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Satisfaction with hospital care in older patients with colorectal cancer, the importance of a warm welcome

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Dear Editor,

Due to improvements in diagnosis and treatment, in combination with an ageing population, the number of older patients with colorectal cancer (CRC) is increasing [1]. However, lack of information about this heterogeneous group of patients and increasing treatment complexity result in suboptimal treatment for a significant proportion of older patients with CRC [2]. Nevertheless, little is known about how these individuals experience the hospital care received, and how their care can be improved. As long as it is unknown what influences satisfaction, care that meets the needs and wishes of older patients with cancer is difficult to achieve.

Some studies that focus on patients' experiences with cancer care in general indicate that satisfaction is associated with certain patient characteristics, such as civil status, education, ethnicity, and quality of life (QOL). However, apart from age (i.e., older people being more satisfied), the associations between patient characteristics and healthcare satisfaction lack consistency [3].

Certain components of cancer care itself are more closely associated with overall satisfaction levels than other components. Specifically, the quality of the interactions with physicians (especially information exchange), nurses, and office staff was found to be associated with overall care ratings, as well as getting the care needed and care coordination [4].

The aim of this study was to investigate whether these variables are associated with satisfaction in a cohort of older patients with CRC.

The study was conducted in two Dutch medical centres from June 2016 till November 2017. A survey was sent to patients with CRC, aged 70 years or older, from a community hospital and a university medical centre. The Medical Ethical Committee of Isala Hospital, Zwolle, approved the study (reference number: 16.0125). Each participant gave informed consent.

Participants completed a slightly adapted version of the Outpatient Hospital Care Consumer Quality Index (CQ-Index Poliklinische Ziekenhuiszorg [5]), which is a validated questionnaire that measures several components of patients' experiences with outpatient hospital care. Patient characteristics and care components that showed significant univariate associations with hospital satisfaction were entered into two separate multivariate regression analyses (i.e., one with patient characteristics and one with care components) to predict patient satisfaction.

Of the 252 participants, 149 (59.1%) completed the questionnaire and were included in the analysis (Appendix A describes the characteristics of the study population). Most patients were very satisfied with the CRC care received. The average rating was 8.63 (SD = 1.00), and almost 25% of the patients gave the maximum score of 10. The correlations between the patient and care variables and overall hospital satisfaction were generally small, except for hospital reception (see Appendix B). Regarding patient characteristics, patients with partners were more satisfied with hospital care than patients without partners ($r_s = -0.17$; $p = 0.037$), as were patients who received adjuvant chemotherapy ($r_s = 0.17$; $p = 0.045$). Patients with a more favourable opinion about their health tended to rate the overall hospital care more positively ($r = 0.23$; $p = 0.005$), while patients who received professional care at home after being treated for CRC were less positive than patients who did not receive such care at home ($r_s = -0.24$; $p = 0.005$). No other patient characteristics were significantly associated with overall hospital satisfaction.

All care components included were significantly associated with overall hospital satisfaction. The association between hospital reception and overall satisfaction appears stronger than any other association ($r = 0.48$; $p < 0.001$), even more so than opinion about doctors ($r = 0.37$; $p < 0.001$) and nurses ($r = 0.31$; $p = 0.001$). Patients who felt welcome and were received by a helpful and attentive reception desk employee were more satisfied with the overall hospital care than patients who were less positive about the reception. The other care components: information, involvement in treatment decisions, and involvement of a companion were also positively associated with satisfaction (r between 0.18 and 0.29, $p < 0.05$).

Multivariate analyses showed that the patients' opinions about their own health and support received from professionals at home after

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Table 1
Linear models of predictors of overall hospital rating.

	Model 1 (141 patients) R ² = 0.148			
	<i>b</i>	<i>SE b</i>	β	<i>p</i>
Patient characteristics				
Constant	8.41	0.53		<0.001
Marital/living status	-0.23	0.19	-0.10	0.216
Chemotherapy	0.28	0.18	0.13	0.113
Perceived health	0.23	0.10	0.19	0.018
Support from professionals at home	-0.49	0.20	-0.20	0.016
Model 2 (88 patients) R ² = 0.266				
	<i>b</i>	<i>SE b</i>	β	<i>p</i>
Care components				
Constant	2.72	1.45		0.064
Hospital reception	1.07	0.29	0.44	<0.001
Opinion about doctor	0.26	0.47	0.07	0.584
Opinion about nurse	0.20	0.25	0.11	0.419
Information	-0.24	0.20	-0.15	0.226
Involvement in treatment decisions	0.08	0.11	0.08	0.449
Involvement of companion	0.17	0.26	0.07	0.515

b = unstandardized B: the individual contribution of each predictor in the model.

SE b = coefficients standard error *b*.

β = standardized coefficients beta: the number of standard deviations that the outcome changes when the predictor changes by one standard deviation.

Bold indicates significance at *p* < 0.05.

treatment remained significantly associated with the overall hospital satisfaction (*b* = 0.23; *p* = 0.018 for perceived health and *b* = -0.49; *p* = 0.016 for professional support at home; Table 1 – Model 1). This model explained 14.8% (*R*²) of the variance of the overall hospital satisfaction. Multivariate analysis of the six care components resulted in an explained variance of 26.6% (*R*²). Hospital reception was the only care component that remained significantly associated with the overall hospital satisfaction in the multivariate model (*b* = 1.07; *p* < 0.001; Table 1 – Model 2).

Because of missing values in the care component model (*n* = 88), we ran a sensitivity analysis excluding those variables with the lowest *n*. However, after removal of involvement in treatment decisions and opinion about nurses, the results were comparable to Model 2.

Overall, older patients with CRC were very satisfied with their hospital care. Almost 15% of the variance of overall hospital satisfaction is explained by the patient characteristics. This relatively small amount is consistent with a meta-analysis which demonstrated that patients' sociodemographic characteristics had extremely modest correlations with satisfaction with medical care [6]. Meanwhile, the care components model explained 26.6%. Hospital reception appeared to be especially important. This component seems to be overlooked in studies about cancer patients' satisfaction with care. Previous studies mainly focused on patient characteristics and care characteristics such as technical competence, interaction with nurses and specialists, decision-making, and continuity of care. As far as we know, only a single study shows the influence of the hospital staff's attitude at admission on patient satisfaction [7]. Hospital reception provides patients with a first impression that appears to influence the overall hospital experience. Patients consider hospitality elements such as a respectful and personal treatment, and acknowledgement of their concerns as highly important [8]. Other elements of the hospitality industry such as an attractive physical environment, tasty food, entertainment, and enhanced services have already been introduced into some hospitals [9].

Besides hospital reception, perceiving one's own health as poorer was associated with lower care satisfaction in the multivariate analysis. This result is in line with a study reporting on the association between

general health and general satisfaction in hospitalised patients with advanced cancer [10]. However, earlier studies show mixed results concerning the relationship between QOL and satisfaction, and some authors warn about assuming these factors are relevantly correlated at all because only modest associations between patient satisfaction and HRQOL have been found [11]. Patients who received professional care at home after CRC treatment were less satisfied with the hospital care. This may be partly explained by the fact that they are likely to have poorer health, or by poor care coordination and follow-up from the hospital. The exact reasons why these patients are less satisfied with the hospital care need to be explored further.

The response rate of almost 60% is a main strength of this study, and it reflects the willingness of older patients to contribute to CRC care improvement. Nonetheless, some items had relatively low response rates and this may have influenced the effect on overall satisfaction, although excluding these variables did not change much in the sensitivity analysis. Another limitation of our study is its cross-sectional nature which made it impossible to test causality. Experimental studies are needed to give more insight into the causality of the relationships [12], while qualitative research can provide more information about the reasons why some patients are less satisfied than others. Recall and response bias (i.e., ceiling effects) may also have influenced the results. However, high satisfaction levels are common in patient satisfaction research [3,13]. Finally, because only one patient had a non-Dutch nationality and we had excluded palliative patients and patients with severe cognitive problems, the results cannot be generalised to older CRC patients from minority ethnic groups and very vulnerable patients.

To our knowledge, this is the first study of hospital care satisfaction of older patients with CRC. Despite the high satisfaction scores of these patients, there are indications for turning suboptimal care into more optimal care. The circumstances of patients without a partner, patients in poor health, those without adjuvant chemotherapy, and patients receiving support at home after treatment warrant attention. On the 'supply side', the hospital reception was a crucial determinant of hospital care satisfaction. To keep patients satisfied or to increase satisfaction of older patients with hospital care, investing in a warm welcome and pleasant reception deserve high priorities.

Author Contributions

Study concepts: Van Ee, Hagedoorn, Honkoop, Kamper, Slaets, Smits.
Study design: Van Ee, Hagedoorn, Honkoop, Kamper, Slaets, Smits.
Data acquisition: Van Ee, Honkoop, Kamper.
Quality control of data and algorithms: Van Ee, Hagedoorn, Slaets.
Data analysis and interpretation: Van Ee, Hagedoorn, Slaets, Smits.
Statistical analysis: Van Ee, Hagedoorn, Slaets.
Manuscript preparation: Van Ee, Hagedoorn, Slaets, Smits.
Manuscript editing: Van Ee, Hagedoorn, Honkoop, Kamper, Slaets, Smits.
Manuscript review: Van Ee, Hagedoorn, Honkoop, Kamper, Slaets, Smits.

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Declaration of Competing Interest

The authors have no conflicts of interest to disclose.

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Appendix A. Patient Demographics and Clinical Characteristics

Characteristics	Overall n ^a (%)
Age, (years)	n = 141
Mean (SD)	77.56 (5.32)
Range	70–93
70–74	49 (34.8)
75–79	46 (32.6)
80–84	28 (19.9)
≥85	18 (12.8)
Sex	n = 149
Male	82 (55)
Female	67 (45)
Has a partner	n = 149
Yes	109 (73.2)
No	40 (26.8)
Number of children	n = 148
0	8 (5.4)
1	14 (9.5)
2	63 (42.6)
3	40 (27.0)
>3	23 (15.5)
Nationality	n = 149
Dutch	148 (99.3)
German	1 (0.7)
Educational level ^b	n = 146
None	8 (5.5)
Low	49 (33.6)
Moderate	51 (34.9)
High	38 (26.0)
Months since diagnosis	n = 144
Mean (SD)	20.72 (18.85)
Treatment modality (more than one method is possible)	n = 148
Surgery	
Yes	147 (99.3)
No	1 (0.7)
Chemotherapy	
Yes	44 (29.7)
No	104 (70.3)
Radiotherapy	
Yes	23 (15.5)
No	125 (84.5)
HIPEC	
Yes	2 (1.4)
No	146 (98.6)
Number of comorbid diseases	n = 149
0	45 (30.2)
1	61 (40.9)
2	29 (19.5)
>2	14 (9.4)

Total number of patients = 149.

HIPEC = Hyperthermic Intraperitoneal Chemotherapy.

^a n = number of patients. Missing values due to unanswered questions.

^b None = did not finish primary education; low level = primary education and possibly a little further training; moderate level = secondary general vocational education; high level = higher general vocational education or university education.

Appendix B. Patient Characteristics and Care Components Compared to Overall Hospital Satisfaction

Predictor	Outcome of satisfaction with overall hospital care of 144 patients		
Patient characteristics	Correlation ^a	p	n ^b
Age	−0.08	0.331	136
Sex	−0.14	0.097	144
Marital status	−0.17	0.037	144
Children	−0.11	0.212	143
Education	−0.30	0.726	141
Months since diagnosis	−0.02	0.839	139
Chemotherapy	0.17	0.045	143
Radiotherapy	−0.07	0.428	143
Comorbidities	−0.10	0.251	144

(continued)

Predictor	Outcome of satisfaction with overall hospital care of 144 patients		
Patient characteristics	Correlation ^a	<i>p</i>	<i>n</i> ^b
Perceived health	0.23	0.005	144
Influence of CRC on life	−0.15	0.068	143
Support from relatives	−0.30	0.725	144
Support from professionals at home	−0.24	0.005	142
Care characteristics			Mean (SD)
Hospital reception	0.48	<0.001	144 3.75 (0.37)
Opinion about doctor	0.37	<0.001	142 3.82 (0.31)
Opinion about nurse	0.31	0.001	111 3.61 (0.50)
Information	0.29	0.001	142 3.55 (0.70)
Involvement in treatment decisions	0.27	0.003	114 3.23 (1.02)
Involvement of companion	0.18	0.033	134 3.88 (0.39)

CRC; colorectal cancer.

n = Number of patients.Bold indicates significance at *p* < 0.05^a Pearson correlation for continuous/ordinal and Spearman for nominal/dichotomous variables.^b The number of patients may be slightly lower because correlations are based on those patients who filled in both the overall satisfaction score (*n* = 144) and the patient characteristics and care components concerned.

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