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Coping, Quality of Life, Depression, and Hopelessness in Cancer Patients in a Curative and Palliative, End-of-Life Care Setting

KEY WORDS

Coping

Curative care

Depression

End-of-life care

Hopelessness

Quality of life

Palliative care

Background: Coping strategies may be important factors influencing quality of life (QOL), depression, and hopelessness. However, most studies on this issue were performed in patients still undergoing anticancer treatment. Unknown is which coping strategies are of importance for palliative-cancer patients who no longer receive treatment. **Objective:** The objectives of this study were to assess coping strategies in curatively treated and palliative-cancer patients no longer receiving anticancer treatment and to examine the relation of these coping strategies with QOL, depression, and hopelessness. **Methods:** A descriptive research design was used. Ninety-two curative and 59 palliative patients filled out the COPE-Easy abbreviated version, the European Organisation for Research-and-Treatment of Cancer QOL-Questionnaire version 2.0, Beck Depression Inventory for Primary Care, and Beck Hopelessness Scale. **Results:** In both curative and palliative patients, active coping strategies and acceptance were beneficial in terms of QOL, depression, and hopelessness, unlike avoidant coping strategies and venting of emotions. Palliative patients scored higher on the coping strategy, seeking moral support. For the outcome variable, emotional functioning, significant interactions were observed between the variable, curative/palliative care setting, and the coping

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strategy, seeking moral support. For the outcome variable, role functioning, significant interactions were observed between the variable, curative/palliative care setting, and the coping strategy, waiting. **Conclusions:** Coping strategies were significantly correlated to QOL, depression, and hopelessness. However, this correlation differed in the curative and palliative, end-of-life care setting.

Implications for Practice: The observed relations between coping strategies, QOL, depression, and hopelessness give room to cognitive-behavioral nursing interventions. Specific attention is needed for differences in coping strategies between curative and palliative patients.

In the Netherlands, 86 200 new cases of cancer were diagnosed in 2007, and the incidence of cancer is still increasing (www.ikcnet.nl). Chances of survival largely depend on the type of cancer and the stage when it is diagnosed. Roughly about half of the cancer patients can be cured. Even when a patient is cured, he/she has to deal with long-term adverse effects of the cancer treatment.¹ In everyday language, cancer is associated with terms such as battle and war, struggle, and suffering. This suggests that coping with cancer—the symptoms, diagnosis, and treatment—is a major challenge. Coping with the fact that cancer cannot be cured may be an even greater challenge.

From several studies in cancer patients, it is known that the coping strategies that patients use may be important factors influencing quality of life (QOL), depression, and hopelessness.²⁻⁴ However, most studies on this issue have been performed in patients who were treated with a curative intent. Even studies performed with so-called palliative patients—that is, patients who cannot be cured—included patients who were still undergoing anticancer treatment by means of palliative chemotherapy or radiation therapy. However, it cannot be assumed that the relationship between coping and QOL, depression, or hopelessness, which is observed in patients undergoing anticancer therapy, can be extrapolated to patients for whom all therapies have been terminated and who are facing death.

Therefore, in this study, we compare the coping strategies of cancer patients in the curative and the palliative, end-of-life care setting and examine the relation of these coping strategies with QOL, depression, and hopelessness.

■ Literature Review

Coping

The theory of coping in this study is based on Lazarus and Folkman's⁵ conceptual analysis of stress and coping. In these studies, coping was distinguished in problem-focused and emotion-focused coping. However, this approach has been proven to be too simple. On both theoretical and empirical grounds, Carver⁶ and Kleijn et al⁷ further differentiated these coping strategies into 3 main categories: active problem-focused coping, support-seeking coping, and avoidant coping. In addition to these 3 main categories, other coping strategies may be

distinguished: acceptance of the situation, religious coping,⁸ and creating positive events, for example, through humor.⁹

QOL, Depression, and Hopelessness

It is generally accepted that QOL is multidimensional (ie, comprises not only physical but also, for example, psychological and social well-being) and is subjective (ie, relies primarily on the patient's own judgment).¹⁰ In the measurement of QOL, a distinction is made between global measures of QOL and health-related measures QOL. Global measures of QOL refer to well-being and satisfaction with life as a whole, whereas health-related QOL includes various effects of disease and treatment on aspects of well-being.¹¹ In this study, we included measures for both global and health-related QOL.

The relationship between symptoms and QOL can be quite variable across patients and may vary considerably in time within an individual patient, as disease progresses or multiple symptoms occur. Patients with metastatic or recurrent disease have been shown to report worse QOL compared with nonmetastatic cancer patients.¹²

It is estimated that between 20% and 30% of cancer patients will experience clinically significant depressive symptoms at any one time.¹³ However, physicians and nursing staff often under-recognize depression in oncology patients. A common mistake is to assume that depression represents nothing more than a natural and understandable reaction to an incurable illness.¹⁴ Previously, it was shown that depression correlated to QOL in a mixed sample of hospitalized patients.¹⁵ However, we studied QOL and depression as separate outcome variables, because a patient's self-report of a bad mood, as is measured by QOL instruments, is qualitatively different from the clinical diagnosis of depression, as is measured by a specific diagnostic instrument or structured interview.¹⁶

Fostering hope is recognized as an important part of cancer care. In fact, hope is one of the essential elements in the lives of cancer patients in both the curative and palliative setting.¹⁷ Hopelessness can be subdivided into 3 dimensions: an affective dimension (lack of hope), a motivational dimension (giving up), and a cognitive dimension (lack of future expectations). A study in Italian cancer patients reported no differences in levels of hope in patients with metastatic or primary cancer.¹⁸ However, another study among

palliative care patients revealed mild levels of hopelessness.¹⁹ Although depression and hopelessness are mutually reinforcing, they have been found to be distinct constructs.²⁰

Relations Between Coping Strategies, QOL, Depression and Hopelessness in the Curative and the Palliative, End-of-Life Setting

Several studies have shown an association between coping strategies and QOL. In fact, coping strategies may play an even more important role than medical or treatment-related factors for predicting QOL.²¹ The general picture emerging from studies in patients with primary cancer and cancer survivors is that patients who used an active coping strategy, such as reappraisal or acceptance, reported a better QOL and lower levels of depression and hopelessness than those who used avoidant coping strategies, such as resignation.^{2,21–24} In a study of breast cancer patients treated with curative intent, a support-seeking coping strategy, such as emotional expression, was also related to a better QOL, but only for those patients who perceived their social context as highly receptive to hearing them talk about their cancer.²⁵ In a study of 151 breast cancer patients who were undergoing surgery with curative intent, emotion oriented coping was positively correlated with depression.²⁶

It has been suggested that as patients become sicker, their ability to perform cognitive tasks and process information may decline,²⁷ thereby reducing one of the resources people rely on for coping.²⁸ Therefore, it may be questionable whether coping strategies are potential targets for interventions in patients in a palliative, end-of-life care setting. Nevertheless, coping capacity has been shown to be a predictor for QOL in a sample of lung cancer patients who were not amenable to curative treatment.²⁹ Of note, patients undergoing palliative chemotherapy or radiotherapy were also included in that study. To the best of our knowledge, no data are available on the use of specific coping strategies and the relation of these coping strategies with QOL, depression, and hopelessness in palliative-cancer patients who do not receive anticancer treatment anymore and are facing death.

Research Questions

- In the present study, the following 3 questions will be addressed:
- Do coping strategies differ between patients who are treated curatively for cancer compared with cancer patients in the palliative, end-of-life care setting?
 - What is the relation between coping strategies, QOL, depression, and hopelessness in patients who are treated curatively for cancer and cancer patients in the palliative, end-of-life care setting?
 - Do relations between coping strategies on the one hand and QOL, depression, and hopelessness on the other hand differ between patients who are treated curatively for cancer compared with cancer patients in the palliative, end-of-life care setting?

Methods

This study used a descriptive research design. The study was approved by the institutional Medical Ethical Board of our institute, and all participating patients gave written informed consent. The inclusion criteria for curatively treated patients were as follows: patients with a history of treatment for a solid tumor, end of treatment less than 1 year ago, no signs of acute treatment toxicities, and no evidence of disease. Patients who were on adjuvant hormonal therapy could also be included in this group. The inclusion criteria for the palliative group were as follows: patients with advanced solid tumors, not receiving antitumor therapies, and recovered from acute treatment toxicities. Exclusion criteria for both groups were inability to read Dutch or extreme morbidity precluding filling out a questionnaire.

A questionnaire was sent to 236 eligible patients: 123 curatively treated patients and 113 palliative patients. Twenty-three patients who were treated curatively for cancer and 40 patients in the palliative phase did not return the questionnaire. In both groups, the most important reason (50% in the curative group, 39% in the palliative group) for not participating was not specified. Eleven patients in the palliative phase deteriorated or died before they could return the questionnaire. Eight curatively treated patients and 14 palliative patients did not fully complete the coping scales and were excluded from the analysis. Thus, data of 92 curatively treated patients and 59 palliative patients

Table 1 • Population Characteristics ^a			
	Curative (n = 92)	Palliative (n = 59)	Total (n = 151)
Sex			
Male	41 (45)	30 (51)	71 (47)
Female	51 (55)	29 (49)	80 (53)
Age, y			
Mean	55	62	58
SD	13	10	13
Relationship			
Living with a partner	78 (87)	39 (67)	117 (79)
Living alone	12 (13)	19 (33)	31 (21)
Education			
Primary	22 (24)	12 (21)	34 (23)
Secondary	45 (50)	34 (58)	79 (53)
Tertiary	24 (26)	12 (21)	36 (24)
Employment			
Paid job	40 (44)	17 (29)	57 (38)
No paid job	51 (56)	42 (71)	93 (62)
Tumor type	34 (37)	9 (15)	43 (29)
Breast			
Prostate	16 (17)	2 (3)	18 (12)
Testis	11 (12)	0 (0)	11 (7)
Lung	9 (10)	6 (10)	15 (10)
Colon/rectum	4 (4)	13 (22)	17 (11)
Melanoma	6 (7)	5 (9)	11 (7)
Other (15 different cancer types)	12 (13)	24 (41)	36 (24)

^aAppropriate frequencies are presented with valid percentages in brackets.

 **Table 2 • Patient Characteristics by Level of Agreement With Coping Strategies**

Coping Strategy	Patient Group	Score	Age (SD, n)	Male Sex (% , n)	Living With a Partner (% , n)	Education < Vocational Training (% , n)	Employed (% , n)
Seeking advice and information	Curative	Low	54.8 (15.1, 32)	16 (50.0, 32)	24 (77.4, 31)	17 ^a (54.8, 31)	15 (46.9, 32)
	High	High	54.3 (11.9, 62)	25 (41.7, 60)	54 (91.5, 59)	20 (33.3, 60)	25 (42.4, 59)
Seeking moral support	Palliative	Low	64.9 ^a (9.4, 30)	17 (56.7, 30)	18 (62.1, 29)	13 (44.8, 29)	6 (20.0, 30)
	High	High	59.7 (01.2, 29)	13 (44.8, 29)	21 (72.4, 29)	15 (51.7, 29)	11 (37.9, 29)
Venting of emotions	Curative	Low	57.6 (14.2, 33)	16 (48.5, 33)	30 (90.9, 33)	14 (43.8, 32)	11 (33.3, 33)
	High	High	52.8 (12.1, 59)	25 (42.4, 59)	48 (84.2, 57)	23 (39.0, 59)	29 (50.0, 58)
Denial	Palliative	Low	64.7 (8.3, 14)	10 (71.4, 14)	11 (78.6, 14)	7 (50.0, 14)	1 ^a (7.1, 14)
	High	High	61.6 (10.5, 45)	20 (44.4, 45)	28 (63.6, 44)	21 (47.7, 44)	16 (35.6, 45)
Seeking distraction	Curative	Low	55.1 (14.2, 50)	28 ^a (56.0, 50)	43 (87.8, 49)	19 (38.8, 49)	21 (42.0, 50)
	High	High	53.8 (11.7, 42)	13 (31.0, 42)	35 (85.4, 41)	18 (42.9, 42)	19 (46.3, 41)
Acceptance	Palliative	Low	64.3 (9.7, 31)	17 (54.8, 31)	21 (67.7, 31)	15 (48.4, 31)	7 (22.6, 31)
	High	High	60.1 (10.2, 28)	13 (46.4, 28)	18 (66.7, 27)	13 (48.1, 27)	10 (35.7, 28)
Belief	Curative	Low	52.2 ^b (13.2, 67)	30 (44.8, 67)	58 (89.2, 65)	25 (37.9, 66)	33 (50.0, 66)
	High	High	60.8 (10.5, 25)	11 (44.0, 25)	20 (80.0, 25)	12 (48.0, 25)	7 (28.0, 25)
Humor	Palliative	Low	63.0 (10.5, 45)	24 (53.3, 45)	30 (68.2, 44)	19 (43.2, 44)	11 (24.4, 44)
	High	High	60.4 (8.4, 14)	6 (42.9, 14)	9 (64.3, 14)	9 (64.3, 14)	6 (42.9, 14)
Acceptance	Curative	Low	55.1 (14.4, 44)	18 (40.9, 44)	33 ^a (78.6, 42)	16 (37.2, 43)	20 (45.5, 44)
	High	High	54.0 (11.7, 48)	23 (47.9, 48)	45 (93.8, 48)	21 (43.8, 48)	20 (42.6, 47)
Belief	Palliative	Low	63.2 (10.6, 31)	17 (54.8, 31)	23 (76.7, 30)	13 (43.3, 30)	9 (29.0, 31)
	High	High	61.4 (9.5, 31)	13 (46.4, 28)	16 (57.1, 28)	15 (53.6, 28)	8 (28.6, 28)
Humor	Curative	Low	55.7 (14.0, 17)	9 (52.9, 17)	15 (88.2, 17)	9 (52.9, 17)	4 (25.0, 16)
	High	High	54.2 (12.9, 75)	32 (42.7, 75)	63 (86.3, 73)	28 (37.8, 74)	36 (48.0, 75)
Acceptance	Palliative	Low	61.4 (10.2, 20)	14 ^a (70.0, 20)	15 (78.9, 19)	10 (50.0, 20)	5 (25.0, 20)
	High	High	62.8 (10.1, 39)	16 (41.0, 39)	24 (61.5, 39)	18 (47.4, 38)	12 (30.8, 39)
Belief	Curative	Low	52.0 ^b (13.5, 67)	31 (46.3, 67)	58 (59.2, 65)	25 (37.3, 67)	33 (50.0, 66)
	High	High	61.2 (9.0, 25)	10 (40.0, 25)	20 (80.0, 25)	12 (50.0, 24)	7 (28.0, 25)
Humor	Palliative	Low	60.7 (9.2, 35)	22 ^a (62.9, 35)	25 (71.4, 35)	16 (45.7, 35)	10 (28.6, 35)
	High	High	64.8 (11.0, 24)	8 (33.3, 24)	14 (60.9, 23)	12 (52.2, 23)	7 (29.2, 24)
Humor	Curative	Low	55.5 (12.0, 60)	26 (43.3, 60)	52 (88.1, 59)	21 (35.6, 59)	26 (44.1, 59)
	High	High	52.7 (14.7, 32)	15 (46.9, 32)	26 (83.9, 31)	16 (50.0, 32)	14 (43.8, 32)
Humor	Palliative	Low	62.3 (10.2, 44)	24 (54.5, 44)	32 ^a (74.4, 43)	20 (46.5, 43)	14 (31.8, 44)
	High	High	62.4 (9.9, 15)	6 (40.0, 15)	7 (46.7, 15)	8 (53.3, 15)	3 (20.0, 15)

Agreement with a coping strategy was computed low if a patient scored less than 2.5 or greater (on a scale from 1 to 4). Only those coping strategies are displayed for which significant differences between low and high scores were observed.

^aSignificant difference between low and high scores, $P < .05$.

^bSignificant difference between low and high scores, $P < .01$.

were available for analysis. Participants and nonparticipants did not significantly differ by age or sex.

Measurement Instruments

Basic sociodemographic data including age, marital status, and educational level were collected from all participants in a self-administered questionnaire. To measure coping, QOL, depression, and hopelessness, the following measurement instruments were included in the questionnaire.

Coping was measured by the COPE-Easy abbreviated version, which is a validated Dutch instrument for measuring coping strategies.^{7,30} COPE-Easy distinguishes between 14 different coping strategies. Five are active coping strategies, 3 are support-

seeking strategies, and 3 are avoidant coping strategies. Active coping involves active handling (actively trying to change the stressful circumstances), giving priority to dealing with the problem, positive reappraisal of the difficult situation, restraint coping (waiting until an appropriate opportunity to act presents itself), and planning (thinking about how to deal with the problem). Support-seeking coping strategies are seeking advice or information, seeking moral support, and venting of emotions. Avoidant coping strategies involve denial (refusal to believe that the stressor exists or trying to act as though the stressor is not real), giving up of one's goals, and seeking distraction. Finally, COPE-Easy distinguishes the coping strategies acceptance (of the situation), turning to a belief system/religion, and humor. Coping strategies were scored on a 4-point Likert scale from 1, not applicable, to 4,

Table 3 • Partial Correlations Between Coping Strategies and Measures of Quality of Life, Depression, and Hopelessness

		Active Handling		Planning		Giving Priority		Waiting		Reappraisal		Seeking Advice and Information	
		Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal
Satisfaction with life	<i>r</i>									0.173	0.352	0.094	0.457
	<i>P</i>									.133	.035	.417	.005
Global health status	<i>r</i>					0.308	0.260						
	<i>P</i>					.006	.125						
Physical functioning	<i>r</i>												
	<i>P</i>												
Role functioning	<i>r</i>							0.322	−0.282			−0.007	−0.336
	<i>P</i>							.004	.096			.949	.045
Social functioning	<i>r</i>												
	<i>P</i>												
Emotional functioning	<i>r</i>												
	<i>P</i>												
Cognitive functioning	<i>r</i>			0.300	0.151								
	<i>P</i>			.008	.380								
Fatigue	<i>r</i>					−0.312	0.021						
	<i>P</i>					.006	.905						
Nausea and vomiting	<i>r</i>												
	<i>P</i>												
Pain	<i>r</i>												
	<i>P</i>												
Dyspnea	<i>r</i>					−0.360	−0.034			−0.340	−0.040		
	<i>P</i>					.001	.844			.002	.819		
Appetite loss	<i>r</i>					−0.303	−0.256			−0.349	−0.134		
	<i>P</i>					.007	.133			.002	.436		
Constipation	<i>r</i>												
	<i>P</i>												
Diarrhea	<i>r</i>												
	<i>P</i>												
Financial problems	<i>r</i>					−0.073	−0.506						
	<i>P</i>					.526	.002						
Depression	<i>r</i>												
	<i>P</i>												
Hopelessness	<i>r</i>	−0.126	−0.388							−0.337	−0.269		
	<i>P</i>	.273	.019							.003	.113		

Partial correlation coefficient *r* for both the curative and palliative patient groups is given if *r* > 0.300 in at least one of both groups. Control variables were age, sex, living with a partner, education, and employment.

Global QOL was measured with the Satisfaction With Life (SWL) Scale³¹ and health-related QOL with the European Organisation for Research and Treatment of Cancer QOL Questionnaire version 2.0 (EORTC QLQ-C30v2).³² The SWL Scale has the specificity of asking about satisfaction with life as a whole, as opposed to an impression of the QOL in the past few days as is measured by EORTC QLQ-C30v2. For the SWL Scale, a sum score is constructed, 5 to 9 indicating extremely

The EORTC QLQ-C30v2 contains one scale to measure general health status. Furthermore, it distinguishes between functional scales, such as physical functioning and role functioning, and symptom scales, such as fatigue, pain, and appetite loss. The scores on the functional scales and the global health status of the EORTC QLQ-C30v2 ranged from 0, very bad, to 100, excellent, whereas the symptom scales ranged from 0, not at all, to 100, very much (cf. reference value manual for the EORTC QLQ-C30v2 at <http://www.eortc.be/>

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home/qol). In multiple studies, it has proven to be a reliable measure of QOL, with an overall reliability of 0.70 for its subscales.³² The internal consistency reliability scores in our study ranged from 0.83 to 0.93, except for the reliability of the cognitive functioning scale, which was 0.66.

Depression was measured by Beck Depression Inventory for Primary Care (BDI-PC).³³ The assessment of depression in cancer patients can be confounded by physical symptoms caused by the cancer or its treatment. The use of the BDI-PC can circumvent this problem, because it does not include somatic items. The BDI-PC contains 7 items, scored on a 0- to 3-point scale. A sum score over all 7 items is calculated, 0 indicating no hopelessness and 20 indicating maximum hopelessness.³⁴ A sum score of 4 or greater indicates a clinically relevant depression.³³ In a study by Steer et al³⁵ of 120 patients who were scheduled for a consecutive routine outpatient visit with a physician specializing in internal medicine, BDI-PC had a sensitivity of 97% and a specificity of 99% for diagnosing depression compared with the diagnostic standard, an interview using the Mood Module From the Primary Care Evaluation of Mental Disorders. The internal consistency of the BDI-PC in the study by Steer et al³⁵ was 0.85. The internal consistency reliability score in our study was 0.78.

Hopelessness was measured with Beck Hopelessness Scale.³⁴ Beck Hopelessness Scale contains 20 items with a 2-point scale ("I agree," "I don't agree"), comprising the 3 dimensions of hopelessness (affective, motivational, and cognitive). For the 20 items, a sum score is constructed, 0 indicating no hopelessness and 20 indicating maximum hopelessness. Based on the sum scores, patients can be classified into 4 groups: no hopelessness (0–3), mild (4–8), moderate (9–14), and severe (15–20).¹⁹ Internal consistency reliability of Beck Hopelessness Scale was 0.93 in a sample of 294 hospitalized patients who had made recent suicide attempts.³⁴ The internal consistency reliability score in our study was 0.90.

Statistical Analysis

To answer the first research question—do coping strategies differ between patients who are treated curatively for cancer compared with cancer patients in the palliative phase?—we first identified relevant sociodemographic variables for coping strategies by looking at associations between coping strategies (low vs high) and patient characteristics using χ^2 and t tests when appropriate. Agreement with a coping strategy was computed low if a patient scored less than 2.5 and high if a patient scored 2.5 or greater (on a scale from 1 to 4). The sociodemographic characteristics age, sex, living with a partner, education, and employment were all identified as relevant sociodemographic variables. Then, differences in means between the curative and palliative groups were assessed using analysis of covariance with the relevant sociodemographic variables as covariates.

To answer the second research question—What is the relation between coping strategies, quality of life, depression and hopelessness in patients who are treated curatively for cancer and cancer patients in the palliative, end-of-life care setting?—we first

assessed the scores on QOL, depression, and hopelessness for the curative and palliative group and then performed correlation and regression analyses. Associations between attitudes and emotions toward coping strategies on the one hand and measures of QOL, depression, and hopelessness on the other hand were analyzed by partial correlation analysis including the sociodemographic characteristics age, sex, living with a partner, education, and employment. Coping strategies that showed significant associations with a partial correlation coefficient of 0.300 or greater were taken up in a stepwise regression model, including the sociodemographic factors as independent variables and measures of QOL, depression, and hopelessness as dependent variables. In stepwise regression in SPSS (SPSS Inc, Chicago, Illinois), each variable is entered in sequence, and its value assessed. If adding the variable contributes to the model, then it is retained, but all other variables in the model are then retested to see if they are still contributing to the success of the model. If they no longer contribute significantly, they are removed. This method ensures that we will end up with the simplest equation with the best predictive power. In case more than 1 coping strategy correlated with the same outcome variable, all these coping strategies were taken up in the regression model.

To answer the third research question—do relations between coping strategies on the one hand and QOL, depression, and hopelessness on the other hand differ between curative and palliative patients—we assessed whether a significant partial correlation coefficient identified in one patient group was significantly different from the partial correlation coefficient in the other patient group using Fisher r -to- Z formula.³⁶

All statistical analyses were performed using SPSS (version 16.0.1). Statistical inferences were based on 2-sided tests, with $P < .05$ considered to be statistically significant.

■ Results

Participants

The sample consisted of 151 patients: 71 men and 80 women. The mean age was 58 (SD, 13) years. Baseline characteristics of the sample designated by curative or palliative setting are presented in Table 1.

Research Question 1: Do Coping Strategies Differ Between Patients Who Are Curatively Treated for Cancer Compared With Cancer Patients in the Palliative Phase?

We first identified relevant sociodemographic variables for coping strategies by looking at associations between coping strategies (low vs high) and patient characteristics. The sociodemographic characteristics age, sex, living with a partner, education, and employment were all significantly associated with 1 or more of the coping strategies. (Table 2) Then, between-group differences (curative vs palliative) were assessed using analysis of covariance with the relevant sociodemographic variables as covariates. Curative patients scored significantly lower

Table 4 • Stepwise Regression Analysis of Coping Strategies and Measures of Quality of Life, Depression, and Hopelessness

Dependent Variable	Group	Model	Independent Variables	Standardized Coefficients β	P	R ² Change	R ²	Adjusted R ²
Satisfaction with life	Curative	1	Living with a partner	-.245	.022	0.060 ^a	0.060 ^a	0.043
Global health status	Curative	1	Giving priority	.343	.001	0.118 ^b	0.118 ^b	0.107
		2	Giving priority	.373	.000	0.066 ^a	0.184 ^c	0.165
Role functioning	Curative		Education	.259	.011			
		1	Waiting	.257	.016	0.066 ^a	0.066 ^a	0.055
		2	Waiting	.303	.004	0.064 ^a	0.130 ^b	0.109
Social functioning	Palliative		Education	.257	.015			
		1	Sex	-.375	.007	0.141 ^b	0.141 ^b	0.123
		1	Age	.245	.021	0.060 ^a	0.060 ^a	0.049
	Curative	2	Age	.276	.008	0.067 ^a	0.127 ^b	0.106
			Education	.260	.013			
		3	Age	.290	.005	0.058 ^a	0.185 ^b	0.156
Emotional functioning	Palliative		Education	.250	.014			
			Acceptance	.241	.017			
		1	Living with a partner	.402	.004	0.161 ^b	0.161 ^b	0.144
Cognitive functioning	Curative	1	Acceptance	.235	.029	0.055 ^a	0.055 ^a	0.044
		1	Venting of emotions	-.311	.027	0.096 ^a	0.096 ^a	0.078
		1	Planning	.278	.009	0.078 ^b	0.078 ^b	0.067
		2	Planning	.296	.005	0.058 ^a	0.136 ^b	0.115
			Education	.242	.020			
Fatigue	Curative	3	Planning	.322	.002	0.042 ^a	0.178 ^b	0.148
			Education	.227	.026			
			Living with a partner	-.208	.042			
		1	Giving priority	-.304	.004	0.092 ^b	0.092 ^b	0.082
		2	Giving priority	-.343	.001	0.084 ^b	0.177 ^c	0.157
Dyspnea	Palliative		Education	-.293	.004			
		1	Sex	.280	.046	0.079 ^a	0.079 ^a	0.060
		1	Education	-.337	.001	0.113 ^b	0.113 ^b	0.103
		2	Education	-.380	.000	0.102 ^b	0.216 ^b	0.197
			Giving priority	-.323	.001			
Appetite loss	Curative	3	Education	-.407	.000	0.060 ^a	0.275 ^c	0.249
			Giving priority	-.276	.005			
			Reappraisal	-.251	.010			
		1	Reappraisal	-.283	.008	0.080 ^b	0.080 ^b	0.070
		2	Reappraisal	-.311	.003	0.042 ^a	0.123 ^b	0.102
Financial problems	Curative		Education	-.208	.047			
		1	Living with a partner	.336	.001	0.113 ^b	0.113 ^b	0.102
Depression	Palliative	1	Giving priority	-.439	.002	0.193 ^b	0.193 ^b	0.175
		1	Acceptance	-.336	.002	0.113 ^b	0.113 ^a	0.102
	Curative	2	Acceptance	-.344	.001	0.043 ^a	0.156 ^b	0.136
			Age	-.208	.044			
		1	Acceptance	-.393	.006	0.154 ^b	0.154 ^b	0.136
Hopelessness	Palliative	2	Acceptance	-.364	.008	0.074 ^a	0.228 ^b	0.194
			Giving up	.273	.044			
		1	Giving up	.350	.001	0.122 ^b	0.122 ^b	0.112
		2	Giving up	.302	.004	0.045 ^a	0.168 ^c	0.148
	Curative		Reappraisal	-.219	.034			
		1	Giving up	.459	.001	0.211 ^b	0.211 ^b	0.194
		2	Giving up	.574	.000	0.185 ^b	0.395 ^c	0.368
		3	Age	-.445	.001			
			Giving up	.533	.000	0.111 ^b	0.506 ^c	0.473
			Age	-.428	.000			
			Acceptance	-.336	.003			

Stepwise regression analysis was performed of coping strategies on relevant measures of QOL, depression, and hopelessness as determined from the correlation analysis (see Methods). Patient age, sex, living with a partner, education, and employment were entered in each model as independent relevant sociodemographic variables. Per outcome variable, all significant models are shown with the independent variables, which were entered successively.

^a $P < .05$.

^b $P < .01$.

^c $P < .001$.

on the coping strategy, seeking moral support, than patients in the palliative group (mean, 2.60 [SE, 0.09] vs 2.92 [SE, 0.12] on a scale from 1 to 4). No other significant differences in coping strategies were observed between the curative and palliative patients. In both groups, the coping strategy with the highest average score was active handling of the circumstances (mean, 3.35 [SE, 0.08] for curative patients and 3.21 [SE, 0.10] for palliative patients), whereas the coping strategy, giving up of one's goals, scored lowest (mean 1.43 [SE, 0.07] for curative patients and 1.51 [SE, 0.09] for palliative patients). Overall, active coping strategies as well as the coping strategy, acceptance and seeking moral support, scored higher than 2.5, indicating that these coping strategies were relevant for patients. In contrast, all avoidant coping strategies (denial, giving up one's goals, and seeking distraction), as well as the coping strategies venting of emotions, humor, and belief, scored below 2.5.

Research Question 2: What is the Relation Between Coping Strategies, Quality of Life, Depression and Hopelessness in Patients Who are Treated Curatively for Cancer and Cancer Patients in the Palliative, End-of-Life Care Setting?

To answer this second research question, we first assessed the scores on QOL, depression, and hopelessness for the curative and palliative groups and then performed correlation and regression analyses.

Both curative and palliative patients scored average satisfaction on the satisfaction with life scale compared with norm scores (mean, 22.7 [SE, 0.67] for palliative and 20.8 [SE, 0.85] for curative patients). However, as measured by the EORTC QLQ, palliative patients were severely limited in their daily functioning compared with curative patients (mean scores for functional scales between 26.9 and 66.2 for palliative patients and between 69.1 and 81.7 for curative patients) and reported significantly higher scores on the symptom scales (mean scores, 22.9–68.8 for palliative patients and 5.3–33.8 for curative patients). An exception is formed by the symptom financial problems: both patient groups score low on this item (mean, 16.3 [SE, 3.66] for palliative patients and 13.8 [SE, 2.7] for curative patients). Also, scores on depression and hopelessness were high in the palliative patients compared with the curative patients. Forty-eight percent of the palliative patients had a score

on BDI of 4 or greater, which indicates a clinically relevant depression. In the curative group, this was 10%.

Tables 3 and 4 show the results of the partial correlation and regression analyses of coping strategies on the one hand and satisfaction with life, measures of QOL, depression, and hopelessness on the other hand for both curative and palliative patients. Of the active coping strategies, the coping strategy, giving priority, was most frequently associated with outcome variables, that is, with global health status, fatigue, dyspnea, and loss of appetite in the curative group and financial problems in the palliative group. Except for loss of appetite, the coping strategy, giving priority, remained a significant predictor for these outcome variables in the regression analyses. The active coping strategy, planning, was a significant predictor for cognitive functioning, whereas the active coping strategy, reappraisal, was predictive for dyspnea and loss of appetite. The associations of these active coping strategies with the outcome variables all indicated a beneficial influence on patient's distress: the active coping strategies were positively associated with satisfaction with life, global health status, and functional scales of QOL and negatively associated with symptom scales and hopelessness.

In contrast, the support-seeking coping strategies, seeking advice and information, seeking moral support, and venting of emotions, were negatively associated with role functioning and emotional functioning, although a positive association was observed between seeking advice and information and satisfaction with life. None of the support-seeking coping strategies remained significant in the regression analyses, except for the coping strategy, venting of emotions, which had a negative predictive value for emotional functioning in the palliative group. No associations were observed between the support-seeking coping strategies and symptom scales, depression, and hopelessness. An exception is formed by the coping strategy, seeking moral support, which was associated with appetite loss, but it did not remain a significant predictor in the regression analysis.

Avoidant coping strategies did not seem beneficial for patients either. For palliative patients, a negative association was observed between giving up one's goals and satisfaction with life, which, however, did not remain significant in the regression analysis. Also, denial and giving up one's goals were positively associated with depression and hopelessness. In the regression analysis, the coping strategy, giving up, was predictive for depression in the palliative group and for hopelessness in both the curative and palliative groups. No associations were observed between the avoidant coping strategies and the functional and symptom scales of QOL.

✱ **Table 5 • Fisher R-to-Z Analysis of Correlation Coefficients**

		Active Handling		Planning		Giving Priority		Waiting		Reappraisal		Seeking Advice and Information	
		Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal
Satisfaction with life	<i>r</i>											0.094	0.457
Role functioning	<i>r</i>							0.322	−0.282				
Emotional functioning	<i>r</i>												
Financial problems	<i>R</i>					−0.073	−0.506						

In both the curative and palliative groups, the coping strategy, acceptance, was positively associated with emotional functioning and, in the curative group, also with social functioning. For the curative patients, the relation between acceptance and emotional functioning and acceptance and social functioning remained significant in the regression analysis. A negative association was observed between acceptance and depression (curative and palliative patients) and acceptance and hopelessness (palliative patients). Also, in the regression analysis, acceptance was a negative predictor for depression and hopelessness. The coping strategy, acceptance, was not associated with any of the symptoms scales.

No associations were observed between the coping strategy, belief, and any of the outcome measures. In palliative patients, the coping strategy, humor, was negatively associated with dyspnea, but it was not a significant predictor in the regression analysis.

Research Question 3: Do Relations Between Coping Strategies on the One Hand and QOL, Depression, and Hopelessness on the Other Hand Differ Between Curative and Palliative Patients?

To assess whether a significant partial correlation coefficient identified in one patient group was significantly different from the partial correlation coefficient in the other patient group, we used Fisher *r*-to-*Z* formula. In the curative group, the association between the coping strategy, waiting, and the outcome variable, role functioning, was significantly different from the palliative group (Table 5). In the curative group, a significant, positive correlation was observed, whereas in the palliative group, the correlation was nonsignificant and negative. In the palliative group, 5 associations were identified that were significantly different from the curative group, that is, the associations, giving priority (financial problems), seeking advice and information (satisfaction with life), seeking moral support (role functioning), seeking moral support (emotional functioning), and giving up one's goals (satisfaction with life). Although the correlation between giving priority and financial problems was negative in both the curative and the palliative groups, the correlation coefficient was significant in the palliative group only. For the other 4 associations (seeking advice and information [satisfaction with life], seeking moral support [role functioning], seeking moral support [emotional functioning], giving up one's goals [satisfaction with life]), a significant, negative correlation was

observed in the palliative group, whereas the correlation in the curative group was nonsignificant and positive.

■ Discussion

To the best of our knowledge, this is the first comparative study of coping strategies, QOL, depression, and hopelessness in a group of curatively treated cancer patients and palliative-cancer patients who did not receive anticancer treatment anymore and were facing death.

Coping Strategies, QOL, Depression, and Hopelessness: Do Curative and Palliative Patients Differ?

In our study, both in curative and palliative patients positive associations were observed between active coping strategies and acceptance on the one hand and general and functional measures of QOL on the other hand and negative associations with symptom scales, depression, and hopelessness. In contrast, avoidant coping strategies and the coping strategy, venting of emotions, were negatively associated with general and functional measures of QOL and positively associated with depression and hopelessness. Our patients may have gained this knowledge by experience, because relatively high scores were observed for the active coping strategies and the coping strategy, acceptance, whereas patients scored low on avoidant coping strategies and the coping strategy, venting of emotions.

Despite this general picture of resemblance between curative and palliative patients, when looking in more detail into the results, interesting differences appear. First of all, palliative patients scored significantly higher on the coping strategy, seeking moral support, than did curatively treated patients. The higher scores on the moral support-seeking coping strategy in the palliative setting may be due to the fact that seeking moral support is operationalized as "seeking support with family or friends."^{6,7} Possibly, in the palliative, end-of-life setting, family and friends are more at hand for support than in the curative setting. However, in the palliative group, seeking moral support was negatively associated with role and emotional functioning, although in the regression analysis, this did not remain significant—and the correlation coefficient between the coping strategy, seeking moral support, and role and emotional functioning was significantly different for palliative and curative patients. Therefore,

Seeking Moral Support		Venting of Emotions		Denial		Giving Up One's Goals		Seeking Distraction		Acceptance		Belief		Humor	
Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal	Cur	Pal
0.012 -0.407															
0.059	-0.406														
0.178	-0.361														

in contrast with curatively treated patients, it is questionable whether the coping strategy, seeking moral support, is beneficial for patients in the palliative, end-of-life care setting.

A further comparison of the correlations between coping strategies and QOL, depression, and hopelessness revealed a significant difference between the curative and palliative groups for the coping strategy, waiting, and the outcome variable, role functioning. Moreover, the coping strategy, waiting, had a positive predictive value for role functioning in the curative group. This implies that, in the curative setting, patients may well be advised to adopt a waiting attitude, whereas this may not be useful in the palliative, end-of-life setting. Looking at the limited life span of palliative patients, this can well be understood. From this perspective, the significant difference in correlation between the coping strategy, giving priority, and the outcome variable, financial problems, in the curative and palliative groups and the predictive value of this coping strategy in the palliative group may also be understood.

Beneficial Coping in Cancer Care: Beyond Emotion and Avoidance, Toward Acceptance and Active Coping

In our study, the active coping strategies, planning, giving priority, reappraisal, and waiting, and the coping strategy, acceptance, were predictive for a better QOL and lower levels of depression and hopelessness, in contrast to the coping strategy, venting of emotions, and the avoidant coping strategy, giving up. These results are in line with previous results in patients with primary cancer and cancer survivors.^{2,21–24}

The observation that venting of emotions was predictive for reduced emotional functioning is important for daily practice, as patients are often encouraged to express their emotions and not to keep their feelings or tears for themselves. However, based on these and other results,^{25,26} it is questionable whether venting of emotions as a coping strategy is really helpful. It has been suggested that avoidant coping strategies may be beneficial in some circumstances, especially in the palliative care setting, allowing patients to live in the present, enjoy times when they feel well and appreciate the time they have.²⁸ However, our data do not support this hypothesis.

In the literature, the results on the relation between acceptance and depression are conflicting. In a study among breast cancer patients, it was shown that acceptance following diagnosis was associated with depression and anxiety 3 years later.³⁷ In contrast, in a group of patients with early-stage or regionally advanced gynecologic cancers, acceptance and positive reframing at their initial visits predicted better 1-year QOL.³⁸ Those with continued higher levels of these coping strategies at 1 year reported better concurrent functional and emotional well-being. Apparently, as is also shown by our data, acceptance and more active coping strategies may exist together in patients and may be beneficial for patients' well-being. This is relevant because family and friends may find it hard to understand that a patient accepts his/her situation and may advise a more fighting spirit.

The observed relations between coping strategies, QOL, depression, and hopelessness give room to cognitive-behavioral nursing interventions. This is of special importance in palliative patients, as the low levels of QOL and the high number of depressed and hopeless patients in our study indicate that treatment of and care for these patients are still insufficient. It has been shown previously that the treatment of depression in terminally ill cancer patients with conventional pharmacological treatment is difficult,³⁹ and the combined approach of pharmacological and psychosocial intervention may be most appropriate.⁴⁰ Also, in a randomized study of 134 patients with recurrent breast cancer, an intervention addressed at, among others, coping effectiveness (more active, less avoidant coping) resulted in less hopelessness in the intervention group, suggesting that specific intervention strategies can mitigate hopelessness when facing advanced disease.⁴¹ Nevertheless, a medical approach of the problems of cancer patients often prevails, even when patients are at the end of their lives. In fact, dying patients may receive invasive and inappropriate medical treatments in the days and hours before death, despite evidence of their poor prognosis.^{42,43} Further research needs to be performed to show that cognitive-behavioral interventions may be (more) appropriate, also in the last phase of life.

Limitations

The results of this study should be interpreted with caution. A mixed convenience sample was used, including a variety of cancer diagnosis. In the palliative group, 52% of the patients returned the questionnaire. Although this percentage is quite good considering the phase of life we were asking patients to fill out questionnaires, we have to acknowledge that a selection bias may be present. Therefore, generalization of the results beyond the sample of this study is restricted. Also, our patient groups were relatively small, precluding the detection of subtle differences between the groups or small but significant associations between coping strategies, QOL, depression, and hopelessness.

Implications for Practice and Research

Given the results of our study, together with others,^{2,21–24} demonstrating that active coping strategies and the coping strategy, acceptance, were predictive for a better QOL and lower levels of depression and hopelessness—in contrast to the coping strategy, venting of emotions, and the avoidant coping strategy, giving up—health care practitioners should treat cancer patients in a manner consistent with this evidence.

Oncology nurses are in a key position to incorporate psychosocial care in their daily practice, thereby influencing patients' QOL.⁴⁴ Although the patient's perspective is essential in QOL assessment, not all patients take the initiative of sharing their currently perceived QOL with the health care provider.⁴⁵ In turn, professionals do not gather information proactively from the different domains, but often wait for patients to report their problems and fail to address all relevant issues.⁴⁶ Previous research shows that nurses can involve individuals with cancer in

assessing their QOL to assist in providing high-quality care that is directed at positively affecting QOL.⁴⁴

Specific attention to differences in coping strategies between cancer patients in the curative and the palliative, end-of-life care setting is warranted. Especially in the palliative care setting, patients may rely on seeking moral support from family and friends as a coping strategy, whereas, for example, active coping strategies may be more beneficial. This is not only of importance for nurses as professional caregivers of palliative patients, but also because nurses have an important role to play in communication with and education of family and friends.⁴⁷ Also, in the curative setting, a waiting attitude may well be advised to patients, whereas this may not be useful in the palliative, end-of-life setting.

Nevertheless, challenges exist in achieving the translation of research into clinical practice.⁴⁸ First, further research needs to be performed to show that cognitive-behavioral interventions are efficacious for improvement of QOL and a decrease in depression and hopelessness in cancer patients in the curative and the palliative, end-of-life care setting. Furthermore, health care providers need to be made aware of the available evidence and be persuaded to change their current practice. Evidence-based psychosocial assessment and intervention strategies need to be developed and incorporated in clinical practice guidelines.

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