

# Monitoring and blunting in palliative and curative radiotherapy consultations

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## Abstract

**Objective:** The present research paper investigates how cancer patients' monitoring and blunting coping styles are reflected in their communications during their initial radiotherapy consultations and in their evaluations of the consultation. Additionally, it is explored how a patient's disease status (curative versus palliative) influences the effects of his or her cognitive styles.

**Methods:** The study included 116 oncology patients receiving treatment from eight radiation oncologists. For 56 patients treatment intent was palliative and for the remaining 60 curative. The patients' communicative behaviors were assessed using the Roter Interaction Analysis System (RIAS). Within three days the patients completed a monitoring and blunting inventory and after another six weeks they evaluated the treatment decision and treatment information by postal questionnaire.

**Results:** Monitoring was positively and blunting negatively related to the patient's expression of questions, emotions and decision-making issues. After six weeks 'high monitors' as opposed to 'low monitors' reported having more doubts about the treatment decision and being less satisfied with the information received while 'high blunters' expressed fewer doubts and more satisfaction than 'low blunters' did. Significant associations were all attributable to the palliative treatment group.

**Conclusion:** Cancer patients' communicative behaviors vis-à-vis their oncologist hinge on their cognitive styles and an unfavorable disease status enhances the effects.

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**Keywords:** monitoring blunting cognitive style; cancer; communication in oncology; palliative treatment; curative treatment

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## Introduction

When being diagnosed with a serious illness like cancer, many people are overwhelmed by fear and a sense of loss of control over their lives. They have to face a multitude of uncertainties such as the consequences of the disease, the burden of treatment, the prognosis and the chances of a full recovery. Moreover, the medical information they subsequently receive can be very threatening and thus increase their distress. The opposite can also apply when positive or reassuring new details will reduce their uncertainty by providing a clearer picture of what they can expect [1–3]. Detailed information may also help patients to understand and cope with events, to regain a sense of control and to participate actively in the consultations with their doctors and crucial decision-making moments.

## Cognitive coping styles: monitoring and blunting

According to Miller, individuals can use two main cognitive coping styles in dealing with potentially threatening information in uncontrollable and unpredictable stressful situations: monitoring and blunting [4,5]. Monitoring is defined as 'the tendency to seek threat-relevant information' and blunting as 'the tendency to cognitively avoid threat-relevant information and to seek distraction from threat' [6,7]. Although the styles are conceptualized as opposite tendencies, Miller claims they are independent: individuals can use either at different moments [8].

Studies that have investigated the effects of the two coping styles in threatening medical situations [5,9–17] demonstrated positive and negative effects for both, depending on the individual's circumstances and the occasion. When facing a health

threat, *monitors* benefit from the elucidation of present and future health issues ('predictability') and may take appropriate actions based on this new-found 'controllability' [7]. Miller *et al.* [17] developed an educational intervention to increase understanding of genetic testing for breast/ovarian cancer and reported that high monitors showed greater increases in knowledge and perceived risk over a 6-month interval than low monitors did. For high monitors, information might clarify their situation, enable them to attach appropriate meanings to experiences and to work through their experiences [6]. However, they might also remain focused on the negative aspects, thus sustaining high arousal levels. *Blunters*, preferring distraction, relaxation and reinterpretation strategies, benefit from processing the aversive events in a less negative fashion, although uncertainty can remain high [6,18,19]. Additionally, blunters risk developing pathological avoidance behavior due to their reluctance to confront the stressor [20].

As to medical consultations, high monitors appear not only to desire more extended information than high blunters, they also value kindness and respect by their doctors more [6]. Pieterse and colleagues likewise found that high monitors set great store by medical information about what to expect as regards emotional consequences and their cohort tended to have high preferences for receiving emotional support [21]. Also, in Miller's 1995 study among patients with metastatic cancer, high monitors were less satisfied with the information they received and with the psychosocial aspects of their care relative to low monitors. Remarkably, high monitors do seem to prefer a more passive role in clinical decision making [12].

In general, patients benefit from communication that is tailored to their cognitive coping styles: high monitors are less anxious if they receive ample medical information, attention, and reassurance, while high blunters are content with basic medical information and need little else [6,9,10,22–26].

Most studies assessed patients' coping styles by reported preferences and not by behavioral indicators. As high monitors are defined as information seekers, it follows that they will ask their doctors more questions than low monitors, thus prolonging their medical consultations. Miller *et al.* did investigate coping styles in children relative to their communicative behaviors but found no relationship between their monitoring or blunting styles and question asking [27]. Ong and colleagues [16] did find monitoring to be positively related to their adult cancer patients' question asking during the initial treatment discussion with their oncologists. Blunting, however, proved not associated with any aspect of the patients' verbal communications. Evidently, patients' coping styles and information seeking behavior warrant further scrutiny.

## Cognitive coping styles in cancer patients

Cancer can be characterized as an uncontrollable health threat, which puts monitoring patients at a disadvantage. Gard and colleagues [28] reported high monitors to show more distress and depressed feelings than high blunters prior to treatment initiation, and Lerman *et al.* [29] observed increases in general distress from baseline to follow-up in high monitoring women receiving individualized breast-cancer risk counseling. Moreover, during and after treatment, a higher proportion of the high monitors experienced unpleasant side effects from chemotherapy, such as nausea and vomiting, and during longer periods, than the proportion of blunters who suffered from such problems [30].

The patient's specific disease status may also play a crucial role. Therefore, research into cancer patients' coping styles should address the curability aspect. As expounded above, monitoring is helpful when problems can be resolved but less so in unmanageable conditions, making blunting less appropriate in the first and the superior style in the latter situation. Accordingly, high monitors would fare better than high blunters when curable cancer types are involved whereas with incurable cancers high blunters might come more easily to terms with the only available option of palliative care. Patients with incurable cancer will receive more inauspicious information than patients with curable cancer. Our recent study on communications during oncological consultations concerning either palliative or curative treatment intent furthermore yielded significant differences in the patients' communicative behaviors [31]. Although most patients infrequently asked for information, the patients scheduled for palliative radiotherapy asked slightly more questions about their prognosis than those scheduled for curative radiotherapy (see further [31]). The question whether treatment intent differently affects the communications and information evaluation of patient's with a monitoring and blunting coping style merits further investigation.

## Aim of the present study

Accordingly, the aim of the present study was twofold. We first wished to investigate how monitoring and blunting are reflected in the communications of cancer patients during their initial radiotherapy consultation and in their subsequent evaluation of the consultation. Second, we examined whether the patient's disease status influenced the effects of their respective coping styles. We expected that high monitoring as opposed to low monitoring would be related to more patient questions and emotional utterances and a lower participation in decision making, and that high blunting would correlate with fewer

patient questions and emotional verbalizations. Furthermore, since a patient's communicative style affects the clinician's, we predicted that consultation duration would correlate positively with monitoring and negatively with blunting.

We also explored how patients would evaluate the treatment decision and the information received during that initial consultation six weeks after the consultation hypothesizing that high monitors would rate the communication concerning these topics as less satisfactory than low monitors would, and the opposite for blunters. Finally, in view of the greater threat inherent to palliative treatment, we examined whether correlations between coping styles and evaluative outcomes would predominantly occur in the palliative treatment group.

## Methods

### Study site, subjects and procedure

The present study is part of a larger research project on communication in radiotherapy consultations in the Netherlands, which includes video recordings of patient-radiation oncologist consultations with both palliative and curative treatment intent. The study was approved by the Medical Ethics Committee of the investigating hospital.

All participants were recruited from a consecutive series of newly referred patients visiting one of the eight participating radiation oncologists in an academic hospital in The Netherlands between April 2000 and May 2002. At the start of the consultation, the radiation oncologist briefly described the study and invited the patient to participate. Excluded were patients who had an insufficient command of the Dutch language, were younger than 18 years or had a life expectancy lower than 3 months. If the patient agreed to participate, the researcher (LMT) was called in to explain the study in more detail and provide written information. Following the patient's consent, the remainder of the consultation was videotaped (T1). After the consultation, the patient received a questionnaire on monitoring and blunting coping styles and was asked to send in the completed inventory within three days (T2). Subsequent curative (CRT) or palliative radiation therapy (PRT) treatment intent and patient demographics were obtained from the patients' medical records.

Six weeks later, the participants received a postal self-report questionnaire to evaluate the treatment decision and information received during the initial consultation (T3). We opted for a 6-week follow-up because in most cases the radiation treatment is (nearly) completed then and patients have gathered

sufficient experience with the treatment to be able to reflect on it.

### Instruments and assessments

*Monitoring and blunting coping styles* were assessed using the Threatening Medical Situations Inventory (TMSI) [7,14,32]. Based on Miller's general concepts of monitoring and blunting [4,5], van Zuuren and co-workers developed the inventory to measure the coping styles specifically within the context of medical threats [14,32].

The original version comprises four descriptions of threatening medical situations varying with respect to the two important stress parameters with respect to the two important stress parameters in threatening situations: predictability and controllability. In the present study, we used the shortened version as validated by Ong and colleagues [16] including the two highly unpredictable situations ('choosing for uncertain heart surgery' and 'vague, suspicious headache').

Following each situation three randomly sequenced monitoring and three blunting statements are to be judged on a 5-point Likert scale (1 indicating 'does not apply to me at all' and 5 'strongly applies to me'). The monitoring items pertain to three different aspects: (a) seeks information relating to the threatening situation (e.g. 'I intend to ask the specialist as many questions as possible'); (b) thoroughly explores the situation by reading about it (e.g. 'I intend to start reading about headaches'); and (c) gains information about the situation from other doctors, patients or organizations (e.g. 'I intend to contact patients who have the same problem, to get information'). The blunting items cover two aspects: (a) seeks distraction away from the threatening situation (e.g. 'I intend to do as many pleasant activities as possible during the coming weeks'); and (b) maintains an optimistic outlook (e.g. 'I am thinking: it will turn out alright') [16]. Monitoring and blunting total scale-scores were calculated by adding up the relevant item scores (range for both scales: 6–30). We obtained a Cronbach's  $\alpha$  of 0.75 and 0.79 for the monitoring and blunting scale, respectively. The scales were unrelated to each other (Pearson's product moment correlation =  $-0.07$ ).

*Patient communications* were evaluated by the RIAS [33]. The RIAS permits classification of all the speakers' utterances into mutually exclusive content categories. The categories were adapted to our study and condensed into (sub)clusters as shown in Appendix A, which also lists examples of utterances per subcluster. Inter-coder reliability was established as being satisfactory in the radiotherapeutic context for all categories [34]. Since we were (only) interested in relations between patients' cognitive styles and their communicative

behaviors, utterances of patients and proxies were coded separately. The duration of the consultations was measured in minutes.

*Patient evaluations of treatment decision* were assessed by one statement to be rated on a 5-point scale (1—'I totally disagree' and 5—'I totally agree'): 'Looking at things after having undergone radiotherapy, I am in doubt about the treatment decision'.

*Patient satisfaction with the information provision* was gauged with four statements all to be appraised on 5-point Likert scales ranging from 1—'I totally disagree' to 5—'I totally agree': 'Looking at things after having undergone radiotherapy, my radiation oncologist provided sufficient information about... (1) the treatment procedures, (2) the possible side effects, (3) the physical impact of the treatment, and (4) the emotional impact of the treatment'.

## Statistics

All statistical analyses were carried out using the SPSS for Windows (version 11.5). Relations were assessed of TMSI scales with some main person characteristics: gender; age; and educational level. The relations between the TMSI scales and gender were assessed using Student's *t*-tests, age by Pearson's correlations, and educational level (<9 years being classified as 'low', 9–14 years as 'intermediate' and >14 years as 'high') by chi-square tests.

Based on their medical records patients were assigned to either a CRT or PRT treatment group. Student's *t*-tests were applied to assess TMSI between-group differences and to compute whether consultation duration was associated with the patients' TMSI scores and treatment intent. Spearman's correlations were used to assess the relationship between TMSI scale scores and the numbers of patient utterances to RIAS clusters.

To assess the effects of monitoring and blunting on consultation duration, 'high' and 'low' monitoring and blunting subgroups were composed using the respective median scores as cut-off scores. Spearman's correlations were also used to assess the association between TMSI scale scores and the patient ratings of the treatment decision and information received. In addition, Spearman's correlations were assessed for the curative and palliative treatment groups separately.

## Results

### Study sample

During the recruitment period, 206 of a total of 224 consecutively invited patients agreed to participate (92% accrual rate). Non-participating patients indicated feeling too ill ( $n = 6$ ) or failed to give a reason ( $n = 12$ ) for refusing. Due to technical

**Table 1.** Demographics and disease status of the cancer patients

Patients	<i>n</i> = 116
<i>Age</i>	
Mean age in years (S.D.)	59 (13)
Minimum	33
Maximum	83
<i>Gender</i>	
Male	51%
Female	49%
Accompanied by at least one proxy	88%
<i>Education</i>	
Low (<9 years)	44%
Intermediate (9–14 years)	33%
High (>14 years)	17%
<i>Treatment intent</i>	
Palliative	56 (48%)
Curative	60 (52%)

problems, 16 video recordings were incomplete, leaving 190 complete video recordings. Seventy-four patients failed to return the T3 questionnaire. Thus, at T3 full video recordings and both questionnaires were available for 116 patients (61%), i.e. 60 CRT and 56 PRT patients. The participants whose T3 data were incomplete did not differ on treatment intent, gender or age from the other participants but their educational level was significantly lower ( $\chi^2 = 19.7$ ,  $p = 0.00$ ). Table 1 shows the patient demographics and disease status of the final sample. No differences were found in age, gender, and educational level between patients coming for CRT or for PRT.

The mean score for the monitoring scale was 16.5 (SD 4.7, range 7–30) and 19.5 (SD 4.5, range 9–30) for the blunting scale. There was no CRT–PRT group difference for cognitive styles (monitoring:  $t = 0.02$ ,  $p = 0.98$ ; blunting:  $t = 0.32$ ,  $p = 0.75$ ). Control for potentially confounding variables also did not reveal any significant cognitive-style differences between male and female patients (monitoring:  $t = 0.44$ ,  $p = 0.66$ ; blunting:  $t = 0.37$ ,  $p = 0.71$ ), nor were cognitive styles related to age (monitoring:  $r = -0.12$ ,  $p = 0.21$ ; blunting:  $r = -0.08$ ,  $p = 0.36$ ) or years of education (monitoring:  $r = -0.05$ ,  $p = 0.58$ ; blunting:  $r = -0.16$ ,  $p = 0.13$ ).

### Monitoring–blunting associations with patients' communicative behaviors

Table 2 illustrates that patients' monitoring style was positively related to the amount of patients' psychosocial information, the number of biomedical questions and the emotional utterances they expressed. Monitoring was also positively related

to active decision making: high monitors used more utterances to express their consent to the treatment proposal and asked more questions about alternative treatments or abstention from treatment.

Subsequent detailed analyses revealed a significant correlation between monitoring and question asking in the PRT group ( $r = 0.31$ ,  $p = 0.01$ ) but not in the CRT group ( $r = 0.19$ ,  $p = 0.09$ ), and a similar pattern was found for the relation between monitoring and expressions of emotions (PRT group:  $r = 0.39$ ,  $p = 0.00$ ; CRT group:  $r = 0.08$ ,  $p = 0.29$ ). Associations between monitoring and decision-making involvement were comparable for the two treatment groups.

Consistent with our expectations, blunting was negatively related to question asking and emotional talk (Table 2). The higher their blunting

score, the fewer (biomedical and psychosocial) questions patients asked and the fewer emotions they expressed in the consultation. Blunting was also negatively related to the amount of patients' biomedical information and their expressions regarding treatment consent.

Detailed analysis revealed a significant correlation between blunting and question asking for the PRT group only (PRT:  $r = -0.29$ ,  $p = 0.02$ ; CRT:  $r = -0.15$ ,  $p = 0.09$ ) and a similar pattern was found for expressions of emotions (PRT:  $r = -0.30$ ,  $p = 0.01$ ; CRT:  $r = 0.08$ ,  $p = 0.24$ ). The correlations between blunting and decision making utterances were about the same in both groups.

### Monitoring–blunting associations with consultation duration

Mean duration of the consultations was 40 min (range 12–80 min, SD 14 min). As expected, overall, the consultation duration was positively related to monitoring ( $r = 0.26$ ,  $p = 0.00$ ) and negatively to blunting ( $r = -0.27$ ,  $p = 0.00$ ).

For the CRT patients consultation duration was similar for high and low monitors (approx. 40 min,  $t = 0.85$ ,  $p = 0.40$ ), but high blunters had significantly shorter consultations than low blunters (36 versus 46 min;  $t = -3.0$ ,  $p = 0.00$ ). Hence, in CRT consultations blunting affected consultation duration but monitoring did not. In the PRT group, high monitors had significantly longer consultations than low monitors (46 versus 37 min;  $t = 2.1$ ,  $p = 0.04$ ) whereas no difference was found between high and low blunters (both approx. 41 min;  $t = -1.1$ ,  $p = 0.28$ ). In PRT consultations it was monitoring that influenced the duration in the expected direction whereas blunting did not.

### Monitoring and blunting associations with patient evaluations of the consultation

Table 3 shows that in the CRT group monitoring and blunting were positively related to the patients' doubts about the treatment decision at T3.

**Table 2.** Spearman correlations between monitoring–blunting and patient communication

	Monitoring <i>n</i> = 116	Blunting <i>n</i> = 116
<i>Information giving</i>		
Biomedical	0.06	-0.20*
Psychosocial	0.17*	-0.03
<i>Question asking</i>		
Biomedical	0.21*	-0.21*
Psychosocial	0.01	-0.20*
<i>Relationship building</i>		
Positive talk	0.05	-0.18*
Negative talk	0.05	-0.09
Emotional talk	0.23*	-0.21*
<i>Decision making</i>		
Consent to treatment	0.27**	-0.19*
Questions refraining or alternative treatments	0.21*	-0.10
<i>Facilitating</i>		
Participatory facilitators	0.11	-0.17*
Procedural talk	0.07	-0.07

\*Sign <0.05, \*\*sign <0.01.

**Table 3.** Spearman correlation coefficients between CRT- and PRT-patients' monitoring and blunting styles and their evaluations of treatment decision and information provision at 6-weeks (T3)

	CRT		PRT	
	Monitoring T3	Blunting T3	Monitoring T3	Blunting T3
<i>Evaluation treatment decision</i>				
Doubts about decision	0.25*	0.29*	0.33**	-0.27*
<i>Satisfaction with information received</i>				
Treatment procedures	-0.22*	0.02	-0.24*	0.33**
Side effects	-0.10	0.07	-0.34**	0.34**
Physical impact treatment	-0.12	0.04	-0.22*	0.26*
Emotional impact treatment	-0.23*	-0.06	-0.11	0.28*

\*Sign <0.05, \*\*sign <0.01.

Monitoring was negatively associated with evaluations of procedural information provision and the emotional impact of the treatment while blunting showed no significant correlations with these items. This implies that in the CRT group monitors and blunters with high scores expressed more doubts about the treatment decision and that high monitors evaluated the received information as less satisfactory. In the PRT group monitoring was positively and blunting negatively related to the patients' doubts about treatment decision. Monitoring also proved negatively related to three of the four information items whereas blunting was positively related to all information items. Thus, the higher their scores for monitoring, the more doubts PRT patients had about the treatment decision at T3 and the less they evaluated the received information as sufficient. Inversely, the higher their scores for blunting, the fewer doubts PRT patients expressed about the treatment decision and the more they evaluated the received information as adequate.

## Discussion and conclusions

### Discussion

Our study was set out to test the relationship between cancer patients' monitoring and blunting coping styles and their communicative behaviors during their initial radiotherapy consultation and, six weeks later, their evaluation of the information they had received during the consultation. Overall, the results show a salient impact of cognitive styles on communicative behaviors as well as on evaluations of the information received. Furthermore, our distinction between patients with a curative and those with a palliative treatment status proved highly informative and promising.

Based on the literature we expected that monitoring would be positively related to the amount of questions because seeking information might reduce the patients' uncertainty about their situation, which is what high monitors need [4,6,7]. Ong and colleagues indeed found that the patients' monitoring style was positively related to their question asking [16]. We found a similar association, i.e. for the palliative but not for the curative group. Apparently, in patients scheduled for palliative treatment a monitoring style enhances their search for reduction of uncertainty.

As high monitors were found to desire more emotional support from their doctors than low monitors do [6,21], we expected a positive relationship between monitoring and emotional talk. Interestingly, whereas Ong and colleagues found no such association [16], we did, but, again, only for the palliative group. Note that Ong and colleagues made no distinction between palliative

and curative care patients [16]. Apparently, high monitors do not simply express more emotions than low monitors do, but they mainly do so when the situation is highly threatening and distressing.

As regards involvement in clinical decision-making, Miller observed that high monitors preferred a more passive role than low monitors, emphasizing that high monitors primarily need reduction of uncertainty, and that they, therefore, would be more inclined to yield control to another, more competent individual (i.e. the doctor) than low monitors would [12]. Yet, consistent with Ong and colleagues [16], we found a positive relationship between monitoring style and the patients' participation in the decision-making process. Possibly, treatment setting may help to explain the disparity in findings. Miller's study took place in a primary-care setting, whereas Ong's and the present investigations were conducted in an oncological setting. In primary care, patient-physician contacts often concern a *first* consultation about a recent complaint. For high monitors, the consequent lack of relevant experiences might have contributed to an initial preference for a more passive decision-making role. Cancer patients, in contrast, have already received ample medical information prior to entering the treatment setting. Their having had time to adjust to the idea of having cancer might now contribute to a propensity to play a more active decision-making role. Additionally, whereas Miller [12] and Ong *et al.* [16] investigated relationships between monitoring and patient *preferences*, in the present study we examined monitoring relative to patients' *actual* communicative behaviors. Apparently, a distinction is warranted between a patient's wish to yield decision-making control to clinicians and patient behavior (e.g. asking questions and participation to decision-making) to lessen uncertainty.

Because blunting entails the tendency to cognitively avoid threat-relevant information [6,7], we assumed that, during the initial consultation, blunting would be inversely related to the amount of patient queries and emotional talk. Our high blunters indeed asked fewer questions and expressed fewer emotions than low blunters did, but once again, solely in the palliative group. Ong *et al.* [16] found no relationship between blunting and patient communicative behaviors, but, as suggested earlier, this may be due to differences in the patient samples. A blunting style, then, does not simply curb a patient's questions and emotional talk, it mainly does so in case of palliative treatment, i.e. in highly threatening circumstances.

Although during the initial radiotherapy consultation the radiation oncologist and patient generally need to discuss many details about the disease, the proposed treatment and the patient's personal circumstances, which is inherently time consuming, our study shows that the length of the

dialogue also depends on the patient's cognitive style. As hypothesized, we found that monitoring prolonged and blunting shortened the consultations. Interestingly, in the curative consultations it was blunting that influenced the duration and not monitoring and this was the reverse in the palliative consultations. The differences in mean duration were considerable, approaching 10 min. This cannot be solely attributed to the differences in the patients' part in communicative behaviors, but it does indicate that their cognitive styles did also affect the radiation oncologist's amount of verbal expressions. On the basis of consultation durations it seems that, when curative therapy was discussed, the radiation oncologists provided 'standard' information and its content seems to have been inhibited by the patient's blunting style but was not enhanced by a monitoring style. In discussing palliative treatment, the radiation oncologists were more likely to convey the 'standard' information even if the patients asked few questions and expressed few emotions. Here, communications were enhanced by a patient's monitoring style (i.e. the radiation oncologists conveyed more than the 'standard' information), but were not inhibited by a patient's blunting style (i.e. the radiation oncologists did not provide less than the 'standard' information).

At the 6-week follow-up assessment our patients had all undergone radiation treatment and were able to compare their experiences with the information received during the initial consultation. Miller [12] reports high monitors with metastatic cancer to be less satisfied with the information received and the psychosocial aspects of their care than low monitors. We accordingly expected monitoring to negatively affect and blunting to positively affect the patients' evaluations. Confirming our expectations, high monitoring was related to more dissatisfaction with the information provided in both patient groups. In a genetic counseling setting, similar results were found by Nordin [35]. Although during the consultation, high monitors gave significantly more often their consent to the treatment proposal, six weeks later they elicited more doubts about the treatment decision, in both groups. The effects of blunting were mainly restricted to the palliative group where high blunters showed less doubts and more satisfaction, indicating that an avoidant information-processing style occurs predominantly in highly threatening situations.

We wish to add some limitations to the above results and interpretations. Firstly, the correlations found were all moderate to small, implying limited percentages of explained variance in communicative behaviors and satisfaction with information. Secondly, with regard to disease status, we assumed that information in palliative consultations is more threatening than information in

curative consultations, which, of course, is a simplification of the patients' reality. Clearly, the message that no curative treatment can be offered will be a very threatening one for most of the patients, but some patients in the palliative group had been aware of their unpropitious prognosis for quite some time and they may thus not have been overly perturbed by their radiation oncologist's observations. Conversely, some patients in the curative group may have been extremely relieved upon hearing that a cure seemed possible whereas for some others having been diagnosed with cancer had remained extremely threatening in itself.

Thirdly, we argued that the higher levels of questions found for high monitors who are receiving palliative care reflect a desire to reduce uncertainty. However, while the palliative care situation is clearly very distressing, one could argue that these patients actually have lower levels of uncertainty because they know that the treatment will certainly not cure their cancer. On the other hand, the certainty to die from this cancer will raise several other, more existential, uncertainties, like: 'How will I die?', 'Will I have much pain?', 'How long will it take?', etc. Moreover, it might be possible that patients are not completely convinced that they will not be cured, thereby making the situation uncertain in their own minds. Fourthly, although monitoring and blunting had affected the patients' evaluations of the received information six weeks after their initial consultation, we did not assess what this meant for their well being. We can, therefore, not conclude that for palliatively treated patients, for instance, blunting is favorable and monitoring unfavorable. We do not know whether the perception that the information was insufficient increased the patients' distress or whether it enhanced their coping capacity. Although confrontation with threatening information might be distressing, it might at the same time stimulate emotional processing [36].

Lastly, our measure of patient evaluations of treatment decision ('Looking at things after having undergone radiotherapy, I am in doubt about the treatment decision') might have been ambiguous in whether it is measuring patients' doubts about the decision process or patients' satisfaction with decision outcome.

## Conclusion

We found cancer patients' cognitive styles to influence their communicative behaviors during the initial dialogue with their radiation oncologist. The stronger a patient's monitoring style, the more questions, emotions, and decision-making issues he or she expressed and the longer the consultation and more explicit the radiation oncologist's explanations became. Six weeks after the initial

consultation the high monitors nevertheless proved more in doubt about the treatment decision and more dissatisfied with the information received than the low monitors.

The more pronounced a patient's blunting style, the fewer his or her questions, emotional talk, and decision-making issues and the shorter the consultation and radiation oncologist's clarifications were. But, although blunting curtailed the exchange of information, at six weeks blunting proved related to fewer treatment-decision misgivings and to a higher contentment with the initial information.

Remarkably, all significant correlations between cognitive styles on the one hand and communication patterns and consultation evaluations on the other hand were due to the palliative-treatment group. For consultation duration there was an interesting interaction between coping style and disease status: monitoring increased the duration of palliative consultations whereas blunting tended to decrease the duration of curative consultations. Obviously, the oncologists adapted their communication styles to the needs of their patients when necessary and feasible.

Our findings regarding the monitoring coping style largely support the existing theory and earlier

results and our findings regarding blunting fully corroborate current theoretical notions about the concept. Moreover, by their power, the results for blunting have expanded our understanding of the impact of this cognitive style. Apparently, it requires the threat of a palliative treatment setting to activate and boost a patient's blunting style.

Our results have several implications for the clinical practice. When dealing with cancer patients, health professionals should be sensitive to individual differences in information needs. It may be opportune to explicitly gauge patients in advance on their preferences: 'Do you generally think *'I want to know every detail'* or do you tend to say *'I'll just see what is going to happen'*? The answer might be a first indication of the patient's cognitive style. Additionally, health professionals should bear in mind that providing extensive information is no guarantee for patient satisfaction.

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### Appendix A. RIAS clusters, subclusters, categories and examples

Cluster	Subclusters and categories	Examples
<i>Functional grouping</i>		
1. Information giving	Biomedical general medical information diagnosis  prognosis; life expectancy, chance of cure  Psychosocial psychosocial information	I've lost 6 kilos in 2 months. The oncologist said I suffer from Hodgkin's disease. They've told me that no treatment can drive this bloody demon away; it'll only stop growing for a while.  My family is really supportive.
2. Question asking	Biomedical general medical questions diagnosis prognosis  Psychosocial Psychosocial questions	Can I continue my heart medications? This tumor, can't it just be an infection? How long will it take for the cancer to come back?  Can the stress about the cancer cause my chest pains?
3. Relationship building	Positive talk social talk, jokes  agreements Negative talk	I've brought you nice weather today, haven't I? Hmm/I see/Yeah. You've kept me waiting for half an hour!

	Emotional talk concern	I really don't know what to do if this treatment fails.
4. Decision making	Information giving consent to treatment other treatment options  refraining from treatment	Okay, that's clear. Let's do it. The oncologist suggested chemotherapy, but I don't want it! Doing nothing against my cancer is not an option for me.
	Question asking opinion about treatment  other treatment options refraining from treatment	Doctor, would you recommend this treatment to someone in my situation? Would an operation be an alternative? What'll happen if I don't take this treatment?
5. Facilitating	Participatory facilitators Paraphrase/check  Procedural talk agenda setting & orientations  other (instructions & procedural issues)	Okay, you said I'll need to come in 8 times and that'll be all?  I really still need some more explanation about this treatment. Where can I get a new travel-expense form?

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