Cue-responding behaviours of oncology nurses in video-simulated interviews

RUUD UITTERHOEVE[1], JACQUELINE DE LEEUW[2], JOZIEN BENSING[3], CATHY HEAVEN[4], GEORGE BORM[5], PIETER DEMULDER[6] & THEO VAN ACHTERBERG[7]

[1] Ruud Uitterhoeve MScN RN Researcher Centre for Quality of Care Research, Nursing Science, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands
[2] Jacqueline de Leeuw MScN RN Researcher Neurosensoric Cluster, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands
[3] Jozien Bensing PhD Professor of Clinical and Health Psychology Department of Health Psychology, Utrecht University and Netherlands Institute for Health Services Research, Utrecht, The Netherlands
[4] Cathy Heaven PhD RN Researcher and Communication Skills Tutor Maguire Communication Skills Training Unit, Christie Hospital, Manchester, UK
[5] George Borm PhD Associate Professor in Statistics Department of Epidemiology and Biostatistics, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands
[6] Pieter deMulder (deceased) MD PhD Professor Medical Oncology Department of Medical Oncology, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands
[7] Theo van Achterberg PhD RN Professor Nursing Science Centre for Quality of Care Research, Nursing Science, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands

ABSTRACT

Aim. This paper is a report of a study to describe nurse–patient interactions, i.e. nurses' cue-responding behaviour in encounters with actors playing the role of patients.

Background. Patients with cancer seldom express their concerns directly but express cues instead. Few studies empirically investigated nurses' cue-responding behaviour and the subsequent influence of disclosure of cues and concerns.

Methods. In this descriptive observational study, conducted from April to June 2004, five oncology nurses interviewed an actor playing the role of a patient with cancer. Each nurse performed seven different interviews ($n = 35$); these were videotaped and subsequently rated for cue-responding using the Medical Interview Aural Rating Scale. Mixed model analysis was used to investigate the relation between cues and cue-responding.

Findings. Half of the patients' cues were responded to with distancing behaviours. The other half of the cues were either explored (33%) or acknowledged (17%). In 16% of these responses, nurses used open directive questions. One out of four open directive questions were used as a distancing response, suggesting that open directive questions are not used to explore or acknowledge cues of patients. Cue-responding influenced subsequent expression of concerns and emotions, i.e. disclosure of a concern is two times higher after exploration or acknowledging of a preceding cue than after a distancing response.

Conclusion. Cue-responding is a valuable concept which can contribute to our understanding of optimal ways of communicating. Cue-responding behaviour facilitates the disclosure of worries and concerns of patients. Further research is needed to assess the clinical relevancy of cue-responding.

INTRODUCTION

Patients seldom express their concerns and emotions directly and spontaneously, but instead give indirect cues that something is worrying them (Suchman et al. 1997, Butow et al. 2002). A core skill for nurses is therefore to recognize patients' cues that are clinically relevant, but not directly expressed (Eide et al. 2004). Patients' cues are typically embedded in dialogues that take place throughout the nursing hours of a day, i.e. during bedside care, on admission or at discharge interviews and even during 'social talk'. Nurses, therefore, have many opportunities to pick up cues from patients, which may lead to the recognition of those needing emotional support. Distancing from cues, on the other hand, may result in leaving patients with unrecognized emotional sorrow or psychological problems, and may prevent them from receiving the care they require. It is frequently observed that nurses overlook patients' social and emotional needs, focusing instead on physical care (Parle et al. 1996, Heaven & Maguire 1997, Hill et al. 2003, Farrell et al. 2005). It has been observed that only 20–55% of existing patient concerns are adequately identified, which are predominantly related to physical symptoms (Heaven & Maguire 1997, Hill *et al.* 2003, Farrell *et al.* 2005, Heaven et al. 2006). Studies have shown that nurses often use blocking behaviour (ranging from 55% to 75% of occasions), thus avoiding subjects that are emotionally charged, rather than encouraging patients to express their concerns (Maguire *et al.* 1996). In a recent descriptive study (Uitterhoeve *et al.* 2003), which aimed to identify problem areas in care of patients receiving chemotherapy, professional caregivers (medical oncologists and oncology nurses) and patients alike reported that affective communication, in particular, is in need of improvement. Other studies suggest that patient outcomes, such as satisfaction with care and quality of life, are most affected by the emotional dimension of communication (Bensing 1991, Ong *et al.* 2000). Improving the emotional dimension of nurse–patient communication in cancer care is thus clearly a relevant area for research.

BACKGROUND

Our study was developed to investigate a specific area of the emotional dimension of provider–patient communication: responding to cues about worries and concerns. A review of the literature (Caris-Verhallen et al. 2004) identified two advanced observation instruments that are capable of methodological identification and coding of cues expressed by patients and provider responses. Both instruments are specially developed for the oncological setting and are suitable for research into patient–nurse communication: the Cancer Research Campaign (CRC) Utterance by Utterance rating scale (Maguire et al. 1996,

Booth *et al.* 1999) and the Medical Interview Aural Rating Scale (MIARS) (Heaven & Green 2001). The CRC rating scale was developed from a number of theoretical insights, including Bandura's social cognitive learning theory (Bandura 1986, Parle *et al.* 1997), Hobson's conversational model of psychotherapy (Goldberg *et al.* 1984, Maguire *et al.* 1984) and Davenport *et al.*'s (1987) and Goldberg *et al.*'s (1993) work on cues. The MIARS grew out of the Utterance by Utterance rating scale as a shorter and less complex rating system designed to assess nursing communication skills in encounters with patients with cancer.

In the MIARS (Heaven & Green 2001), the basic unit of observation is each turn of speech, for both nurse and patient. Patients' turns can be coded as cues and concerns. In 2005, the *European Association of Communication in Health Care* (EACH) reached consensus on the definitions of 'cue' and 'concern'. A cue has been defined as:

a hint, which might be an expression or signal, mostly verbal but also non-verbal, which indirectly indicates an issue of presumed importance for the patient and implies an emotion, worry or uncertainty that the patient would like to bring up, or a move to another topic, that should demand an exploration from the provider.

A concern is described as:

a verbal expression, which explicitly indicates an issue of importance for the patient. (Piccolo *et al.* 2005)

The MIARS distinguishes three levels of patients' cues, depending on the extent to which feelings are disclosed. A phrase from a patient that hints at a worry or concern is coded as a level 1 cue (Heaven & Green 2001). An expression that explicitly mentions worry or concern is coded as a level 2 cue, and a clear expression of emotion (e.g. anger or crying) is coded as level 3 (Heaven & Green 2001). Each turn of a nurse can be coded according to its function and form. Function includes whether the cue is explored (by eliciting, clarification or an educated guess), acknowledged but not explored (by an empathic statement, reflection or checking) or distanced from (for instance, by inappropriate reassurance, premature advice or switching focus) (Heaven & Green 2001). Form includes morphological aspects of the turn, i.e. taking into account whether the turn contains a directive open question, a screening question, a negotiation question or summarizing. A directive open question, as opposed to a closed question that can be answered with a simple 'yes' or 'no', requires a more elaborative response (You say you are worrying - in what way?). Screening questions ask if there are concerns, worries, problems, thoughts or issues of presumed importance, which are not yet discussed. Negotiation questions refer to asking consent from a patient about the process of the discussion (Do you agree if we close this part of the discussion and continue to talk a bit more about how you are coping with the side-effects of the treatment?). Summarizing refers to a response from a nurse that summarizes information, concerns or feelings which are expressed in preceding turns of the current discussion, with the intention of giving feedback to the patient (Heaven & Green 2001).

Although the potential influence of cue-responding on the quality of nurse–patient communication has been acknowledged, relatively little is known about how nurses' respond to emotional cues from patients or the subsequent influence on further expression of cues and concerns. Therefore, in this study, we attempt to describe cue-responding behaviour in oncology nursing using the MIARS as the most appropriate instrument for this purpose.

THE STUDY

Aim

The aim of this study was to describe nurse–patient interaction, i.e. nurses' cue-responding behaviour in encounters with actors playing the role of patients.

Design

A descriptive observational study was conducted, using videotaped discussions with an actor playing the role of patients with cancer. The data were collected from April to June 2004.

Participants

Registered Nurses from a medical oncology inpatient clinic of a large teaching hospital in the Netherlands were asked to participate in the study. Seventeen of 35 nurses were eligible for study participation, i.e. were employed as a Registered Oncology Nurse (a legal qualification in the Netherlands) with a 0·6–1·0 job assignment. Four nurses declined to participate because videotaping of their performance distracted them from their work. Of the remaining 13 nurses, five were randomly selected for actual participation. These five nurses were female, between 40 and 48 years of age, with a median of 15 years (range 5–18 years) experience in oncology nursing.

Data collection

Instrument

In this study, we used 'turns' as the unit of observation. A turn is everything a current speaker says before the next speaker takes over (Sandvik *et al.* 2002). Two reviewers (RU and JdL) independently coded the videotapes. We classified patients' turns of speech using the *Cues* class of the MIARS, showing whether the turn was neutral (level 0), or whether it contained a cue. When a cue was present, we classified it into one of three levels, depending on emotional intensity (column 1, Table 1). We coded nurses' turns of speech in different ways: first, in terms of the function as a response to the patient's turn of speech and, secondly, for its form. The *Function class* refers to the degree of adequacy of the cue-response, and can either facilitate or inhibit further disclosure of emotion (see column 1, Table 1). The *Function* class consists of the following elements: cue acknowledgement and cue exploration, composing adequate cue-responding behaviour and distancing from cues, which is distinguished as inadequate cue-responding behaviour. The *Form* class measures behaviours for which clear evidence of impact on patient disclosure has been established: i.e. use of open directive questions, screening, summarizing and negotiation (Goldberg *et al.* 1993, Maguire *et al.* 1996, Liénard *et al.* 2006).

[TABLE 1]

To obtain a complicated data set in an accessible way and to ease coding procedures, we incorporated the MIARS classes into Observer Video-Pro software (Noldus *et al.* 2000). This software enables direct coding while observing the videotaped nurse and patient behaviour and without transcribing the discussions. The validity of this software when used with the MIARS has been demonstrated (Fletcher *et al.* 2004). To ensure consistent coding between the two raters, both received training in the use of Observer Video-Pro software (Noldus *et al.* 2000). This one-day training consisted of an introduction to the configuration of the MIARS, becoming familiar with the description of the relevant patient and nurse behavioural classes and elements, and coding rules and process using the Observer data entry module. The reviewers practised coding until questions and uncertainties using the system were resolved.

Inter-rater reliability data on the behavioural elements of cue-acknowledgement, cue-exploration and cue-distancing has been published by Heaven and Green (2001), while unpublished data are available in Schofield (2003) and Fletcher (2005). Heaven's work shows intra-class correlation coefficients (ICCs) of reliability for cue-acknowledgements of r = 0·71 (95% CI 0·60–0·82), and r = 0·77 (95% CI 0·67–0·86) and r = 0·71 (95% CI 0·59–0·82) for cue-exploration and distancing, respectively. These studies all took place in a single centre and it is therefore important to confirm the reliability of the MIARS in studies

conducted at other centres. In the present study, inter-rater reliability coefficients (κ) for the coding of the cues and functional class were 0·74 (95% CI: 0·70–0·78) and 0·76 (95% CI: 0·71–0·80), respectively. A coefficient (κ) between 0·60 and 0·80 is accepted as good agreement (Altman 1991).

The level of agreement between both raters regarding coding of the separate elements of the *cues, function and form* class, where events of specific behaviours can only be coded as present, was estimated as the probability that the second rater would agree with the first rater. This method is independent of the number of observations in which both observers would code a specific behaviour as not present (Markus *et al.* 1996, Bland 2006). These reliability data are displayed in the 'Degree of agreement' column of Table 1. In relation to the elements of the *cues* class, the highest probability of 0·80 was found for level 3, and the lowest probability of 0·50 for level 2. For the elements of the *functional* class (i.e. exploration, acknowledging and distancing), probabilities ranged from 0·78 for distancing to 0·56 for acknowledging ('Degree of agreement' column, Table 1). At the level of actual nurses' cue-responding behaviour the degree of agreement of single elements of the different behavioural classes is notably lower than the agreement value of the classes themselves ('Degree of agreement' column, Table 1). The elements 'reflection', 'passing the buck' and 'blocking' clearly stand out, with levels of 0·36, 0·40 and 0·26, respectively. The ICC for the overall cue-responsiveness score, using the two-way mixed effects model of consistency and single measure statistic, was 0·78 (95% CI: 0·59–0·88). According to Fleiss (1986), ICC values above 0·75 represent excellent reliability.

Procedure

During the data collection, nurses' interviews with an actor playing the role of patients were videotaped. We used a single professional actor, experienced in simulating interviews, to play the role of a patient with cancer. Elaborate, standardized scripts were used to ensure that the actor enacted the same patient role during each nurse encounter. The content of the scripts was based on cases that experienced oncology nurses ($N = 10$) brought to a meeting to discuss distinguishing characteristics of nurse–patient conversation in oncology care. At the end of this meeting, different scripts were composed relating to a middle-aged female patient and subsequently checked for realistic content. These scripts were studied by the professional actor and subsequently discussed and practised until she was able to perform the scripts consistently. This procedure was used to reduce patient variation and improve comparability of the nurses' performance.

For each participating nurse, seven conversations were scheduled. Each nurse performed the same sequence of seven conversations, played by the same actor according to the different scripts. Prior to each interview, nurses were given a short description of the patient's history and given an opportunity to ask questions to clarify the description. Subsequently, they were asked to discuss the patient's present concerns for approximately 10 minutes. They were informed that, after 10 minutes, videotaping would terminate. The video-recording was performed with no researcher present and the discussion took place in a patient room at an oncology outpatient clinic. This process produced 35 videotaped discussions of approximately equal length.

Ethical considerations

As no real patients were involved in this study, approval from an ethics committee was not required. However, we did inform the ethics committee about the study and received a letter stating that they had no objection to the study. The study was approved by the administration of the division of internal medicine and by the chief physician and head nurse of the ward involved. Participation was voluntary and nurses' oral and written consent to participate was obtained. The professional actor who played the part of the patient was paid for her contribution. Nurses were informed that the patient was an actress.

Data analysis

We performed sequential analysis to investigate how nurses responded to patient cues and how the patient reacted to nurses' responses. Sequential analyses traced sequences of specific patient and nurse behaviour and resulted in a matrix, in which each cell contained the frequency with which a specific type of behaviour followed another. Every interview contained several cues, and every nurse had an opportunity to respond to several of these cues. As a result, there were two levels of variability. At the highest level, there were differences between the nurses and differences between the interviews (variation between nurses and interviews). At the lowest level, there were differences between the cues and responses per nurse and per interview (variation within nurses and interviews). These two levels of variability made it necessary to analyse the relationship between the two variables using a two-level (mixed) model. Such a model requires inclusion of the highest levels as random factors, while other variables are included as fixed factors. In our analysis, we therefore included the random factors of nurse and interview. For analysis of the responses, the dependent variable was 'response' (adequate vs. inadequate) and the fixed factor was 'preceding cue' (levels 2 and 3 vs. level 1). To estimate the ratio between the responses, a multiplicative link function (i.e. a log link function) was used, with Bernouilly distribution for the dependent variable (Greenland 2004, Zou 2004). A similar approach was used for analysis of the patient's reaction to the subsequent nurse response. In this case, the dependent variable was 'cue level' (2 and 3 vs. 1) and the fixed, independent variable was 'previous response' (adequate vs. inadequate).

RESULTS

Nurses' behaviour

Description of nurses' cue-responding behaviour

Of the scheduled 35 interviews, three interviews were cancelled because nurses were not available to perform the interview. One videotaped interview was inaudible because of equipment failure and therefore excluded from our analysis. The two reviewers (RU and JdL) rated the remaining 31 interviews.

Each interview contained a median number of 20 cues (minimum nine cues to maximum 30 cues). The 'Frequency' column of Table 1 shows the distribution of behavioural elements of the MIARS across patients and nurses. One-third of patient turns involved neutral expressions by the patient (level 0). Approximately one-third (39%) of patient turns were expressions that signalled worry or concern (level 1), and another third of the turns mentioned worry or concern (14% cue level 2) or clearly expressed unpleasant emotion (15% cue level 3). Thus, in the 31 interviews, 647 cues were given.

The elements of the *Function* class, i.e. adequate (exploring and acknowledging) and inadequate responses (distancing), were evenly distributed. About 32% of the 647 cues were explored, 17% were acknowledged and 50% were responded to with distancing behaviours. The most prevalent inadequate response to patient cues was switching the focus away from cues: 53% of the 321 inadequate responses were classified as such. The extracts shown in Figure 1 illustrate adequate and inadequate responses of nurses to patients' cues.

We also coded nurses' turns in the *Form* class of the MIARS (see Table 1). A minority of the turns could be coded with elements of this class: namely, 16% of nurse turns were coded as open directive questions, 2% as screening, 5% as negotiating, and <1% as summarizing. A vast majority (77%) of the turns was coded as miscellaneous. Turns that were coded as 'open directive questions' were predominantly (52%) used in combination with 'exploring' or 'acknowledging'. Open directive questions were also used in combination with 'distancing' in 21% of cases.

Sequences of nurse–patient behaviour

Mixed model analysis shows that the proportion of adequate responses to cues with level 1 is equal to the proportion of adequate responses to cues with levels 2 and 3, with a ratio of 1·02 (95% CI: 0·82–1·24). Table 2 shows that half the cues with level 1 and levels 2 and 3 are responded to adequately. Table 3 shows the number of sequences of the nurse responding to a preceding cue and the reaction of the patient. The chances that patients clearly express an unpleasant emotion, raise a worry or concern (cue levels 2 and 3) is about two times higher after an adequate response than after an inadequate response, with a ratio of 1·92 (95% CI: 1·40–2·64).

[FIGURE 1]

[TABLE 2]

DISCUSSION

Cue-responding is an exciting new concept in communication research. The concept concurs with the sequential nature of communication. Analysis of sequences of patients' cue emissions and providers' responses provides empirically based insight in how patients and providers influence one another. Our current study shows that patients are clearly responsive to adequate responses given by nurses to their cues, and suggests that there is a case for teaching nurses adequate cue-responding skills.

[TABLE 3]

A strength of this current study lies in the use of an actor playing the role of the patient, as this reduces patient variations and improves comparability for the nurses' performance. At the same time, the use of an actor may alter nurses' behaviour towards displaying 'ideal' behaviour. We have no indication that this phenomenon actually occurred, especially as our findings reflect those of Heaven *et al.* (2006), which were based on real encounters. The sample of nurses was randomly selected but small, which may impede generalization of the findings.

One-third of the patients' cues in this study were explored, one-sixth acknowledged, while in half, the nurses, in one way or another, distanced themselves. Only recently, as sequential analysis has become feasible, has cue-responding gained importance as a relevant outcome measure in patient–provider communication research (Bensing *et al.* 2003b). There are, therefore, few studies with which to compare our findings. The two studies (Wilkinson 1991, Heaven *et al.* 2006) that investigated cue-responding in patient–nurse communication showed similar results regarding the use of distancing behaviours. This reveals that there is room for improvement. Similar to the study by Heaven *et al.* (2006), we also found that 50% of the cues were responded to adequately. Yet the percentage of cues that were adequately responded to by either exploration or acknowledging were reversed in comparison with Heaven *et al.* (2006). They found that 29% of the cues were acknowledged and 12% of the cues were explored. The most used distancing behaviour in our study was 'switching the focus' away from the cue. This means that, although attention is paid to something the patient said, it is not directed to the part with the emotional tie, i.e. not to the part that contains the issue of presumed importance for the patient. Another important finding is that nearly one quarter of the 'open directive questions' in this study were used as inadequate responses to patients' cues, showing that open directive questions are not always appropriate. These findings reflect those of Fletcher (2005), who showed that open directive questions used as a response to cues were three-and-a-half times more likely to elicit further disclosure than those not related to a patient cue. Consequently, communication training should not focus on teaching the use of 'open directive

questions'*per se*, but should consider matching the patient's preceding turn as an important directive. The limited use of negotiation, screening questions and summarizing was in line with the findings of Heaven *et al.* (2006).

Sequential analysis of the data does not provide evidence about the influence of the emotional level of cues on the subsequent response of the nurse. This finding is inconsistent with what is generally assumed (Wilkinson 1991, Heaven & Maguire 1996, Fallowfield & Jenkins 1999, Kruijver *et al.* 2000, Maguire & Pitceathly 2002, 2003, Bensing *et al.* 2003a) and empirically supported by others (Booth *et al.* 1996, Razavi *et al.* 2000), i.e. that higher emotional cue levels are related to the use of distancing behaviours. However, our finding agree with those of De Valck *et al.* (2001), who found no correlation between level of expressed emotion and the communicative reaction of the provider.

A key finding of our study is that cue-responding influences the expression of concerns and emotions. The chance of an expression of cue levels 2 and 3, after an adequate response, is one-and-a-half to two-and-a-half times higher than after an inadequate response from the nurse. This outcome has clinical value because it shows that patients are clearly responsive to adequate responses to their cues from nurses. This confirms that there is a case for teaching nurses adequate cue-responding.

Our study raises several questions that could be examined in future research. Although this is an observational study, the findings suggest the relevancy of training nurses in the use of cue-responding behaviour. Examining whether the use of open directive questions, screening, negotiation and summarizing to explore or acknowledge preceding cues could be improved by training would be of great value. This is especially the case, as our study showed that these behaviours are seldom used, although it is known that they encourage disclosure of concerns. For instance, a recent study (Liénard *et al.* 2006) showed that screening questions like 'What else?' or 'Are there any other concerns that you want to discuss?' improved further disclosure of concerns and reduced patients' anxiety. As this study does not address the clinical relevancy of provider cue-responding, we also recommend that future research should study the value patients assign to the cue-responding behaviour of nurses, and which improvements in cue-responding are perceived as meaningful by patients. Another interesting topic for future research would be whether nurse–patient communication differs between European countries, and between European and non-European countries, in terms of adequate and inadequate responses.

The current study identifies cue-responding as an important skill for nurses in cancer care. We identify the teaching of cue-responding skills as an important aim of communication skills training and propose cue-responding as an appropriate skill in and of itself. Even in the context of *information provision* or *patient education*, cue-responding skills are necessary, especially as cue-responding provides an opportunity to acknowledge emotional distress of patients that may hinder their understanding of information being given. Because of limited resources in current health care, and the high cost of communication training, as a first stage, we recommend careful evaluation of the effectiveness of such a training programme. We emphasize that such a training programme should address the problem of transferring learned behaviour to practice by incorporating transfer strategies into the training programme (Baldwin & Ford 1988, Booth *et al.* 1996, Salas & Cannon-Bowers 2001, Butler *et al.* 2005, Heaven *et al.* 2006, Saks & Belcourt 2006).

CONCLUSION

Sequential analysis of patients' cues and nurses' responses allows inferences to be made about how nurses and patients influence one another. Sequential analysis contributes to our understanding of optimal ways of communicating with patients with cancer. This study showed that adequate cue-responding behaviour from nurses facilitates the disclosure of worries and concerns by patients. This method for analysing nurse–patient communication

has satisfactory reliability indices and would support the future use of the MIARS in research on nurse–patient communication in cancer care.

WHAT IS ALREADY KNOWN ABOUT THIS TOPIC

Patients seldom express their concerns directly, but instead express cues that something is worrying them.

A considerable part of patients' cues is not acknowledged or explored, leaving emotional sorrow or psychological problems unrecognized.

WHAT THIS PAPER ADDS

Acknowledging or exploring patients' cues promotes disclosure of their worries and concerns.

Use of open directive questions is not in itself an adequate response to patients' cues.

Training in cue-responding skills is conceptually linked to the expression of concerns and emotional sorrow of patients.

AUTHOR CONTRIBUTIONS

RU, JB, PdM, TvA were responsible for the study conception and design and RU, JB and TvA were responsible for the drafting of the manuscript. RU and JdL performed the data collection and RU and GB performed the data analysis. JB and CH made critical revisions to the paper. JB and GB provided statistical expertise. TvA supervised the study.

TABLES EN FIGURE

Table 1 Patient and nurse behavioural elements of the Medical Interview Aural Rating Scale (MIARS)

Behavioural elements of the MIARS	Frequencies n (%)	Degree of agreement
Patients' cue-emission behaviour:		
Cues[†]		
Level 0 (neutral expression)	311 (33)	0·77
Level 1 (expression that hints at worry or concern)	370 (39)	0·72
Level 2 (expression that mentions worry or concern)	132 (14)	0·50
Level 3 (clear expression of unpleasant emotion)	145 (15)	0·80
Nurses' cue-responding behaviour[‡]:		
Function class[†]:		
Adequate response – exploration and acknowledging:	319 (50)	
Exploration:	209 (33)	0·73
Eliciting	62	0·62
Clarification	73	0·61
Educated guess	74	0·57
Acknowledging:	110 (17)	0·56
Empathy	37	0·55
Reflection	24	0·36
Checking	47	0·48
Inadequate response – distancing:	321 (50)	0·78
Factual clarification	34	0·44
Inappropriate reassurance	25	0·67
Premature advice	38	0·55
Passing the buck	15	0·40
Switching focus	171	0·64
Blocking	37	0·26
Form class[§]		
Directive question	154 (16)	0·79
Screening	19 (2)	0·71
Negotiating	47 (5)	0·81
Summarizing	8 (<1)	0·78

[†]Elements are mutually exclusive.

[‡]Classes are not mutually exclusive.

[§]Elements are not mutually exclusive.

			MIARS coding
	Inadequate responses to cues of patients:		
P	…and treatment - I just don't know. On the one hand I think, 'Yes, I go along with treatment' but, on the other hand, my children will see my suffering, the hair loss, the sickness - and I am afraid they will take a distance.		Cue-level 2
N	You have two girls, how old are they?		Distancing
P	I feel sad, so sad, so angry and sad. I am angry at everyone who can walk out of here.		Cue-level 2
N	You say that you're sad….I just saw your family leaving. How was their visit?		Distancing, open directive question
P	I am afraid, terribly afraid of dying, letting go (*crying*) . Where am I….? Uuh…it is a black whole, and then I think…		Cue-level 3
N	Did you talk about this with a priest?		Distancing
P	I feel down, worrying what is hanging over my head and, yes, I have no appetite either, and stabs of pain…		Cue-level 2
N	And, the pain… Is it under control?		Distancing
	Adequate responses to cues of patients:		
P	I don't have a choice really. When I don't do it (*treatment*), then I surely …and then I think, 'What am I inflicting on them?' (*the patient's children*)		Cue-level 1
N	So actually, you are worried about how this affects your children?		Exploring
P	I just can't handle it this way, on my own, and it makes me afraid that I'll lose control.		Cue-level 1
N	Listening to you, I have the idea that you feel that you're on your own and that you feel that you need support to cope better with what's going on.		Acknowledging
P	I can't stop crying. I'm in panic all the time.		Cue-level 2
N	What exactly brings about this feeling of panic?		Exploring, open directive question

Figure 1 Nurses' responses to patients' cues coded with the Medical Interview Aural Rating Scale (MIARS).

Table 2 Number of nurses' responses to the different levels of patients' cues

	No response	Adequate response (exploration and acknowledging)	Inadequate response (distancing)
Level 0	319 (100)	–	–
Level 1	–	191 (50)	191 (50)
Level 2	–	69 (51)	67 (49)
Level 3	–	76 (52)	70 (48)

Figures in parentheses are percentages.

Table 3 Number of different cue levels after adequate and inadequate responses of nurses

	Cue level 0	Cue level 1	Cue level 2	Cue level 3
No response	192 (56)	115 (33)	22 (6)	15 (4)
Adequate response (exploration and acknowledging)	28 (9)	134 (42)	79 (25)	76 (24)
Inadequate response (distancing)	108 (33)	136 (42)	29 (9)	54 (17)

Figures in parentheses are percentages.

REFERENCES

• Altman D.G. (1991) Practical Statistics for Medical Research. Chapman & Hall, London

• Baldwin T.T. & Ford J.K. (1988) Transfer of training: a review and directions for future research. Personnel Psychology 41(1), 63–105.

• Bandura A. (1986) Social Foundations of Thought and Action: A Social Cognitive Theory. Prentice-Hall,

• Englewood Cliffs, NJ

• Bensing J. (1991) Doctor–patient communication and the quality of care. Social Science & Medicine 32(11), 1301–1310.

• Bensing J., van Dulmen S. & Tates K. (2003a) Communication in context: new directions in communication research. Patient Education and Counseling 50(1), 27–32.

• Bensing J., Zandbelt L. & Zimmermann C. (2003b) Introduction. Sequence analysis of patient–provider interaction. Epidemiologia E Psichiatria Sociale 12(2), 78–80.

• Bland J.M. (2006) How Do I Measure Observer Agreement When Only Positive Observations are Recorded? Retrieved from http://www.users.york.ac.uk/~mb55/meas/nonos.htm on 10 October 2006.

• Booth K., Maguire P.M., Butterworth T. & Hillier V.F. (1996) Perceived professional support and the use of blocking behaviours by hospice nurses. Journal of Advanced Nursing 24(3), 522–527.

• Booth K., Maguire P. & Hillier V.F. (1999) Measurement of communication skills in cancer care: myth or reality? Journal of Advanced Nursing 30(5), 1073–1079.

• Butler L., Degner L., Baile W. & Landry M. (2005) Developing communication competency in the context of cancer: a critical interpretive analysis of provider training programs. Psycho Oncology 14(10), 861–872.

• Butow P.N., Brown R.F., Cogar S., Tattersall M.H.N. & Dunn S.M. (2002) Oncologists' reactions to cancer patients' verbal cues. Psycho Oncology 11(1), 47–58.

• Caris-Verhallen W., Timmermans L. & van Dulmen S. (2004) Observation of nurse–patient interaction in oncology: review of assessment instruments. Patient Education and Counseling 54(3), 307–320.

• Davenport S., Goldberg D. & Millar T. (1987) How psychiatric disorders are missed during medical consultations. Lancet 2(8556), 439–441.

• De Valck C., Bensing J., Bruynooghe R.M., Hulsman R. & Kerssens J.J. (2001) Cue responding in a simulated bad news situation: exploring a stress hypothesis. Journal of Health Psychology 6(5), 585–596.

• Eide H., Quera V., Graugaard P. & Finset A. (2004) Physician-patient dialogue surrounding patients' expression of concern: applying sequence analysis to RIAS. Social Science & Medicine 59(1), 145–155.
• Fallowfield L. & Jenkins V. (1999) Effective communication skills are the key to good cancer care. European Journal of Cancer 35(11), 1592–1597.
• Farrell C., Heaven C., Beaver K. & Maguire P. (2005) Identifying the concerns of women undergoing chemotherapy. Patient Education and Counseling 56(1), 72–77.
• Fleiss J.L. (1986) The Design and Analysis of Clinical Experiments. John Wiley & Sons, New York
, pp. 1–32.
• Fletcher I. (2005) Patterns of verbal interaction between health professionals and cancer patients. PhD thesis. University of Manchester,
Manchester
• Fletcher I., Heaven C., Maguire P. & Dunn G. (2004) A comparison of traditional vs. computerised methods of rating communication skills. Elsevier, International Conference on Communication in Healthcare 14-17 September 2004, Bruges, Belgium
• Goldberg D.P., Hobson R.F., Maguire G.P., Margison F.R., O'Dowd T., Osborn M. & Moss S. (1984) The clarification and assessment of a method of psychotherapy. The British Journal of Psychiatry 144, 567–575.
• Goldberg D.P., Jenkins L., Millar T. & Faragher E.B. (1993) The ability of trainee general practitioners to identify psychological distress among their patients. Psychological Medicine 23(1), 185–193.
• Greenland S. (2004) Model-based estimation of relative risks and other epidemiologic measures in studies of common outcomes and in case–control studies. American Journal of Epidemiology 160(4), 301–305.
• Heaven C.M. & Green C. (2001) Medical Interview Aural Rating Scale. Psychological Medicine Group, Christie Hospital, Stanley House,
Manchester
.•Heaven C.M. & Maguire P. (1996) Training hospice nurses to elicit patient concerns. Journal of Advanced Nursing 23(2), 280–286.
• Heaven C.M. & Maguire P. (1997) Disclosure of concerns by hospice patients and their identification by nurses. Palliative Medicine 11(4), 283–290.
• Heaven C., Clegg J. & Maguire P. (2006) Transfer of communication skills training from workshop to workplace: the impact of clinical supervision. Patient Education and Counseling 60(3), 313–325.
• Hill K.M., Amir Z., Muers M.F., Connolly C.K. & Round C.E. (2003) Do newly diagnosed lung cancer patients feel their concerns are being met? European Journal of Cancer Care 12(1), 35–45.
• Kruijver I.P., Kerkstra A., Bensing J.M. & van de Wiel H.B. (2000) Nurse–patient communication in cancer care. A review of the literature. Cancer Nursing 23(1), 20–31.
• Liénard A., Merckaert I., Libert Y., Delvaux N., Marchal S., Boniver J., Etienne A.M., Klastersky J., Reynaert C., Scalliet P., Slachmuylder J.L. & Razavi D. (2006) Factors that influence cancer patients' anxiety following a medical consultation: impact of a communication skills training programme for physicians. Annals of Oncology 17(9), 1450–1458.
• Maguire P. & Pitceathly C. (2002) Key communication skills and how to acquire them. BMJ 325(7366), 697–700.
• Maguire P. & Pitceathly C. (2003) Managing the difficult consultation. Clinical medicine 3(6), 532–537.
• Maguire G.P., Goldberg D.P., Hobson R.F., Margison F., Moss S. & O'Dowd T. (1984) Evaluating the teaching of a method of psychotherapy. The British Journal of Psychiatry 144, 575–580.
• Maguire P., Faulkner A., Booth K., Elliott C. & Hillier V. (1996) Helping cancer patients disclose their concerns. European Journal of Cancer 32A(1), 78–81.
• Markus H., Bland J.M., Rose G., Sitzer M. & Siebler M. (1996) How good is intercenter agreement in the identification of embolic signals in carotid artery disease? Stroke 27(7), 1249–1252.

- Noldus L.P., Trienes R.J., Hendriksen A.H., Jansen H. & Jansen R.G. (2000) The Observer Video-Pro: new software for the collection, management, and presentation of time-structured data from videotapes and digital media files. Behavior Research Methods, Instruments & Computers 32(1), 197–206.
- Ong L.-M.L., Visser M.-R.M., Lammes F.B. & de Haes J.-C.J.M. (2000) Doctor–patient communication and cancer patients' quality of life and satisfaction. Patient Education and Counseling 41(2), 145–156.
- Parle M., Jones B. & Maguire P. (1996) Maladaptive coping and affective disorders among cancer patients. Psychological Medicine 26(4), 735–744.
- Parle M., Maguire P. & Heaven C. (1997) The development of a training model to improve health professionals' skills, self-efficacy and outcome expectancies when communicating with cancer patients. Social Science & Medicine 44(2), 231–240.
- Piccolo L.D., Goss C. & Zimmermann C. (2005) The Third Meeting of the Verona Network on Sequence Analysis. Finding common grounds in defining patient cues and concerns and the appropriateness of provider responses. Patient Education and Counseling 57(2), 241–244.
- Razavi D., Delvaux N., Marchal S., De Cock M., Farvacques C. & Slachmuylder J.L. (2000) Testing health care professionals' communication skills: the usefulness of highly emotional standardized role-playing sessions with simulators. Psycho Oncology 9(4), 293–302.
- Saks A.M. & Belcourt M. (2006) An investigation of training activities and transfer of training in organizations. Human Resource Management 45(4), 629–648.
- Salas E. & Cannon-Bowers J.A. (2001) The science of training: a decade of progress. Annual Review of Psychology 52, 471–499.
- Sandvik M., Eide H., Lind M., Graugaard P.K., Torper J. & Finset A. (2002) Analyzing medical dialogues: strength and weakness of Roter's interaction analysis system (RIAS). Patient Education and Counseling 46(4), 235–241.
- Schofield N. (2003) Reducing the occurrence of blocking behaviours by health care professionals in cancer care. MSc thesis. University of Manchester,
Manchester
- Suchman A.L., Markakis K., Beckman H.B. & Frankel R. (1997) A model of empathic communication in the medical interview. JAMA 277(8), 678–682.
- Uitterhoeve R., Duijnhouwer E., Ambaum B. & Van Achterberg T. (2003) Turning toward the psychosocial domain of oncology nursing: a main problem analysis in the Netherlands. Cancer Nursing 26(1), 18–27.
- Wilkinson S. (1991) Factors which influence how nurses communicate with cancer patients. Journal of Advanced Nursing 16(6), 677–688.
- Zou G. (2004) A modified Poisson regression approach to prospective studies with binary data. American Journal of Epidemiology 159(7), 702–706.