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The role of social support and self-esteem in the presence and course of depressive symptoms: a comparison of cancer patients and individuals from the general population

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Abstract

The key focus of this longitudinal study in the Netherlands was to determine the role of social support (i.e. perceived availability of emotional support, lack of received problem-focused emotional support, and negative interactions) and positive and negative self-esteem in depressive symptoms in 475 recently diagnosed cancer patients and 255 individuals without cancer from the general population. Patients and the comparison group were interviewed and filled in a questionnaire at two points in time: 3 months (T1) and 15 months (T2) after diagnosis. The results indicated that social support and self-esteem were weakly to moderately related to each other. Negative self-esteem was more strongly related to all three types of social support, compared to positive self-esteem. Regression analyses showed that social support and self-esteem were independently related to depressive symptoms (concurrently), such that lower levels of social support and self-esteem were strongly associated with higher levels of depressive symptoms. This finding suggests that these two resources supplement each other additively. A longitudinal analysis showed that social support and self-esteem also predicted future levels of depressive symptoms, although the explained variance was much lower than in a cross-sectional analysis. Comparisons between cancer patients and the comparison group generally revealed no significant differences between the two groups in the associations of social support and self-esteem with depressive symptoms. The only exception was a lack of problem-focused emotional support. At three months after diagnosis, a lack of this type of support, characterised by reassuring, comforting, problem-solving, and advice, was more strongly related to depressive symptoms in patients than in the comparison group.

Keywords: Cancer; Depressive symptoms; Resources; Social support; Self-esteem; Longitudinal; The Netherlands

A diagnosis of cancer may be regarded as a life crisis. Cancer patients may have to face multiple stressful situations during the course of the illness. Not surprisingly, about a quarter of patients experience depressive symptoms in the initial period after diagnosis (McDaniel, Musselman, Porter, Reed, & Nemeroff, 1995; Schroevers, Ranchor, & Sanderman, 2002). Longitudinal studies show a gradual decrease in these symptoms over time in the first year following diagnosis (Fallowfield, Hall, Maguire, & Baum, 1990; Goldberg et al., 1992; Grassi, Malacarne, Maestri, & Ramelli, 1997).

According to Moos and Schaefer (1984), social and personal resources play a crucial role in the process of adjustment to a life crisis such as a diagnosis of cancer. Social support has been most frequently studied as a psychosocial resource (Hobfoll & Vaux, 1993; Thoits, 1995). Social and personal resources are likely to be strongly related to each other (Hobfoll, Freedy, Lane, & Geller, 1990; Hobfoll & Vaux, 1993; Moos & Schaefer, 1993; Thoits, 1995). In the context of social support,

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self-esteem may be regarded as an important personal resource, since one of the major functions of social support is to bolster or maintain feelings of self-esteem (Curbow & Somerfield, 1991; Rowland, 1989). In the present study, we explored how different types of social support and self-esteem are interrelated and how both resources are associated with depressive symptoms in recently diagnosed cancer patients and individuals without cancer from the general population.

The support from family and friends is a valuable resource long believed to be associated with psychological well-being (Thoits, 1995). There are several explanations for this relationship. Social support may bolster or maintain a sense of social identity and facilitate self-evaluations (Cooley, 1902; Mead, 1934; Wills, 1981) and social integration (Durkheim, 1951), thus counteracting feelings of loneliness (Lepore, 1997). Among cancer patients, the support from others may buffer the negative consequences of the illness and its treatment and is therefore strongly associated with patients' psychological functioning (Helgeson & Cohen, 1996). An important issue in research on social support is the lack of consensus about how social support should be defined. There exists great variability in the conceptualisation of social support regarding (a) the type of support (e.g. emotional, instrumental, or informational), (b) perceived availability (i.e. expectancies) versus actual received support, and (c) amount versus satisfaction with actual received support. This latter distinction incorporates the idea that social support should fit the needs of the person in order to be beneficial to well-being (Thoits, 1982). These differences in the definition of social support need to be taken into account when interpreting the literature on social support.

Regarding the type of support, emotional support (characterised by love, respect, sympathy, understanding, listening, reassuring, and comforting) seems to be particularly important for cancer patients (Helgeson & Cohen, 1996; Wortman, 1984). The perceived availability and satisfaction with received (emotional) support have been negatively associated with psychological distress (Alferi, Carver, Antoni, Weiss, & Duran, 2001; Courtens, Stevens, Crebolder, & Philipsen, 1996; Grassi et al., 1997; Sollner et al., 1999). However, a positive relationship has been found between received (emotional) support and psychological distress (De Leeuw et al., 2000). A possible reason for this paradoxical finding may be that distressed persons have a higher need for support and thus seek and/or receive more social support (Lepore, 1997). Alternatively, excess support may lead to psychological distress, possibly through undermining the individual's own coping capacities (Schreurs & de Ridder, 1997). Overall, it can be concluded that the role of received support in psychological distress experienced by cancer patients is equivocal. Perceived availability and satisfaction with emotional support appear to benefit a person's psychological functioning.

A limitation of previous studies on social support is that they have mainly focused on the positive aspects of social relationships. Yet it has been shown that the negative aspects of social relationships (characterised by conflict, criticism, and interference) are independent of the positive aspects of support (Rook, 1984) and strongly related to psychological functioning (Coyne & DeLongis, 1986; Helgeson, 1993; Schreurs & de Ridder, 1997; Thoits, 1995). The few studies that have focused on the negative aspects of social relationships in cancer patients show that negative interactions are associated with psychological distress, even more so than supportive interactions (Kuijer et al., 2000; Manne, Taylor, Dougherty, & Kemeny, 1997; Pistrang & Barker, 1995).

Self-esteem is an important personal resource and strongly associated with psychological functioning (Katz, Rodin, & Devins, 1995; Thoits, 1995). In cancer patients, self-esteem may buffer the stress they experience. However, because most studies among cancer patients studied self-esteem as an outcome variable, little is known about the role of self-esteem in patients' psychological adjustment (Curbow & Somerfield, 1991; Katz et al., 1995). The few studies that have examined self-esteem as a predictor found that a higher self-esteem is related to lower levels of depressive symptoms and higher levels of well-being (Carpenter, 1997; Dirksen, 1989; Hobfoll & Walfisch, 1984). It has been suggested that, as with social support, a distinction can be made between positive and negative self-esteem. These two dimensions of self-esteem seem to be differentially related to other variables such as social support and depression (Brown, Andrews, Bifulco, & Veiel, 1990; Brown, Bifulco, & Andrews, 1990). However, because this issue remains understudied, little is known about the importance of a negative–positive self-esteem distinction.

Social and personal resources tend to enrich each other. For instance, persons with high self-esteem may be more likely to receive or perceive more social support (Winnubst, Buunk, & Marcelissen, 1988). Alternatively, social support may strengthen a person's self-esteem (Rowland, 1989; Wills, 1985) and may be particularly important in the face of a stressful situation (Hobfoll et al., 1990). Among cancer patients, it has been found that the perceived availability and satisfaction with social support are positively related to self-esteem (Carpenter, 1997; Dirksen, 1989). Clearly, these relationships among social support and self-esteem are important and need to be taken into account. If both resources are strongly interrelated, it is of interest to question whether they are independently associated with psychological functioning. However, few studies have examined how social support relates to personal resources such as self-esteem and whether these two resources supplement

each other additively in relation to psychological functioning.

Another important issue that requires further attention is whether resources are related to psychological well-being in *all* circumstances or particularly in the face of a stressful situation (Cassel, 1976; Cobb, 1976; Cohen & Wills, 1985). To the extent that social support and self-esteem fulfil basic human needs, it can be hypothesised that they have a main effect on well-being, regardless of the presence of a stressful situation (Vilhjalmsson, 1993). However, it can also be hypothesised that these resources are more important for well-being in people who are confronted with a stressful life-event (e.g. physical illness), since resources may buffer the negative impact of such a situation (Hobfoll et al., 1990; Katz et al., 1995; Thoits, 1995). The few studies that have examined whether resources are more important for patients with a serious illness focused on patients with a chronic illness (i.e. cancer or arthritis) (Druley & Townsend, 1998; Penninx et al., 1998). These two studies generally found no significant differences between patients and healthy people in the comparison group with no chronic illness in the associations of social support and self-esteem with depressive symptoms. In the present study, we focused on patients facing an acute life-threatening illness, namely a recent diagnosis of cancer, with the understanding that the initial period after diagnosis is most stressful for patients (Spencer, Carver, & Price, 1998). We compared patients with a comparison group of individuals without cancer from the general population. It was assumed that both cancer patients and the comparison group could suffer from other chronic illnesses. The important difference between the two groups was the presence of a recent diagnosis of cancer.

The aim of the present study was three-fold: (a) to examine the relation between positive and negative aspects of social support and self-esteem; (b) to determine whether social support and self-esteem 3 months after diagnosis supplement each other and are independently related to the presence and course of depressive symptoms 3 and 15 months after diagnosis; and (c) to examine differences between recently diagnosed cancer patients and individuals without cancer from the general population with respect to the associations among social support, self-esteem, and depressive symptoms.

Method

Sample

The data for the present study were collected as part of a longitudinal study on the quality of life of cancer patients in the year after diagnosis (Schroevers et al., 2002; Van der Zee, Buunk, de Ruiter, & Tempelaar, 1996). Cancer patients were recruited from 12 hospitals in the northern part of the Netherlands, with the assistance of the Dutch Cancer Registration of the Comprehensive Cancer Centre North Netherlands (CCCNN). Based on the cancer registration of the CCCNN, patients were selected on the basis of cancer site and disease stage. The following were inclusion criteria for study participation: (a) age 18 years or older; (b) newly diagnosed with cancer; (c) no distant metastases; (d) a life expectancy of at least 1 year; and (e) informed about the diagnosis of cancer. A letter containing information about the project and a participation form was attached to the patients' medical status and patients were approached for participation in the study by their doctor. Patients were interviewed and filled in a questionnaire at three points in time: 3, 9, and 15 months after diagnosis. The comparison group was selected from the register office of five townships in the same region as patients. These individuals without cancer were matched at group level on age and gender with the patient group. The comparison group was also interviewed and filled in a questionnaire at three points in time. In the present study, we focused on the interviews at 3 and 15 months after diagnosis, hereafter labelled as T1 and T2. These two points in the course of the illness are believed to capture the period of crisis, at 3 months, and short-term adjustment to cancer, at 15 months.

Over a period of 2 years, 516 patients returned the participation form. Medical specialists did not consistently register how many cancer patients were actually given a participation form. Therefore, information on the exact response rate is not available. At T1, 475 (92% of the 516) entered the study and 403 patients (85% of 475) also participated at T2. The main reasons for dropping out were serious illness and death. Based on the gender and age distribution of patients, 559 people (a comparison group) were selected and sent a participation form. At T1, 255 (46% of 559) entered the study and 225 of the comparison group (88% of 255) also participated at T2. The main reasons for dropping out were unwillingness to participate, impossibility to locate, and incomplete questionnaire data. Thus, the final sample for the present study included 403 patients and 225 people from the comparison group who participated at both points in time.

Patients ($n = 403$) and comparisons ($n = 225$) who were included in the present study were compared on the main sociodemographic and medical characteristics with patients ($n = 72$) and comparisons ($n = 30$), respectively, who dropped out of the study after T1. Compared to included patients, those who dropped out were significantly more often diagnosed with lung or colorectal cancer, stage III or IV, treated with radiotherapy or chemotherapy, with or without surgery,

($p<0.01$), and were more often male, older, and less educated ($p<0.05$). Furthermore, the patients who dropped out reported a greater lack of problem-focused emotional support ($p<0.05$). Comparisons between the control group in the present study and the comparison group who dropped out revealed no significant differences on the indices of sociodemographic variables, social support, self-esteem, or depressive symptoms.

To verify that the patient group experienced poorer health than the comparison group, group comparisons were made on several indicators of health. The patient group reported more physical symptoms and more limitations in their household and social activities compared to the other group ($p<0.001$).

Measures

Depressive symptoms

The Center for Epidemiologic Studies Depression (CES-D) scale is a 20-item self-report questionnaire of depressive symptoms (Radloff, 1977; Weissman, Sholomskas, Pottenger, Prusoff, & Locke, 1977). Each item is scored on a 4-point scale where 0 = rarely or none of the time (less than once a week), 1 = some or a little of the time' (1–2 days a week), 2 = occasionally or a moderate amount of time (3–4 days a week), and 3 = most or all of the time (5–7 days a week). In a previous study, we found that a score based on the sum of 16 negatively worded CES-D items, excluding the four positively formulated items, was a more valid measure of depressive symptoms, both in cancer patients and healthy individuals, than a score that included the positive items (Schroevers, Sanderman, Van Sonderen, & Ranchor, 2000). Therefore, in the present study, the depression score was the sum of responses to the 16 negative items, with higher scores indicating more depressive symptoms. Cronbach's alpha in the patient and comparison groups were 0.86 and 0.84, respectively.

Social support

We used the social support list (SSL) to measure social support (Van Sonderen, 1991, 1993). Psychometric research has shown that this self-report questionnaire has good construct validity and high reliability (Van Sonderen, 1993). Based on the literature, we examined three different types of social support. First, we used the subscale 'Perceived availability of daily emotional support' (9 items) (e.g. feelings of respect, trust, listening, and the ability to have a good conversion). Respondents were asked to indicate the extent to which they perceive social support on a 4-point scale, ranging from 1 = not at all to 4 = very much; thus, higher scores indicate higher perceived availability of social support. Cronbach's alpha for patient and comparison groups were 0.87 and 0.85, respectively. Second, we used the subscale 'Lack of problem-focused emotional support interactions' (8 items) (e.g. reassuring, comforting, problem-solving, and advice). Respondents were asked to indicate the extent to which the number of supportive interactions with others differs from their preferred number of supportive interactions, thus taking into account the individual's need for social support. Items can be scored on a 3-point scale where 1 = just right, this is as I would like to have it, 2 = I do not really miss it, but it would be pleasant if it happened somewhat more often, and 3 = I really miss it, I would like it to happen more often. Thus, higher scores indicate a greater lack of received problem-focused emotional support. Cronbach's alpha for patient and comparison groups were 0.90 and 0.85, respectively. Finally, we used the subscale 'Negative interactions' (7 items) (e.g. criticising, interfering, reproaching). The items were scored on a 4-point scale, ranging from 1 = seldom or never to 4 = often. Thus, higher scores indicate more negative interactions. Cronbach's alpha in patient and comparison groups were 0.83 and 0.77, respectively.

Self-esteem was measured by the Rosenberg self-esteem scale (Rosenberg, 1965). A factor analysis on the 10 items of the scale yielded two independent factors based on the five negatively worded items (e.g. I think I'm no good at all, I feel useless, I feel like a failure) and the five positively formulated items (e.g. I feel satisfied with myself and I feel positive about myself) (Andrews, 1998; Ranchor, Bouma, & Sanderman, 1996). In the present study, we included both positive (reversed score) and negative self-esteem. Items are scored on a 4-point scale: 1 = totally agree, 2 = agree, 3 = disagree, and 4 = totally disagree. Thus, higher scores on both subscales indicate higher self-esteem. Cronbach's alpha for positive self-esteem for patient and comparison groups were 0.76 and 0.73, respectively, and for negative self-esteem 0.74 and 0.72, respectively.

The *sociodemographic variables* of gender, age, marital status, and education were collected in a semi-structured face-to-face interview. *Medical data* (site, stage, and treatment) were derived from the cancer registration from the Comprehensive Cancer Centre North Netherlands.

Results

The sociodemographic and medical characteristics of the patient and comparison groups are described in Table 1. As shown, the majority of participants in both groups were female, less educated, and living with a partner. Using *t*-tests, we found no significant difference in age between the two groups, and chi-square analyses revealed no significant differences in gender, education, or marital status.

We also examined mean differences between the patient and comparison groups in social support,

Table 1
Sample characteristics of the patient group and comparison group

	Patient group ($n = 403$)	Reference group ($n = 225$)
Gender (% female)	73	70
Age (mean ± SD in years)	58 ± 14	57 ± 15
Marital status (% partner)	77	76
Education		
Primary	39	36
Lower vocational/secondary	39	35
Middle vocational/secondary	12	16
Higher vocational/university	10	13
Cancer site		
Breast	47	
Colorectal	27	
Gynaecological	16	
Lung	7	
Other	3	
Stage		
I	45	
II	44	
III–IV	11	
Initial treatment		
Only surgery	48	
Surgery + radiotherapy	22	
Surgery + chemotherapy	7	
Surgery, radio + chemotherapy	6	
Surgery + hormonal therapy	4	
Surgery, radio + hormonal therapy	7	
Other	6	

Note. Comparisons between the patient and comparison group were not significant ($p > 0.05$).

self-esteem, and depressive symptoms. At T1, patients reported significantly more social support than the comparison group, as indicated by higher levels of perceived emotional support ($t = 2.96, p < 0.01$), less lack of problem-focused emotional support ($t = 2.55, p < 0.05$), and fewer negative interactions ($t = 2.26, p < 0.05$). No significant differences in self-esteem were found between the two groups. Cancer patients reported significantly more depressive symptoms than comparisons at T1 ($t = 4.45, p < 0.001$) and at T2 ($t = 2.94, p < 0.01$).

Interrelations among the study variables

Pearson's correlation coefficients were computed to examine the associations among social support (T1), self-esteem (T1), and depressive symptoms (T1 and T2) in the patient and comparison groups separately (Table 2). In both groups, the interrelations among the three types of social support were moderate, suggesting that they measure distinct aspects of social support. Positive and negative self-esteem were strongly related to each other in patients and the comparison group.

Positive self-esteem was moderately related to perceived emotional support in patients ($r = 0.27$) and comparisons ($r = 0.33$) ($p < 0.001$), but only weakly related to the other two types of support ($r < 0.20, p < 0.05$). Negative self-esteem was moderately related to all three types of support in both groups ($r > 0.20, p < 0.01$). In general, lower levels of social support and self-esteem were related to higher levels of depressive symptoms. It should be noted that perceived emotional support was less strongly related to depressive symptoms at T1 than the other two types of support ($r > 0.4$).

Social support and self-esteem as predictors of depressive symptoms at T1

We performed multiple stepwise regression analyses to test the associations of social support and self-esteem at 3 months after diagnosis (T1) with depressive symptoms at T1. All regression analyses controlled for all four sociodemographic variables, as these were significantly associated with both depressive symptoms and the independent variables. Separate analyses were performed for each type of social support in combination with positive or negative self-esteem. In each analysis, group membership (i.e. comparison group = 0 and patient group = 1), social support, and self-esteem were first entered as predictors. Next, the two-way interactions of group by social support and group by self-esteem were entered. These interactions tested differences between the patient and comparison groups in the associations of social support and self-esteem with depressive symptoms. Standardised scores were used to compute the interaction terms. Because only one interaction was significant, we repeated the other analyses without the interactions terms.

In Table 3, we report the results using the positive self-esteem measure. The analyses concerning negative self-esteem gave essentially similar results. As shown, social support and self-esteem were independently related to depressive symptoms, while low levels of social support and self-esteem were associated with high levels of depressive symptoms. Perceived emotional support was less strongly related to depressive symptoms than the other two types of support.

Comparisons of the patient and the comparison groups did not generally reveal significant between-group differences in the associations of social support and self-esteem with depressive symptoms. Only the Group × Lack of Problem-Focused Emotional Support

Table 2
Interrelations among the variables under study

Variable		1	2	3	4	5	6
1	Perceived emotional support	—					
		—					
2	Lack problem-focused emotional support	−0.36***	—				
		*−0.19***	—				
3	Negative interactions	−0.30***	0.40***	—			
		−0.28***	0.30***	—			
4	Positive self-esteem	0.27***	−0.16**	−0.11*	—		
		0.33***	−0.19**	−0.17**	—		
5	Negative self-esteem	0.41***	−0.36***	−0.23***	0.55***	—	
		0.37***	−0.30***	−0.21**	0.62***	—	
6	Depressive symptoms T1	−0.23***	0.51***	0.42***	−0.33***	−0.40***	—
		−0.27***	0.45***	0.48***	−0.29***	−0.36***	—
7	Depressive symptoms T2	−0.20***	0.42***	0.35***	−0.30***	−0.38***	0.68***
		−0.24***	0.39***	0.34***	−0.26***	−0.33***	0.55***

Note. Correlations in the comparison group are on the second line in *italic* figures.
*$p<0.05$.
**$p<0.01$.
***$p<0.001$.

Table 3
Multiple regression of depressive symptoms at T1 and T2 on social support and positive self-esteem at T1 in the total sample ($n = 628$)

	Depressive symptoms			
	T1		T2 (controlled for T1)	
	ΔR2	Std Beta	ΔR2	Std Beta
Perceived emotional support				
Sociodemographic factors	0.06***		0.05***	
Depressive symptoms T1	—	—	0.36***	0.59***
Group (patient or reference)	0.02***	0.18***	0.001	−0.001
Perceived emotional support	0.06***	−0.18***	0.001	−0.04
Positive self-esteem	0.05***	−0.24***	0.001	−0.06
Lack of problem-focused emotional support				
Sociodemographic factors	0.06***		0.05***	
Depressive symptoms T1	—	—	0.39***	0.59***
Group	0.03***	0.23***	0.001	−0.01
Lack of problem-focused emotional support	0.20***	0.30***	0.01**	0.11**
Positive self-esteem	0.06***	−0.23***	0.001	−0.05
Group X support	0.01**	0.15**	—	—
Group X self-esteem	0.001	−0.02	—	—
Negative interactions				
Sociodemographic factors	0.06***		0.05***	
Depressive symptoms T1	—	—	0.37***	0.58***
Group	0.03***	0.21***	0.001	−0.01
Negative interactions	0.16***	0.37***	0.01*	0.09*
Positive self-esteem	0.05***	−0.24***	0.001	−0.04

Note. Dashes indicate that regression was not calculated.
*$p<0.05$.
**$p<0.01$.
***$p<0.001$.

interaction was significant. Following the method recommended by Aiken and West (1991), analyses of this interaction showed that a lack of problem-focused emotional support was more strongly related to higher levels of depressive symptoms in patients.

Longitudinal analyses

The same multiple regression analyses were performed to examine whether social support and self-esteem at 3 months after diagnosis (T1) predict depressive symptoms at 15 months after diagnosis (T2) after controlling for depressive symptoms at T1. First, we tested the two-way interactions, but none of the interactions reached significance. Therefore, these were removed from the analyses.

As can be seen in Table 3, a lack of problem-focused emotional support and negative interactions significantly predicted future levels of depressive symptoms, although the explained variance was low. Perceived emotional support and positive self-esteem were not significant predictors of depressive symptoms at T2.

When using the negative self-esteem measure, we found that, besides a lack of problem-focused emotional support and negative interactions, negative self-esteem also significantly predicted future levels of depressive symptoms ($p<0.05$). The effect of negative self-esteem was significant in combination with all three measures of social support, but again, the explained variance was low.

Discussion

The aim of the present study was to examine the role of social support and self-esteem with respect to depressive symptoms in recently diagnosed cancer patients and a comparison group of individuals without cancer from the general population. The results indicated that social support and self-esteem were weakly to moderately related to each other. Compared to positive self-esteem, negative self-esteem was more strongly related to social support. Regression analyses showed that social support and self-esteem were independently related to depressive symptoms (concurrently), in that lower levels of social support and self-esteem were strongly related to higher levels of depressive symptoms. The longitudinal analyses showed that social support and self-esteem also predicted future levels of depressive symptoms, although the explained variance was much lower than in the cross-sectional analyses. Comparisons between cancer patients and the comparison group generally did not reveal significant between-group differences in the associations of social support and self-esteem with depressive symptoms. Only a lack of problem-focused emotional support was more strongly associated with depressive symptoms in patients than in the comparison group.

Similar to other studies (Druley & Townsend, 1998), we found weak to moderate relationships between social support and self-esteem, both in patients and in the comparison group. Specifically, positive self-esteem was moderately related to the perceived availability of emotional support, but weakly related to a lack of problem-focused emotional support and negative interactions. A possible explanation for these findings may be that the experience of positive self-evaluations is a ''natural'' state of mind. Through self-enhancing cognitions, most individuals are able to protect themselves against threats to their self-esteem and to maintain a positive self-esteem (Taylor & Armor, 1996). Interestingly, negative self-esteem was more strongly related to all three types of social support. This finding underscores the significance of the social environment for the experience of negative self-evaluations. On the other hand, persons who hold negative self-evaluations may be less likely to perceive and to be satisfied with any amount of received support.

An important finding of the present study is that social support and self-esteem were independently related to the presence of depressive symptoms. Thus, these resources seem to supplement each other additively. Consistent with previous studies, our findings emphasise the strong effect of negative social interactions on depressive symptoms (Manne et al., 1997; Rook, 1984). The question has been raised as to whether social and personal resources, instead of supplementing, augment each other interactively in their effects on psychological well-being (Thoits, 1995). However, the empirical evidence for such an interaction between social and personal resources is weak (Dalgard, Bjork, & Tambs, 1995; Grassi et al., 1997; Riley & Eckenrode, 1986). Overall, the findings favour the idea that resources supplement each other.

Generally, we did not find significant differences between patients and the comparison group in the associations of social support and self-esteem with the presence of depressive symptoms. These findings confirm the ideas of Thoits (1982, 1995) that psychosocial resources are likely to affect psychological well-being, regardless of the presence of a threatening life event. We previously mentioned several explanations for why it can be expected that, in general, social support and self-esteem are strongly related to psychological functioning. The only resource that was clearly more important to cancer patients' psychological functioning was problem-focused emotional support. At three months after diagnosis, a lack of this type of support, characterised by reassuring, comforting, problem-solving, and advice, was strongly related to higher levels of depressive symptoms, especially in cancer patients. In the initial period after diagnosis, the availability of someone with

whom the cancer patient can talk about his or her illness-related concerns seems to be of great importance for patients' adjustment (Classen, Koopman, Angell, & Spiegel, 1996; Helgeson & Cohen, 1996; Stanton et al., 2000). Others may reinforce the patient's efforts to cope with the situation and to reinterpret the situation so it seems less threatening (Thoits, 1986). In contrast, a lack of support may lead to rumination, preoccupation with the disease, self-pity and, subsequently, to psychological distress (Aymanns, Filipp, & Klauer, 1995; Sollner et al., 1999).

Cross-sectional relations of social support and self-esteem to depressive symptoms do not give us information about a possible causal direction between predictors and outcome. Our longitudinal analyses showed that persons who reported lower levels of social support (i.e. a greater lack of problem-focused emotional support and more negative interactions) and self-esteem (i.e. negative self-esteem) experienced higher levels of depressive symptoms 1 year later, after adjusting for their initial level of depressive symptoms. It should be noted that the associations of social support and self-esteem with future levels of depressive symptoms were significantly weaker than the strong cross-sectional findings. A possible explanation for this finding may be that social support has mainly a short-term effect on depressive symptoms and that its effect in the long term is limited. Furthermore, other longitudinal studies suggest that the association of social support with depressive symptoms may be the opposite (Bolger, Foster, Vinokur, & Ng, 1996; Moyer & Salovey, 1999). Rather than social support affecting future levels of depressive symptoms, the presence of depressive symptoms may lead to decreases in the mobilisation or perception of social support.

An important issue in the context of social support is that social support may be a personality characteristic rather than a feature of the social environment (McColl, Lei, & Skinner, 1995; Winnubst et al., 1988). The degree of social support that a person has available is likely to be partly determined by personality factors, especially neuroticism. Neuroticism denotes the tendency to be emotionally unstable, to experience negative emotions, and to worry about things that could go wrong (Eysenck & Eysenck, 1991). Furthermore, persons scoring high on neuroticism seem to be less successful in building, maintaining, and mobilising supportive relationships and tend to perceive less support from others than emotionally stable persons (Tempelaar, de Haes, de Ruiter, & Bakker, 1989; Winnubst et al., 1988). In the present study, we did not examine the influence of neuroticism on social support. However, studies that have taken into account the effect of neuroticism found that a lack of emotional support contributed independently to depressive symptoms, even after controlling for neuroticism (Krol, 1996). Thus, it seems that personality characteristics such as neuroticism cannot fully explain the relationship between social support and depressive symptoms.

In the present study, we made a distinction between positive and negative self-esteem. The discussion regarding the conceptual differences between positive and negative self-esteem is analogous to the discussion regarding differences between the positive and negative aspects of social relationships (Manne et al., 1997; Rook, 1984) and psychological well-being (Folkman, 1997; Russell & Carroll, 1999; Schroevers et al., 2000). As several researchers have recently urged, it is time to recognise that many psychosocial concepts may not be one-dimensional but rather multi-dimensional, measuring distinct concepts that may occur simultaneously (Andrews, 1998; Folkman, 1997; Manne, Pape, Taylor, & Dougherty, 1999). The present study showed that the results concerning positive self-esteem were essentially similar to those concerning negative self-esteem. However, negative self-esteem was more strongly related to all three types of social support compared to positive self-esteem. Furthermore, negative self-esteem was more strongly related to depressive symptoms. Thus, negative cognitions are more salient than positive cognitions in determining the level of depressive symptoms. According to Beck (1983), especially negative self-perceptions make a person more vulnerable to depressive symptoms.

Several limitations should be kept in mind when interpreting the results of the present study. First, it must be mentioned that no information was available about how many patients did not return the participation form. Furthermore, the majority of the patients included in the present study were female, less educated, living with a partner, and diagnosed with a relatively good prognosis. This may affect the validity of the findings. Second, the moderate number of people in the comparison group who returned the participation form may also cause concern regarding the validity of the findings. Still, the finding that the levels of depressive symptoms in the comparison group were comparable with those in other samples of comparisons from the general population underpins the representativeness of the comparison group (see Schroevers et al, 2002).

The present study has important methodological strengths and extends prior research among cancer patients in several ways. First, the associations among social support, self-esteem, and depressive symptoms were examined in a large group of cancer patients and the comparison group, both cross-sectionally and longitudinally, at two fixed points in time after diagnosis. Second, the inclusion of both social support and self-esteem made it possible to examine their interrelationships and to take these interrelationships into account when examining their association with depressive symptoms. Third, both positive and negative aspects of social support and self-esteem were taken into account.

Overall, the results demonstrate that supportive relationships and self-esteem play a crucial role in psychological well-being. At the group level, a diagnosis of cancer does not deteriorate these psychosocial resources. Nevertheless, at an individual level, a diagnosis of cancer may have a great impact on the availability of psychosocial resources. Health care providers should carefully monitor patients' psychosocial resources and changes herein in the weeks and months after diagnosis. By means of education or group discussions with other patients, it would be beneficial for patients and their partners may be given information about the benefits of sharing illness-related concerns and how to be more available and supportive. Patients should also be stimulated to focus on the positive aspects of themselves and their lives. The enhancement of patients' own resources may help them to manage the physical and psychosocial consequences of the illness and to restore their emotional balance.

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