired health outcomes (see for details, Kuijer & De Ridder, 2003). In this study, we only used the subscale of self-efficacy relating to achieving the desired health outcomes. This scale consisted of nine items, such as 'How confident are you that you can reduce your physical discomfort?' or 'How confident are you that you can continue to do your hobbies and recreation?'. All items were measured on a 7-point scale, ranging from 'not at all confident' (1) to 'totally confident' (7). Cronbach's alpha for this scale was 0.92.

The measurement of *symptoms* was based on the number and severity of symptoms of hypoglycaemia in diabetes patients and breathing difficulties in asthma patients as reported in daily reports for two weeks at baseline. Diabetic patients daily reported the presence and severity of symptoms of hypoglycaemia on a scale ranging from 'no symptoms' (1) to 'very severe symptoms' (5). Asthmatic patients daily reported breathing difficulties on a scale ranging from 'no breathing difficulties' (1) to 'very severe breathing difficulties' (7). We first computed individual means across the 14 registration days. Asthma patients reported a daily mean of 2.45 symptoms (SD 0.81) while diabetic patients reported a daily mean of 3.32 symptoms (SD 0.69). Although we purposely recruited patients who experienced difficulties in dealing with self-management routines, the relatively high standard deviation shows that patients differed in the number of symptoms they experienced. Next, the individual mean scores were standardized per disease category in order to account for the differences in symptoms and scale ranges across the diseases. The resulting score was thus an indication of relative frequency and severity of the most common disease-specific symptoms for each person, compared to other patients with the same disease. Significant associations of this symptom score with type of disease ( $r = 0.04$ , ns) or experimental condition ( $r = 0.19$ , ns) were absent.

### *Analyses*

Hierarchical multiple regression analyses were employed to predict the impact of spousal support on self-efficacy and mental and physical health nine months later. Separate analyses were conducted for each dependent variable (self-efficacy, mental health, and physical health) and for each type of spousal support (active engagement, protective buffering, and overprotection), resulting in nine sets of analyses. The basic model includes the introduction of control variables (type of disease and experimental condition) in the first step,

followed by the corresponding baseline measure of the outcome variable in the second step. In the third step the main effect of symptoms was examined, followed by spousal support style in the fourth step. In the fifth step, the effect of the interaction between spousal support and symptoms was examined. In all regression analyses, predictors involved in interaction terms were centred in order to avoid high inter-correlations between predictors and interaction terms (West, Aiken & Krull, 1996). The reader should note that our sample size was relatively small to detect interaction effects. In the absence of measurement errors, the number of cases needed to detect an interaction are  $n = 26, 55, 392$  for large, moderate, and small effect sizes, respectively. As effect sizes are sharply reduced when predictors or criterion variables contain measurement errors (Aiken & West, 1991), only moderate and large interaction effects could be detected with the current sample size.

**Results**

*Frequency and associations of spousal support with physical and mental health*

Table II shows the means of spousal support style reported by patients. Reports of active engagement were higher than reports of protective buffering, which were in turn higher than reports of overprotection ( $3.96 < t(56) < 14.91; p < .000$ ). The pattern of correlations between spousal support styles shows a significant association between protective buffering and overprotection whereas significant associations of both strategies with active engagement were absent. This pattern of associations between spousal support styles is similar to the pattern reported in previous studies (Buunk et al., 1996; Hagedoorn et al., 2000; Kuijer et al., 2000). There were no differences between asthmatic and diabetic patients in spousal support styles or in mental and physical health. Differences

Table II. Correlation matrix of variables at baseline and after nine months. Means and standard deviations of key variables.

Variable	1	2	3	4	5	6	7	8	9
1 Active engagement (BL)	1.00								
2 Protective buffering (BL)	-0.20	1.00							
3 Overprotection (BL)	0.01	0.44**	1.00						
4 Self-efficacy (BL)	0.18	-0.44**	-0.30*	1.00					
5 Mental health (BL)	0.18	-0.43**	-0.23	0.62***	1.00				
6 Physical health (BL)	0.10	-0.47**	-0.08	0.65***	0.64***	1.00			
7 Self-efficacy (FU)	0.25	-0.32**	-0.19	0.77***	0.48***	0.57***	1.00		
8 Mental health (FU)	0.23	-0.51***	-0.17	0.61***	0.66***	0.61***	0.56***	1.00	
9 Physical health (FU)	0.13	-0.46***	-0.10	0.23	0.27*	0.47**	0.29*	0.51**	1.00
Condition <sup>a</sup>	0.07	-0.02	0.18	0.03	0.04	-0.03	0.17	0.14	-0.10
Disease <sup>b</sup>	-0.18	-0.02	-0.07	0.06	-0.18	-0.19	-0.11	-0.09	-0.08
Symptoms	0.19	0.25	0.12	-0.31*	-0.24	-0.42**	-0.17	-0.11	-0.22
Gender <sup>c</sup>	-0.03	0.22	-0.17	-0.09	-0.19	-0.35**	-0.05	-0.38**	-0.36**
M	3.71	2.42	1.90	5.30	3.58	3.35	5.29	3.73	3.60
SD	0.73	0.62	0.63	1.21	0.90	1.10	1.19	0.80	0.61

Note: BL = baseline measurement; FU = measurement after nine months.

<sup>a</sup>Dummy variable 0 = control group, 1 = experimental group.

<sup>b</sup>Dummy variable 0 = diabetes, 1 = asthma.

<sup>c</sup>Dummy variable 0 = female, 1 = male.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

between the experimental and control condition relating to these variables were also absent. There were no significant associations between gender and spousal support styles or self-efficacy. However, female patients reported poorer physical health (at baseline and follow-up) and mental health (follow-up). For that reason and because prior research suggests that women are more strongly influenced by support than are men (Acitelli & Antonucci, 1994), gender effects will be explored in our multivariate analyses. Table II further shows that correlations of symptoms with spousal support variables were not significant (except for a marginally significant association between protective buffering and symptom level). Finally, Table II shows that protective buffering is negatively associated with self-efficacy and physical and mental health whereas significant associations of active engagement with self-efficacy and physical and mental health were absent. Overprotection is negatively associated with self-efficacy and mental health (the latter only marginally significant).

#### *Prediction of self-efficacy and physical and mental health from spousal support styles*

Table III shows the results of nine sets of hierarchical regression analyses, predicting the nine-month impact of three types of social support style on self-efficacy, and mental or physical health of patients. We also explored the possible moderating role of gender in the impact of spousal support styles on self-efficacy, and mental or physical health by examining the two-way interactions between gender and spousal support style. Only in one of the nine analyses a significant interaction between gender and support style was found ( $p < 0.01$ ), showing that female patients reported poorer physical health at follow-up when experiencing high levels of protective buffering at baseline ( $\beta = -0.41$ ,  $p < 0.05$ ) whereas male patients, in contrast, reported better physical health when their wives ignore their worries ( $\beta = 0.39$ ,  $p < 0.05$ ). Because of the rather small sample size, all other analyses presented in this article ignored gender.

Results regarding active engagement show that, after controlling for type of disease, experimental condition, and corresponding baseline measure of the outcome variable, active engagement had, different from what we expected, no positive impact on either self-efficacy or mental and physical health.<sup>1</sup> Contrary to our expectations, overprotection did not have a negative impact on self-efficacy and physical or mental health either. The absence of significant interactions between these spousal support styles and symptom level shows that there was no moderating effect of symptom level on self-efficacy and mental or physical health. Regarding the impact of protective buffering, results were more in line with our expectations. Table III shows that protective buffering had a significant negative impact on mental and physical health reported by patients, although this effect was not moderated by patients' symptom level like we expected. It thus appears that patients who perceive their spouses to hide their concerns and worries experience worse health nine months later, independent from whether or not patients experience a high symptom level at baseline. Table III further shows that the two-way interaction between symptom level and protective buffering was significant in the analysis with self-efficacy as the dependent variable. Regression slopes for symptom level were calculated one standard deviation above and below the mean (see Aiken & West, 1991). Simple slope analyses

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<sup>1</sup>Because of the relatively small sample size, we repeated all regression analyses without the control variables in step 1 to increase power. This is justifiable since neither disease category nor experimental condition correlated significantly with any of the dependent variables (see Table II). These analyses showed the same results as the ones presented in the text.

Table III. Summary of results of multiple regression analyses to predict self-efficacy and mental and physical health at 9 month follow-up.

		Self-efficacy at FU		Mental health at FU		Physical health at FU	
		$R^2$ ch.	$\beta$	$R^2$ ch.	$\beta$	$R^2$ ch.	$\beta$
<b>Active engagement analysis</b>							
Step 1:	Experimental condition	0.04	0.15	0.02	0.17	0.02	-0.07
	Disease category		0.05		-0.07		-0.03
Step 2:	Corresponding variable at baseline	0.58***	0.76***	0.44***	0.66***	0.20**	0.43**
Step 3:	Symptoms at baseline (S)	0.00	0.02	0.00	-0.01	0.00	-0.05
Step 4:	Active engagement at baseline (AE)	0.01	0.08	0.01	0.10	0.01	0.09
Step 5:	AE $\times$ S	0.01		0.00		0.01	
<b>Protective buffering analysis</b>							
Step 1:	Experimental condition	0.04	0.12	0.02	0.16	0.02	-0.09
	Disease category		0.02		-0.03		0.02
Step 2:	Corresponding variable at baseline	0.58***	0.82***	0.44***	0.57***	0.20**	0.31*
Step 3:	Symptoms at baseline (S)	0.00	0.06	0.00	0.06	0.00	-0.01
Step 4:	Protective buffering at baseline (PB)	0.00	0.14	0.06*	-0.27*	0.08*	-0.32*
Step 5:	PB $\times$ S	0.05**	-0.25**	0.01		0.02	
<b>Overprotection analysis</b>							
Step 1:	Experimental condition	0.04	0.13	0.02	0.19	0.02	-0.06
	Disease category		0.06		-0.04		-0.01
Step 2:	Corresponding variable at baseline	0.58***	0.78***	0.44***	0.67***	0.20**	0.45**
Step 3:	Symptoms at baseline (S)	0.00	0.04	0.00	0.01	0.00	-0.03
Step 4:	Overprotection at baseline (OV)	0.00	0.01	0.00	-0.05	0.00	-0.06
Step 5:	OV $\times$ S	0.00		0.01		0.00	

$\beta$ s shown in steps 1 to 4 concern those before interaction terms were entered.  $\beta$ s for interaction terms are only shown if significant.

showed that for patients who reported a low symptom level at baseline, protective buffering at baseline was significantly related to self-efficacy nine months later ( $\beta = 0.53, p < 0.05$ ). In contrast, for patients who reported a high symptom level at baseline, protective buffering was unrelated to self-efficacy nine months later ( $\beta = -0.16, ns$ ). The interaction is presented in Figure 1.

It thus appears that patients who experience lower levels of symptoms become more self-confident when their spouses keep their concerns to themselves while patients who experience high levels of symptoms neither benefit nor are bothered by spouses who hide their worries about them.

**Discussion**

In this study we examined in what way patients with diseases imposing a demanding self-management routine perceive the support provided by their spouses, in what way spousal support affects well-being and self-efficacy, and to what extent the effects of spousal support may depend on the symptoms experienced by patients. As far as we know, this study is the first one that examines the role of spousal support styles in patients with disease that impose a huge demand on self-management routines. In addition, it is the first study that examines the impact of spousal support in a prospective design.

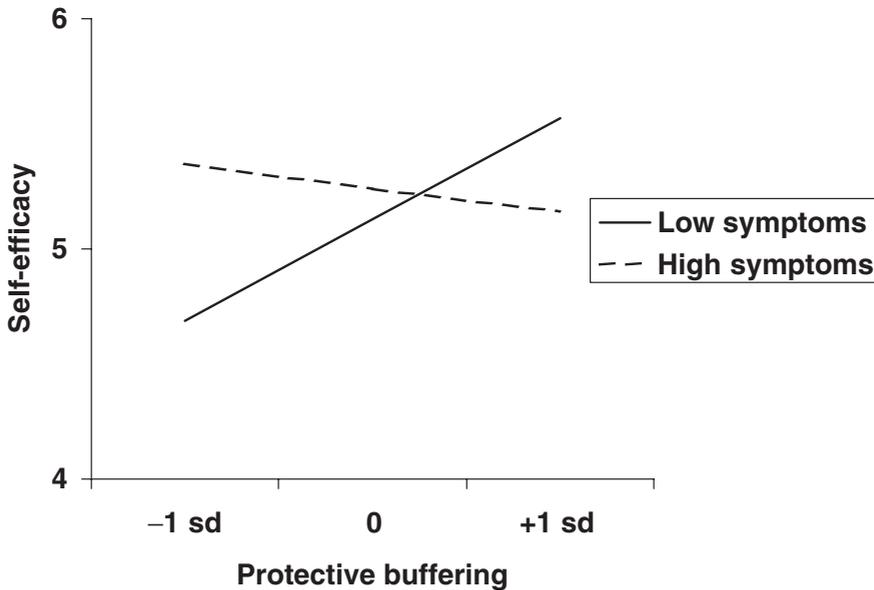


Figure 1. The interactive effect of protective buffering and symptoms at baseline on self-efficacy at follow-up.

Spouses are the main source of support for the majority of chronically ill patients (Revenson, 1994). Also in our study, most patients reported that their spouses were involving them in discussions, inquired how they felt, and engaged them in problem-solving activities whereas they reported relatively low levels of spouses denying their worries or overprotecting them. Similar results regarding the frequency of spousal support styles were reported in other studies (e.g., Hagedoorn et al., 2000; Kuijer et al., 2000), showing that asthma patients and diabetic patients perceive their spouses to be equally engaged in their illness as cancer patients.

Surprisingly, the positive impact of perceived spousal engagement on patients' self-efficacy and physical and mental health that has been reported in cross-sectional studies on patients with life-threatening diseases (e.g., Coyne & Smith, 1994) was absent in our study. Although other studies have also failed to find positive associations between active engagement and well-being (Hagedoorn et al., 2000; Kuijer et al., 2000), the unexpected finding that asthma patients and diabetic patients did not seem to benefit from the engaging behaviour of their spouses may be related to the typical demands of their illness. This makes sense when one realises that most patients in our study were experienced in dealing with the daily requirements of their disease. Other studies have suggested that patients who are not distressed may not experience additional benefit from active engagement by their spouse (Hagedoorn et al., 2000).

Also in contrast with studies that have been conducted in patients with life-threatening diseases, the patients in our study did not seem to be bothered by spousal attempts to overprotect them. This may be related to the relatively low levels of spousal overprotection that were reported by patients. However, equally low levels of overprotection have been reported in studies with cancer patients (Hagedoorn et al., 2000; Kuijer et al., 2000). Different from patients with life-threatening diseases, the majority of patients in our sample was employed in a paid job and able to continue relatively normal lives even though many of them experienced regular failures in self-management.

Leading their lives in this way may have prevented spouses from engaging in 'overhelping' whereas patients may have been less sensitive to this kind of helping strategy when it occurred. Indeed, preliminary analyses (not reported in this article) suggested that patients perceived more spousal overprotection at follow-up when they reported more symptoms at baseline.

Although our results regarding active engagement and overprotection differed from what we expected, results concerning the impact of protective buffering largely confirmed our expectations. In line with the results of previous studies (Coyne & Smith, 1991; Suls, Green, Rose, Lounsbury & Gordon, 1997), protective buffering had a negative impact on mental and physical health as well as self-efficacy reported nine months later, although the latter effect was limited to those patients who reported high levels of symptoms at baseline. Similar results have been reported by Hagedoorn et al. (2000) who showed that protective buffering had a negative impact on marital satisfaction only in patients with high levels of distress or physical limitations; and by Coyne and Smith (1994) who showed that protective buffering had a negative impact on self-efficacy when patients initially reported low levels of self-efficacy. Although former studies have demonstrated gender effects of spousal support (e.g., Acitelli & Antonucci, 1994), our study showed that gender effects were only present in case of protective buffering. It appears that female patients experience worse physical health when their husbands hide their concerns whereas male patients, in contrast, benefit when their wives do not discuss their worries with them.

A number of issues require further consideration. First, our findings and those of other studies suggest that the negative impact of protective buffering is especially present when patients are insecure, either because they feel less self-efficacious (Coyne & Smith, 1994), because they experience high distress (Hagedoorn et al., 2000), or many symptoms (the present study). This is an important finding, as it demonstrates that spouses' intended supportive behaviours may turn out not to be supportive for patients who may need it the most. Put differently, patients' well-being determines whether or not they perceive acts of protective buffering as supportive; when they feel good they appear to benefit from it, but when they do not, they become insecure. Notwithstanding these interesting results, further research on the concept of protective buffering is warranted because of the relatively low internal reliability ( $\alpha < 0.70$ ) of the protective buffering scale in our study and other studies (Hagedoorn et al., 2000; Kuijer et al., 2000). More specifically, future research should examine to what extent the protective buffering scale comprises both elements of a straightforward protective attitude from the side of the spouse (e.g., 'My partner does everything to prevent me from thinking about my disease') and elements of a more ambivalent attitude (e.g., 'My partner tries to act as if nothing is the matter').

Second, our results on the impact of spousal support consistently differ from results observed in previous studies concerning patients with cancer or heart disease. These life-threatening diseases impose limitations on the amount of control patients may exert on the course of disease whereas self-management diseases like asthma and diabetes require patients to monitor and control disease course on a daily basis. As a result, the role of spouses in helping patients dealing with these differential tasks may differ. In case of asthma and diabetes, patients are able to perform most of the required self-management tasks without spousal involvement if they choose, whereas life-threat may force patients to seek out spousal support. Spouses of asthma patients and diabetes patients may judge daily whether or not patients are complying with their medical regimen and adjust their support strategies accordingly. Future research may clarify to what extent adaptive tasks related to the type of disease (Bensing, Schreurs, De Ridder & Hulsman, 2002;

De Ridder, Schreurs & Bensing, 1998) shape the types of support spouses engage in, how they are perceived by patients, and how they affect patients' well-being.

Finally, it should be noted that the failure to demonstrate the expected effects of active engagement and overprotection may relate to the small sample size and/or the employment of a generic measure to assess mental and physical health. However, this seems unlikely as we were able to demonstrate the expected findings regarding the role of protective buffering in this sample using the SF-12. Of course, our results should be replicated in a larger sample. However, we believe that our study has shown the importance of examining the role of spousal support in relation to the demands imposed by disease. Our results implicate that, in the case of chronic diseases requiring self-management, the positive role of active engagement and the negative role of overprotection may be more limited than suggested by the studies regarding life-threatening diseases. In contrast, the role of protective buffering appeared to be more straightforward in our sample of patients with asthma or diabetes and relates to the level of symptoms patients experience.

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