

## Cues and Concerns by Patients in Medical Consultations: A Literature Review

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The aim of the current article is to review the peer-reviewed research literature on cues and concerns published between 1975 and 2006. To be included, articles had to report observational studies based on patient–physician consultations and report findings on patient expressions of cues and/or concerns. Quantitative and qualitative studies from different medical settings were considered. Fifty-eight original articles based on the analysis of audio- or videotaped medical consultations were tracked down.

Definition of cues and concerns and methodological approaches differed widely. Physicians missed most cues and concerns and adopted behaviors that discouraged disclosure. Communication training improved the detection of cues and concerns. Future research progress would require different methodological approaches more appropriate for studying verbal interactions and the complexity of the various levels that influence interactions.

*Keywords:* cue, concern, emotions, medical interview, physician–patient relations

One of the crucial challenges of physicians is to be able to grasp and respond to the patients' expressions of emotions, worries, needs and other topics of perceived and immediate importance for the patient. Such utterances from patients may relate to uncertainties or anxiety about their medical conditions and treatment options but also may regard life events or social problems in general and often indicate emotional distress of clinical significance.

Anxiety and depressive states, but also less well-defined sub-threshold conditions, are common among patients with physical disease, with prevalence rates of 20% to 40% (Ford, Lewis, & Fallowfield, 1995; Ustun & Sartorius, 1995). However, the detection rate of emotional distress in this population has remained low, rarely exceeding 50% (Fallowfield, Ratcliffe, Jenkins, & Saul, 2001; Kessler, Lloyd, Lewis, & Gray, 1999; Passik et al., 1998). This has perpetuated the concerns of Schulberg (1991) regarding the adequacy of comprehensive patient care and the costs of untreated psychiatric symptoms in terms of unmet needs, functional disability, and high service utilization. The difficulty of physicians in identifying emotional distress of patients has been shown to be related to specific aspects of their clinical interview approach. Physicians discourage patients from disclosing details regarding their psychological state by privileging the biomedical aspects of patient complaints (Byrne & Long, 1976; Giròn,

Manjòn-Arce, Puerto-Barber, Sánchez-García, & Gomez-Beneyto, 1998; Goldberg, Steele, Johnson, & Smith, 1982). Patients, in turn, might discuss their emotional functioning only if the physician initiates the discussion (Detmar, Aaronson, Wever, Muller, & Schornagel, 2000).

These observations explain why emotional problems, although frequent, are seldom presented directly and spontaneously in the consultation (“I am so worried about this constant pain”) but when expressed at all, are rather expressed in a more indirect hint of an underlying feeling (“and then the pain really stabs me”) and therefore are difficult to detect. The literature refers to such expressions most often as concerns and cues and sometimes clues. The findings also imply that eliciting more emotional cues and concerns from the patient will improve physicians' ability to detect emotional problems and psychiatric disorders.

The focus on the detection of emotional distress has generated increasing interest in the micro-behaviors of physicians that take place within medical consultations and are linked to patients' manifestation of concerns or cues. A better understanding of the strengths and weaknesses of doctor–patient interactions is essential if the outcome of care is to be improved. As interest in this area has increased, so has interest in the number of instruments developed to analyze videotaped or audiotaped medical consultations and to approach a series of research questions: How frequent are cues and concerns for different patient groups and physicians? What are patients' main concerns and which of them are more likely to be disclosed or picked up? Which physician and patient characteristics are associated with the expression of cues and concerns, and what is the impact of communication skills training on the detection and handling of such information? Are the expressions of cue and concerns and the physician's response related to patient outcomes?

To our knowledge there is no systematic review of research in this area. The purpose of the present article is therefore to examine the research literature on cues and concerns occurring within

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medical consultations as it has emerged over the past 30 years and to present it in a narrative review.

### Method

To be included, articles had to report observational studies based on physician–patient consultations, either observed directly, audio- or videotaped, or transcribed. Consultations with both real or standardized patients were accepted. We required that data be based on rating scales or a coding system or on given guidelines for qualitative analysis. Two subcategories of studies were chosen: (a) quantitative studies applying association measures or sequence analysis and (b) qualitative studies.

A search was conducted in the MEDLINE database for articles published from 1975 through March 2006. Three conditions had to be satisfied in order to include an article selected from the MEDLINE sample. First, all articles had to report *physician–patient relations* as a focused keyword. Second, the article had to fill one of the following criteria: inclusion in the abstract of the text word *concern(s)*, *cue(s)*, or *clue(s)*, or inclusion in the article of the term *emotions* or *empathy* as a focused keyword. Third, the article had to also include one of the keywords: *communication*, *verbal behavior*, *nonverbal communication*, *patient satisfaction*, or *patient compliance*. Only articles abstracted in English were considered for inclusion.

Three-hundred-thirteen articles satisfied the keyword criteria. On the basis of the abstracts, we selected 58 empirical observational studies. The 255 rejected articles represented other categories, such as reviews, editorials and commentaries, intervention studies without direct observation of interaction, questionnaire studies, focus group studies, and so forth. Further, 29 articles were excluded on the basis of their content: when the word *concern* was applied in a general sense, for example, in terms of a concern of the author (“concerns for clients’ right”) or a concern of the physician (“lower concern/anxiety in the physician’s voice”); when expressions of cues or concerns during the consultation were not the topic (e.g., when concerns were measured by a visual analog scale or a check list) or were a more general reference to patients’ concerns, more or less equivalent to complaints (“patients who had significant health concerns”). The latter criterion was the most difficult one to apply. We tried to select only articles that applied the words *cue* and *concern* in a more qualified way, in that they had to relate to possibly unpleasant or stressful emotions. With regard to qualitative papers, only those that explicitly studied cues, concerns, or the concept *empathic opportunities*, which is another label for the same phenomenon, were included.

The remaining 29 articles comprised the MEDLINE-based portion of the sample. As a second procedure, we went through the reference lists of these articles and chose possibly relevant papers for further consideration. We also considered a number of known papers on cues and concerns that did not include such keywords in their abstracts. As a result, 30 additional articles were added to those selected from the MEDLINE search. Thus, in all, 59 papers were included in this review.

### Results

#### *Study Characteristics*

The main characteristics of each of the studies selected for the review are listed in Tables 1, 2, and 3. Most of the studies were

from general practice/family practice/general internal medicine (32) or from oncology (12). A number of studies included patients from departments of surgery (2), psychiatry (3), or gynecology (2). Eight studies involved standardized patients. The studies were published in 27 different journals, clearly not sharing the same readership. Nineteen articles appeared in *Social Science and Medicine* or *Patient Education and Counseling*, 11 in psychiatry journals, 7 in oncology and psycho-oncology journals, and 7 in general medical journals (*BMJ [British Medical Journal]*, *JAMA: The Journal of the American Medical Association*, *The Lancet*). The rest of the articles were spread across journals in different areas, such as health care/health policy (3), medical education (2), gynecology/surgery (3), and family and general medicine (7).

Only one empirical study was published in the first 5-year period from 1975 to 1979 (Maguire & Rutter, 1976). There were 4 studies from 1980 to 1984, 5 from 1985 to 1989, 4 from 1990 to 1994 and 12 from 1995 to 1999. More than half of the studies appeared between 2000 and 2006. Although we limited the present review to physician–patient communication, we included 2 articles (Maguire, Booth, Elliot, & Jones, 1996; Maguire, Faulkner, Booth, Elliot, & Hillier, 1996) in which physicians, together with other health personnel, conducted the interviews.

#### *Definitions*

Table 4 summarizes the definitions of *cues*, *clues*, and *concerns* and other synonyms used in the studies reported above. The definitions vary widely in detail and cover more or less differentiated content areas. When referring to single studies, we use the terms as they have been adopted by the respective authors.

Despite the divergences, three main interdependent dimensions can be identified that have been used, although inconsistently, in defining cues and concerns. These dimensions are the emotional content of patient’s utterances, the intensity and explicitness of the expressed emotion, and the source of the patient’s utterance, in the sense that it may be solicited by the physician or expressed spontaneously by the patient.

#### *Content*

To be coded as cue or concern, the utterance should represent an issue that is experienced by the patient to have a certain subjective importance and a negative emotional impact. Many of the definitions and rating systems referred to in the studies of this review require that an emotion be present and expressed either explicitly or more indirectly, verbally or nonverbally, in order to code the expression as a cue or concern.

Emotions expressed by posture, body movement, voice, or mimic are generally considered nonverbal cues (Davenport, Goldberg, & Millar 1987; Goldberg et al., 1984; Maguire et al., 1984). Consequently, many authors define any verbalization of emotion, whether hinted or fully expressed, as a “verbal” cue and disregard the label *concern* (Butow, Brown, Gogar, Tattersall, & Dunn, 2002; Davenport et al., 1987; Gask, Goldberg, Lesser, & Millar 1988; Gask, McGrath, Goldberg, & Millar, 1987; Goldberg, Jenkins, Miller, & Faragher 1993; Goldberg, Steele, & Smith, 1980; Kim, Kols, Prammawat, & Rinehart, 2005; Levinson, Horawara-Bhat, & Lamb, 2000; Maguire et al., 1984; Salmon, Dowrick, (text continues on page 446)

Table 1  
*Quantitative Studies Based on Association Measures*

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Maguire & Rutter, 1976	50 senior medical students, each conducting a 15-minute audiotaped interview with a psychiatric patient.  History taking skills assessed with a rating scale. Simple skills were rated as absent or present, complex skills on a 5 point scale (0 = very poor).	Descriptive.  Percentage frequencies of deficiencies in techniques.	History taking skills of medical students.  74% very poor in picking up cues, 62% failed to clarify, 58% showed inadequate question style.  Exercise time = 15 minutes.
Goldberg et al., 1980	12 general practitioner trainees. Random selection of 100 videotaped interviews at T1 (pretraining) and 100 at T2 (posttraining).  Classification of all utterances into 14 interview behaviors. Percentage of cues missed.	Training evaluation.  <i>t</i> test within each resident pre- and post-training.	Evaluation of communication skills training on cues missed and desirable interview behaviors.  Six cues on average per interview were missed at T1 compared with 1.8 at T2. Training increased sensitivity to cues.
Beckman & Frankel, 1984	74 general practitioner consultations. Audiotaped recordings. "Solicitation" was defined as open-ended request for patient's problem or concern as patient response, completed or uncompleted by interruption.	Descriptive.  Analysis of communication in patient's opening statements and physicians' responses.	Physician's role in soliciting and developing patient's concerns at the outset of a clinical encounter.  Patients were provided the opportunity to complete opening statement of concern in 23% of visits. Physician interrupted the patient statement of concern in 68% of the consultations.
Maguire et al., 1984	12 trainees in psychiatry. Videotaped and transcribed interviews of a simulated patient before (T0), after conversation model training (T1), and after supervision (6 months later) (T2).  Classification of medical utterances into nonmodel and model behaviors.	Evaluation of a training package.  Two-way ANOVA with assessment, time (T0, T1, T2) and doctor as main effects, components of the teaching package as dependent variables. Paired <i>t</i> test to compare teaching package and supervision effects.	Evaluation of the conversational method in terms of cues missed and desirable interview behaviors.  Significant improvement on most of the key skills as a result of the training. Increase in negotiating style and explaining. Little change in recognizing verbal cues.  70% of verbal cues were missed before and after training.
Goldberg et al., 1984	Five psychotherapists trained in the conversational method matched for seniority and experience to five psychiatrists not trained in this method. Each psychiatrist was randomly allocated to 4 patients. The first five interviews of each patient were videotaped  Classification of medical utterances into nonmodel and model behaviors.	Case control study.  Series of one-way ANOVAs to test the effect of therapist's group (model vs. control) on the occurrence of each interview rating code.	Difference in interviewing behavior in the two groups of psychiatrists.  No difference between the two groups in responding to cues (47.2% and 39.5% of all cues, respectively). Responding to nonverbal cues in both groups was very rare (6% of all cues).
Davenport et al., 1987	Six general practitioners (3 good and 3 bad detectors of emotional distress), 48 audiotaped interviews (8 per general practitioner, 4 patients with low GHQ, and 4 with high GHQ score).  Cue coding.	Descriptive.  Two-way ANOVA (GHQ and Identification Index as predictors of patient's cue emission).	Relation between general practitioners' ability to detect distress and number of cues given by high- and low-GHQ patients.  The higher the GHQ score, the higher was the number of cues. Able distress detectors elicited more verbal and vocal cues. Poor detectors suppressed verbal and vocal cues.  Fixed observation period = first 5 min. Mean cues per interview = 3.2 nonverbal cues, 1.1 verbal cues.
Gask et al., 1987	Ten experienced general practitioners. 10-min videotaped interviews with simulated patients before and after training.  Classification of all utterances into 14 interview behaviors.	Evaluation of a training package.  Pre- and post-training comparisons (Wilcoxon test).	Evaluation of communication skills training on percentage of cues missed.  53% of cues were missed before and 33% were missed after training.

Table 1 (continued)

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Gask et al., 1988	14 general practitioner trainees, 70 pre- and 70 post-training videotaped interviews. Classification of all utterances into 14 interview behaviors. Percentage of missed cues.	Evaluation of a training package. One-way ANOVA with repeated measures to compare pre- and post-training.	Evaluation of training on communication skills training. Significant increase in open psychosocial questions and clarifying. 60% of all verbal cues were missed before and 48% were missed after the training.
Kaplan et al., 1989	Audiotaped consultations with 252 chronically ill patients comprising ulcer, hypertension, diabetes, and breast cancer patients. Classification of each physician or patient utterances into 30 categories. Subjective and objective health status measured at 2–8 weeks follow-up.	Descriptive. Pearson correlations between physicians' and patients' conversational behaviors and health outcome variables.	Effect of conversational behaviors on health outcome. Patient control, affect opinion exchange, negative affect and information received were associated with better functional status and subjective evaluation of health.
Street, 1991	Ten family practice trainees, 41 videotaped interviews. Five verbal behaviors were coded (2 for the doctor: information giving and partnership building; 3 for the patient: opinion-giving, affective expressions, and question asking).	Descriptive. Partial correlation with the two verbal behaviors coded for the doctors as dependent variables.	Impact of patient personal characteristics and communication style on the amount of medical information given. (a) Information regarding diagnosis and health matters was primarily related to the patient's anxiety, education, and question asking; (b) information regarding treatment was a function of patient's question asking and expression of concerns; and (c) physician's partnership-building utterances influenced patient's assertiveness and expressiveness. Mean affective expressions per interview = 6.8.
Street, 1992	Seven physicians (3 pediatricians, 2 general practitioners, 1 allergist, 1 otolaryngologist). 151 videotaped interviews with parents of pediatric patients. Ten categories for physician utterances (information giving, partnership building, directives, and socioemotional utterances), 8 for parents (opinion-giving, affective expressions, and question asking).	Descriptive. Covariance and partial correlations on patient–physician communicative behaviors, with doctor as between-subjects variable.	Impact of personal and interactive factors on variation in patterns of physician–parent exchange. (a) Physicians varied in information giving, partnership building, directives and socioemotional utterances; (b) parents who asked more questions and expressed more negative affect received more information; and (c) parents who were more affectively expressive received more reassurance. Mean negative affect per interview = 3 (3%).
Goldberg et al., 1993	Six trainee general practitioners (3 good and 3 bad detectors of emotional distress), 48 audiotaped interviews (8 per general practitioner, 4 patients with low GHQ and 4 with high GHQ score). First 3 min of audiotaped consultations.	Descriptive. Regression models (mean cue emission as dependent variable, high and low identification index, and physician's verbal and nonverbal behaviors).	Assessment of general practitioner behaviors that increase and decrease cue emission Patient-led interviews were associated with greater cue emission; doctor-led interviews were associated with lower rates of cue emission. Good detectors of emotional distress obtained higher cue emission than did poor detectors, when both used patient-centered behaviors.
White et al., 1994	20 primary care physicians, 88 audiotaped consultations, analyzed with a modified version of RIAS.	Descriptive Descriptive statistics, <i>t</i> tests, and correlation analyses to compare patient communication behaviors in relation to physician verbal behaviors, with particular reference to the closing moments of the interview.	To define and describe the communication between physicians and patients in the closing phase of the medical visit. To identify types of communication throughout the visit that are associated with the introduction of a new problem during the closing moments of the visit or with longer closures. New problems arose in 21% of the visits in the closure phase. New problems were associated with less information exchange, fewer orienting statements, and higher patient affect. (table continues)

Table 1 (continued)

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Hall & Roter, 1995	69 physicians and 648 audiotaped routine medical visits, coded with RIAS. Patient and physician questionnaires on satisfaction with communication and on perceived patient satisfaction, respectively.	Descriptive. Correlation and ANOVA to compare mean levels of satisfaction with communication and predictors of satisfaction.	To examine patient gender in relation to patient and physician communication, patient preference for the physician's communication style, patient satisfaction, and the physician's awareness of the patient's satisfaction. Women sent and received more emotional talk than men. Mean levels of satisfaction with communication did not differ by gender.
Ford et al., 1996	Five oncologists, 117 patients (two consultations each), 113 audiotapes from Consultation 1 and 95 from Consultation 2. Classification of audiotapes with RIAS.	Descriptive. Hierarchical cluster analysis to define patterns of interaction in cancer consultations.	Assessment of first and second "bad news" cancer consultations. Clinicians tended to use closed rather than open questions. Patients asked few questions and were seldom given space to initiate discussion. Biomedical information giving prevailed in physicians and patients. Despite the fact that the consultations concerned life-threatening disease, the number of questions related to psychosocial issues was low. Mean duration of first and second consultations = 30 and 14 min, respectively. Mean concerns per interview = 1.5 (0.94%) and 0.96 (1.25%) for the first and second consultations, respectively.
Hall et al., 1996	Study 1: 50 internists, 100 visits; Study 2: 127 physicians, 546 visits; Study 3: 22 rheumatologists, 132 visits; Study 4: 69 internists and family medicine physicians, 649 visits  Study 1: Videotaped consultations; Studies 2-4: Audiotaped consultations.  Verbal content and nonverbal cues indicating task-related behavior and affective reactions on the part of both the physician and the patient.	Review of four descriptive studies. All available background characteristics for both physicians and patients were controlled via partial correlations. The meta-analytic procedures used were the unweighted and weighted (by sample size) average partial correlations, the combined <i>p</i> across studies (Stouffer method), and the test of effect size heterogeneity.	Assessment of patients' physical and emotional health status in relation to verbal and nonverbal communication between physicians and patients in four original studies using meta-analytic procedures. Physicians showed signs of negative response to sicker or more emotionally distressed patients, both in their behavior and in their ratings of satisfaction with the visit. Sicker patients behaved more negatively than healthier patients. Physicians engaged in a variety of positive and professionally adequate behaviors with the sicker or more distressed patients. More distressed patients used more "emotionally concerned talk" (partial correlation = .10) compared with healthier patients.
Maguire, Faulkner, et al., 1996	206 cancer care health professionals, each interviewing one simulated patient before and after a workshop on interviewing skills. Transcription of audiotapes.  Rating system of Booth & Maguire (1991). All patient utterances rated on a 4-point scale for the presence of feelings.	Workshop evaluation. Spearman correlation coefficient between specific interview behaviors and patient disclosure of significant information.	Identification of physician behaviors facilitating or inhibiting patient disclosure of significant information. Patient disclosure of significant information was promoted by the use of open directive questions, focusing on and clarifying psychological aspects, empathic statements, summarizing and making educated guesses. The use of leading questions, focusing on and clarifying physical aspects, moving into advice and reassurance mode inhibited patient disclosure. Fixed observation period of 20 min. Mean proportions per consultation = feelings hinted (37.6%), mentioned (16%). Mean significant information per interview = 45%.
Maguire, Booth, et al., 1996	169 health professionals, each interviewing one simulated patient before and after a workshop in interviewing skills, and 6 months later.  Transcription of audiotapes. Rating system of Booth and Maguire (1991).	Workshop evaluation. Wilcoxon matched-pairs test to compare pre- and post-workshop assessments and pre-test and 6-month follow-up data.	Impact of workshop on key interviewing skills that facilitate patient disclosure of key concerns. Improvement in identifying key problems. Increase in use of facilitating behaviors: Open psychosocial questioning and clarifying psychological topics; inhibitory behavior more frequent before training. All significant gains were still present 6 months later but showed some decline over time.

Table 1 (continued)

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Van Dulmen et al., 1997	18 (5 male) consecutive diabetes mellitus patients. Audiotaped consultations of the first three consultations of each patient with a male internist, coded with RIAS.	Descriptive study. One-way analysis of variance to assess changes in communication behavior through time. Duncan's multiple range test and <i>t</i> test for pairwise comparison of group means.	Does the communication style change during a series of consultations? First consultations were characterized by relationship building; the subsequent two, by discussion of treatment and psychosocial issues, respectively. Mean duration of interview = 27 min. Mean concerns per interview = 0.84.
Marvel et al., 1999	29 family doctors, audiotaped and transcribed interviews with 264 patients. Coding of interviews with Beckman and Frankel (1984) method. <i>Solicitation</i> defined as open-ended request for patient's problem, concern as patient response, completed or uncompleted by interruption.	Descriptive study. Frequency of physician solicitation of patient concerns; rate of completion of patient responses and frequency of late-arising concerns.	Extent to which experienced family doctors elicit the agenda of patient concerns. Physicians elicited concerns in 75% of the interviews and allowed patients to complete the list of concerns in 28% of them. Late-arising concerns were more frequent in interviews without the solicitation of concerns. Mean concerns per interview = 4 doctor-initiated and 0.9 patient-initiated.
J. W. Robinson & Roter, 1999	308 general practice patients with GHQ-28 > 5 and 69 general practitioners. Audiotaped consultations coded for psychosocial problems and the absence or presence of prior psychosocial inquiry (before disclosure). Mental health recognition by general practitioner when rated as present, or when general practitioners' problem list included a psychosocial problem.	Descriptive. Logistic regression analyses with generalized estimating equations to adjust intra-cluster correlation (of consultations of the same general practitioner).	To measure the frequency of disclosure of psychosocial problems among psychologically distressed primary care patients, the effects of prior psychosocial inquiry by general practitioners and of other patient variables on disclosure, and the effect of disclosure on mental health problem recognition by general practitioners. Disclosure in 67% of 101 consultations with prior inquiry and in 43% of 207 consultations without. Odds of disclosure increased by prior inquiry, familiarity with patient, and severity of emotional distress. Distress recognition occurred in 86% of visits with disclosure and in 28% of visits without disclosure.
Levinson et al., 2000	54 general practitioners and 62 surgeons, 116 audiotaped and transcribed interviews randomly selected. Identification of emotional and social clues and physician response (positive responses and missed opportunities).	Descriptive study. Frequency of presentation of clues by patients during office visits, nature and content of clues, and nature of physician responses to clues.	How patients present clues and how physicians respond: 52% and 53% of the visits in primary care and surgery with one or more clues. Patients initiated 70% of clues. 76% of patient-initiated clues in primary care settings and 60% in surgical settings were emotional. In surgery, 70% of emotional clues related to patients' feelings about their biomedical condition; in primary care, emotional clues more often related to psychological or social concerns (80%). Physicians responded positively to emotions in 38% of cases in surgery and in 21% of cases in primary care, but more frequently they missed opportunities to address patients' feelings. <i>Primary care</i> Mean duration = 18 min. Mean of emotional clues per interview = 1.8 (1.4 patient-initiated and 0.4 doctor-initiated). Mean social clues: 0.6 (0.4 patient-initiated and 0.3 doctor-initiated). <i>Surgery</i> Mean duration = 13 min. Mean of emotional clues per interview = 1 (0.8 patient-initiated and 0.2 doctor-initiated). Mean social clues = 0.85 (0.5 patient-initiated, and 0.3 = doctor-initiated).

(table continues)

Table 1 (continued)

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Del Piccolo et al., 2000	Six general practitioners; 238 patients distinguished in two groups of matched pairs of patients (patients considered by general practitioner as with or without emotional distress). Within each pair, one patient was a case (GHQ-12 score $\geq 3$ ) and the other was the matched control (GHQ-12 score $< 3$ ). The medical interviews were audiotaped, transcribed, and classified according to VR-MICS.	Matched-pair design. Logistic regression and multilevel modeling (cue frequency as dependent variable).	Study of cue behavior defined by content related to psychological, medical, social, and life episodes in patients with and without emotional distress, recognized and not recognized by their general practitioner, and general practitioners' verbal behavior in relation to patients' cue emission.  Patients with GHQ-12 $> 2$ gave more cues than did patients with GHQ $< 3$ . Patients correctly identified by general practitioner as distressed offered more cues than did emotionally distressed patients not recognized as such who gave cues related to lifestyle and life episodes. Cues increased with general practitioner's closed psychosocial questions and decreased with active interview techniques.  Mean duration of interview = 11 min. Mean proportion of cues per interview = 5.5% on illness issues, 2.7% on psychosocial issues, 1.7% cues on lifestyle.
Blue et al., 2000	Objective structured clinical observation (OSCE) consultations with standardized patients.  Faculty observer scoring according to a checklist, direct observation, no tapes or transcripts.	Descriptive. Pearson product moment correlations calculated for four communication domains and the patient satisfaction questionnaire.	Comparison of OSCE scores in four performance domains (interviewing skills, negotiating the diagnosis or plan, gathering information, responding to patient's emotions) with patient satisfaction.  Moderate correlation between standardized patient satisfaction and the student's ability to respond to emotions.
Van Dulmen & van Weert, 2001	18 gynecologists (13 consultants and 5 residents) videotaped 526 consecutive outpatient encounters (272 before and 254 after the training). RIAS coding.	Training evaluation. Multilevel analysis to take into account the similarity among encounters with the same gynecologist.	Effects of an experimental communication course on how gynecologists handle psychosocial issue in gynecological consultations.  After training gynecologists increased sensitivity to psychosocial aspects, gave more signs of agreement, became less directive, and asked fewer medical questions and more psychosocial questions. With trained gynecologists, patients asked more questions and provided more psychosocial information  Mean duration = 18 min. Mean proportion of concerns per interview = 1.3%.
Butow et al., 2002	Nine oncologists, 298 audiotaped and transcribed consultations. Coding of patient's cues and their informational or emotional content. Post-consultation measures of technical and relational aspects of care.  Repeated measures of patients' state anxiety at baseline, after the consultation and 2 weeks after.	Descriptive. Hierarchical linear modeling indirect cues given and direct questions posed by patients; doctor responses as dependent variables.	Response of physicians to emotional and informational cues.  Younger and female patients gave more cues for emotional support. Physicians addressed fewer emotional than informational cues. Satisfaction and patient anxiety were unrelated to physicians' responses to cues.  23% of consultations without cues.  Mean duration: 20 minutes. Mean cues per consultation: 2.3 informational, 1.1 emotional cues.
Hall & Roter, 2002	Seven observational studies about the relation between physician gender and patient communication in medical visits. Five studies including general medical patients, two studies with women for obstetrical or gynecological care. Five studies used RIAS coding. Categories included total amount of talk, biomedical information, psychosocial information, question asking, positive/negative talk, emotional talk.	Meta-analytic review. The direction of patient behavior differences regarding male or female physicians were determined by the index of effect size (Cohen's <i>d</i> ).	Do patients talk differently to male and female physicians?  Patients spoke more to female than to male physicians, disclosed more medical and psychosocial information, and made more positive statements. No evidence of a physician gender effect on emotional talk of patients.

Table 1 (continued)

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Hall & Roter, 2002 (continued)	Four studies measured emotional talk: Study 1: 50 internists (25 male), 100 patients (50 male); Study 2: 21 obstetricians (11 male), 82 patients; Study 3: 16 general practitioners (8 male), 405 female patients; Study 4: 21 gynecologists (13 male), 303 patients.		
Ishikawa et al., 2002	12 oncologists, 140 audiotaped cancer consultations coded with RIAS.	Descriptive. Generalized least squares random-effects model (patients were nested within physicians), physician was considered as a random effect variable.	Patient and consultation characteristics in physician-patient interaction in Japanese cancer consultations. Patient information giving was positively associated with physician facilitation. Patient question asking and emotional expression were associated with physician's global affect score. Mean duration = 9 min. Mean concern per interview = 3.8 (4.3%).
Lang et al., 2002	46 videotaped interviews in family practice clinic setting (27 patients were asked sequenced questions, 19 had standard medical interview). All 46 patients had post-interview debriefings.	Case-control design. Measures of patient and physician satisfaction were compared by descriptive statistics and Mann-Whitney test for ordinal data to compare case and controls.	To determine whether asking patients a series of sequenced questions would elicit patient perspective on illness. 12 (44%) patients gave diagnostic attribution after sequenced questions, 6 (22%) gave diagnostic attribution spontaneously, 9 (34%) denied any attribution.
Jenkins & Fallowfield, 2002	93 oncologists, after randomization: 48 attended a 3-day residential course on communication skills and 45 were the control group. 186 videotaped consultations at T1, 186 at T2, classified with MIPS. Physician Psychosocial Belief Questionnaire (PPSB) at both time points.	Training evaluation. Analysis of covariance and chi-square tests to compare pre- and post-training effects.	To examine perceived and observed changes in clinical behavior after a communication skills training. Training increased positive attitude and effective interview styles: Increase in empathy expressions, open questions, adequate response in patient cues, and psychosocial probing. Mean duration = 12 min. Mean cue per interview = 1.2.
Bylund & Makoul, 2002	20 general internists, 100 videotaped consultations coded with the Empathic Communication Coding System.	Descriptive. Reliability indices. <i>t</i> test on the effects of patient gender on the number, specific emotional content, and emotional intensity of empathic opportunities.	Validation of Empathic Communication Coding System. Male and female patients created a comparable number of empathic opportunities, those created by females tended to exhibit more emotional intensity compared with males. Female physicians tended to communicate higher degrees of empathy in response to the empathic opportunities created by patients. 40% of consultations without empathic opportunity. Mean empathic opportunities per interview: 2.5.
Ford et al., 1996	160 oncologists randomly allocated to 4 groups: written feedback followed by course, course alone, written feedback alone, and control. At each of two assessment periods, consultations with 6 to 10 consecutive patients per doctor were videotaped. 2,407 patients participated. MIPS coding.	Randomized controlled trial. Poisson regression analysis of counts of communication behaviors, as the basis of analysis. Two-by-two factorial design.	Efficacy of an intensive 3-day training course on communication skills. Course attendance significantly improved key outcomes. The estimated effect sizes corresponded to higher rates of use of focused questions, open questions, expressions of empathy, adequate responses to patients' cues (38%, $p = .026$ ), and a 24% lower rate of use of leading questions. Mean duration = 12 min. Mean cue per interview prior to training = 1.6. (table continues)

Table 1 (continued)

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Fallowfield et al., 2003	74 oncologists of the intervention group in Fallowfield et al. (2002), 148 videotaped consultations at 12-month follow-up, compared with 148 consultations made at 3-month follow-up. Consultations classified with MIPS.	Randomized controlled trial. Poisson regression analysis of counts of communication behaviors as the basis of analysis. Two-by-two factorial design.	12-month follow-up after an intensive 3-day training course on communication skills. No demonstrable attrition in acquired communication behaviors (fewer leading questions, focused and open-ended questions, response to patient cues). Additional skills were present (fewer interruptions, increased summarizing). Expressions of empathy declined.
Eide, Frankel, et al., 2004	Four oncologists conducted 39 audiotaped consultations, classified with the RIAS and with the E-PE-O.	Descriptive. Interrater agreement for E-PE-O. Proportions of RIAS codes identified in the E-PE-O coding.	Comparison of RIAS and E-PE-O. Satisfactory reliability for E-PE-O. 59% of 29 identified empathic opportunities and 44% of the 121 potential empathic opportunities corresponded to RIAS defined concern. There were 2.7 RIAS defined concerns per consultation. Mean duration = 8 minutes. Mean concern per interview: 2.7. Mean empathic and potential empathic opportunities: 1.3 and 3.1 respectively.
Ford & Hall, 2004	Ten good communicating and 10 less skilled oncologists. 40 videotaped interviews coded with MIPS. Number of missed cues.	Descriptive. Spearman correlations between MIPS variables. Non-parametric comparisons on MIPS variables between skilled and nonskilled oncologists.	Do behavior categories of the MIPS discriminate between skilled and less skilled communicators? 67% of consultations without cue. 11 out of 15 MIPS variables distinguished the two groups. No difference in the number of missed cues.
Del Piccolo, Mead, et al., 2005	Six Italian and 6 UK GPs, each GP contributing with 5 consultations of GHQ-12 high and low scorers. Consultations were coded with VR-MICS.	Matched sample design. Interaction and main effects of GHQ status and nationality assessed with 2-way ANOVA. Cohen's kappa and Dice index to assess VR-MICS reliability.	Interrater and intrarater reliability of the English translation of the VR-MICS. Sensitivity of VR-MICS in discriminating between high and low UK GHQ-12 scorers. The English version of the VR-MICS showed satisfactory reliability and discriminated between high and low UK GHQ-12 scorers. High scorers gave more psychosocial cues and more positive talk than low scorers.
Timmermans et al., 2005	54 cancer patients interviewed by 12 radiation oncologists. Videotaped consultations coded by RIAS. Indicators of stimulation of patient participation: physician giving information on diagnosis, prognosis, other treatment options; psychosocial questions and concern. Patient categories of interest: patient asking information on diagnosis/prognosis/other questions.	Descriptive. Interrater reliability assessed by Spearman correlation coefficients. Mean percentages of speaker's utterances as defined by RIAS clusters to assess patient involvement.	Assessment of patient participation in the initial consultation on palliative treatment offers. Patient participation was high in discussion of life circumstances, but low in discussion of medical information. Physician stimulated participation mainly by providing medical information and asking questions. Mean concern per interview: 3 (1.4%).

Note. GHQ = General Health Questionnaire; RIAS = Roter Interaction Analysis System; VR-MICS = Verona Medical Interview Classification System; MIPS = Medical Interaction Process System; E-PE-O = empathic and potential empathic opportunity method.

Ring, & Humphris, 2004). Whereas *cue* may refer to nonverbal and verbal expressions of emotion, definitions of *concerns* consider mainly verbalized emotions (Arborelius & Österberg, 1995; Ford, Hall, Ratcliffe, & Fallowfield, 2000) and may also include utterances accompanied by a nonverbal expression of emotion, for example, by pitch of voice (Ford et al., 2000; Roter, 1993).

In addition to negative emotions, some authors have considered other contents of cues or concerns. *Cues* can refer to social topics, quality of life, illness issues, or information needs

(Arborelius & Österberg, 1995; Butow et al., 2002; Del Piccolo, Saltini, Zimmermann, & Dunn, 2000; Epstein et al., 1998; Ford et al., 2000; Levinson et al., 2000). Similarly, *concern*, besides psychological and social contents, may comprise the medical problems for which the patient consults (Beckman & Frankel, 1984; Marvel, Epstein, Flowers, & Beckman, 1999; J. D. Robinson, 2001; White, Rosson, Christensen, Hart, & Levinson, 1997), questions or statements about symptoms and pain (McCabe, Heath, Burns, & Priebe, 2002; Rogers & Todd, 2000), or

Table 2  
*Quantitative Studies Applying Sequence Analysis*

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Zimmermann et al., 2003	Six general practitioners, 238 audiotaped and transcribed consultations classified with VR-MICS.	Descriptive. Lag 1 sequence analysis of units of speech after patient cues.	To explore how general practitioners elicit and respond to patient cues. Psychosocial cues increased facilitating expressions, closed and open psychosocial questions, and psychosocial information. Patient cues increased occurrence after physician facilitation, but not after open-ended questions.
Eide, Quera, & Finset, 2003	Four oncologists, 35 audiotaped outpatient consultations. RIAS coding.	Descriptive. Lag 4 sequence analysis of units of speech before and after patient concerns.	Application of sequence analysis to the study of physician behaviors that precede and follow patient concerns. For female physicians the significantly associated behavior before the patient's expression of concern was reassurance, whereas male physicians also applied facilitation behavior. After patients' expression of concern, both reassurance and facilitating behavior were shown by physicians of both genders.
Langewitz et al., 2003	43 internal medicine residents (20 belonged to the intervention group). Pre- and post-intervention interviews with simulated patients. Maastricht History and Advice Checklist (MAAS-R) and RIAS coding.	Randomized controlled intervention study. Lag 1 sequence analysis after open and closed questions, applying so called U-files of the RIAS data.	Effect of physician behaviors on length and content of patient speech. The likelihood of a patient concern was 10 times higher after physicians' open question than after closed question.
Van Dulmen et al., 2003	19 gynecologists conducting 291 videotaped consultations at pretraining, 266 at 4 months after training. RIAS coding.	Descriptive. Lag 1 sequence analysis of units of speech after patient concerns.	To investigate how gynecologists respond to patient concerns. Most prevalent responses to patient concerns were agreement, understanding, and information. Affective responses were rare. No differences in the response to cues before and after training.
Van den Brink-Muinen & Caris-Verhallen, 2003	Nine general practitioners, 9 videotaped consultations from a sample of 1,600. RIAS coding.	Descriptive. Visual inspection of sequences in five lags after concerns.	To analyze with sequence analysis physician-patient dialogue surrounding patients' expression of emotional concerns. General practitioners responded more often with facilitative than with empathic responses to patient concerns. Empathic responses occurred most often in the first lag after a concern.
Eide, Quera, et al., 2004	Four oncologists with 36 audiotaped cancer consultations. Nine hematologists with 79 audiotaped consultations. RIAS coding.	Descriptive. Lag 4 sequence analysis of units of speech before and after patient concerns.	Physician communication before and after a patient's expression of concern. Physicians in both samples used silence and minimal facilitations before patient concern. The oncologists also used optimistic and affirming responses. The most common physician responses to patients' concern were minimal facilitations or affirming and optimistic responses.
Van Dulmen & van den Brink-Muinen, 2004	142 general practitioners, each conducting 20 videotaped consultations, coded with RIAS. Additional patient measures were the State-Trait Anxiety Inventory and ratings of perceived and preferred physician empathy. An additional physician measure was the adequacy of response.	Descriptive. Lag 1 Sequence analysis of units of speech after patient concerns.	To study communication sequences in relation to patient's preference for empathic doctors, perceived empathy, and the level of anxiety. General practitioners' response to patient concerns was agreement, paraphrasing, and empathy (in 47.6%, 23.6%, and 13.5% of consultations, respectively). No significant relationship was found between patient's preference and the adequacy of general practitioner response.
Kim et al., 2005	Six physicians, 46 transcripts of videotaped family planning consultations. Ad hoc definitions of informational and emotional cues. Physician responses analyzed by response to content and feelings and by RIAS codes.	Descriptive. Analysis of three lag conversational turns after emotional and informational cues expressed by the patient.	Examination of physician's responsiveness in three subsequent conversational turns to patients' informational and emotional cues. Physicians offered full or partial response to the content of 88% of cues at lag 1. Such responses decreased at lags 2 and 3. The most frequent response to emotional cues at all three turns was to ignore patients' feelings.

(table continues)

Table 2 (continued)

Author(s)	Sample, setting, and measures	Design and analysis	Objective and main findings
Goss et al., 2005	Six general practitioners, 252 audiotaped and transcribed consultations coded with VR-MICS.	Descriptive. Lag 1 sequence analysis of units of speech after general practitioner information and instruction.	To assess patients' participation in the information giving process. General practitioner instructions reduced the likelihood of cues, which was significantly higher after information on psychosocial and medical issues.
Rimondini et al., 2006	10 psychiatric residents, 20 simulated patients, 120 videotaped and transcribed psychiatric out-patient consultations, coded with VR Psychiatric Interview Classification System (VR-PICS).	Descriptive. Lag 1 sequence analysis of units of speech after psychosocial cues/statements and psychosocial opinion. Multinomial logit regression analysis.	To assess how residents reply to different patient expressions of concern. Concern expressions increased the likelihood of passive listening, emotion focusing interventions and active listening skills.

Note. VR-MICS = Verona Medical Interview Classification System; RIAS = Roter Interaction Analysis System.

patients' diagnostic attribution to symptoms (Lang, Floyd, Beine, & Buck, 2002). Such patient information, important in itself, often hides emotional distress, which may emerge when the physician pays adequate attention to such apparently emotionally neutral contents (Del Piccolo et al., 2000).

### Emotional Intensity

Patients verbalize their emotions or worries, being more or less direct or intense in their expression. The concepts of indirectness and explicitness of the expression overlap considerably with the dimension of intensity, as shown by the 4-point scale, ranging from *no element of emotion* to *full expression*, on the Booth-Maguire rating system (Booth & Maguire, 1991) used by Maguire and colleagues (Maguire, Booth, et al., 1996; Maguire, Faulkner, et al., 1996), and the 3-point scale (*weak, moderate, strong*) used by Butow et al. (2002). Both systems maintain the label *cue* for highly intense or explicit emotional expressions as well.

The distinction between indirect or hinted emotions and explicitly expressed emotionally charged issues has been used in the recently developed coding system, the Medical Interaction Process System (MIPS) by Ford et al. (2000), to differentiate between cues and concerns, thus incorporating both concepts in the same instrument. Similar criteria of explicitness and indirectness, used respectively for concerns and cues, are applied to distinguish between empathic and potential empathic opportunity (Bylund & Makoul, 2002; Suchman, Markakis, Beckman, & Frankel, 1997;).

Neither the coding definitions in earlier studies (Davenport et al., 1987; Gask et al., 1987, 1988; Goldberg et al., 1980, 1984, 1993; Maguire et al., 1984) nor those of the Roter Interaction Analysis System (RIAS; Roter, 1993) or the Verona Medical Interview Classification System (VR-MICS; Del Piccolo et al., 2000) make this distinction. The RIAS classifies all statements and nonverbal expressions indicating worry or distress or deserving special attention under the definition of concern, disregarding the concept of cue. In contrast, the VR-MICS does not adopt the term *concern* and considers all utterances that contain verbally expressed emotions as psychological cues or statements regardless of their emotional intensity or explicitness. Similarly, Levinson et al.'s (2000) and Kim et al.'s (2005) definitions of emotional clues and cues do not consider the intensity of emotion, nor the concept of concern.

### Cue/Concern Source

This dimension refers to the distinction between utterances that are responses to the physician's question or are initiated by the patient and has been applied to cue as well as to concern. The earlier studies differentiate between doctor- and patient-led cues (Davenport et al., 1987; Gask et al., 1987, 1988; Goldberg et al., 1980, 1984, 1993; Maguire et al., 1984). This distinction is maintained by Levinson et al. (2000) for clues; by J. W. Robinson and Roter (1999) for "psychosocial disclosure"; and by Butow, Dunn, Tattersall, and Jones (1995) and Butow et al. (2002) for cues. In contrast, the VR-MICS requires for all types of cues to be patient-initiated, whereas patients' expressions with the same emotional, social, or other content, when doctor-initiated, are coded as statements. Similarly, cues and concerns as defined by MIPS are patient-led (Fallowfield, Jenkins, Farewell, & Solis-Trapal, 2003). In contrast, medical concerns as defined by Beckman and Frankel (1984), Marvel et al. (1999), and J. D. Robinson (2001), or patients' diagnostic attribution to their symptoms as described by Lang et al. (2002), can be either unsolicited or solicited by the doctor.

Neither the rating systems (RIAS, Roter, 1993; Empathic Opportunity System; Bylund & Makoul, 2002) nor ad hoc definitions (Blue, Alexander, Chessman, Gilbert, & Mainous, 2000; Kaplan, Greenfield, & Ware, 1989; Kim et al., 2005; Street, 1991, 1992), seem to pay explicit attention to this dimension.

### Quantitative Studies Based on Association Measures

We collected 37 studies, including observational studies applying a quantitative approach, which were based on association measures (frequency, correlation, regression statistics). Fourteen of the studies were taken from the MEDLINE portion of the sample, whereas the remaining were taken from other sources.

### Frequency and Type of Cues and Concerns

A number of articles reported frequencies of cues and concerns. The frequency figures are likely to be affected by the rather different criteria for which utterances to count and how to count them. For example, some of the studies that use the RIAS defini-

Table 3  
Qualitative Studies

Author(s)	Sample, setting, measures	Design and analysis	Objective and main findings
Arborelius & Österberg, 1995	Nineteen videotaped consultations, where it was considered relevant for the physician to take up psychosocial issues.	Descriptive. Qualitative analysis based on a theoretical model.	Analysis of doctor–patient discussions about psychosocial problems. “Concern” was used as an indicator of outcome. In consultations where the patients expressed “concern,” the physician encouraged the patient by using open-ended questions, by following up the information received, and by having an empathic approach. In consultations where “concern” was not expressed, the physician often asked closed-ended or leading questions.
Suchman et al., 1997	21 primary care physicians and 23 general medicine patients; 11 transcripts and 12 videotapes. E-PE-O coding.	Descriptive qualitative analysis.	To formulate an empirically derived model of empathic communication in medical interviews by describing the specific behaviors and patterns of interaction associated with verbal expressions of emotion. Patients offer more potential empathic than empathic opportunities. In most interviews physicians missed these opportunities and returned to the preceding medical topic.
White et al., 1997	22 audiotaped outpatient consultations by family physicians. Four investigators analyzed and reanalyzed the tapes, individually and as a group.	Descriptive. Conversational analysis.	To develop an operational definition of the closure phase of the medical visit. Patient communication in the closing phase of the consultation included expression of emotion, but few new concerns were presented.
Epstein et al., 1998	17 internists, 26 of videotaped and transcribed patient–physician discussions about HIV risk. Investigators developed a coding scheme based on the first 10 visits. They then analyzed the additional interviews.	Descriptive. Descriptive statistics and simple correlations to show relations among demographic variables, interview behaviors, and levels of inquiry. Analysis of sequence of utterances to identify common patterns in the HIV-related discussions and to produce a model for conversational flow.	To describe the barriers to, and facilitators of, comprehensive HIV risk evaluation in primary care office visits. In most interviews the physicians did not pursue patients’ vague statements or ignored an explicitly stated concern.
Rogers & Todd, 2000	15 oncologists, 74 audiotaped consultations in outpatient clinics.	Descriptive. Qualitative content analysis, conversation analysis.	To investigate how patients’ problems and concerns are communicated to professionals during oncology treatment. Doctor-initiated questions were the predominant discourse feature, not only in initiating discussions but also in directing further talk. This limited information exchange is used alongside other communication tactics to identify the “right kind” of pain that may benefit from cancer therapy and to truncate talk of problems perceived to be outside of this specialist remit.
J. D. Robinson, 2001	Seven general practitioners and 48-audiotaped and transcribed consultations.	Descriptive. Conversation analysis.	The effect of different ways of closing consultations on the expression of patients’ previously unstated concerns. Patients are more likely to express additional concerns when physicians use the final-concern sequence. Physicians frequently verbally and non-verbally design final-concern questions in ways that manipulate patients to raise no additional concerns.

(table continues)

Table 3 (continued)

Author(s)	Sample, setting, measures	Design and analysis	Objective and main findings
Barry et al., 2001	35 general practice case studies (i.e., patient interviews before and after a consultation, doctor interviews about these consultations, and transcribed recordings of the consultations).	Descriptive. Discourse analysis.	To conduct an in-depth exploration of the expectations and perceptions of patients prior to consulting a general practitioner, to relate these to the behavior of general practitioners and patients in the consultation, and to describe the consequences with regard to any medicines prescribed.  Four communication patterns are described: Strictly medicine, mutual life world, life world ignores, life world blocked. The analysis supported the premise that increased use of the life world makes for better outcomes and more humane treatment of patients as unique human beings.
McCabe et al., 2002	Seven psychiatrists, 32 videotaped consultations.	Descriptive. Conversation analysis.	To investigate how doctors engage with patients with psychotic illness in routine consultations.  Patients actively attempted to talk about their psychotic symptoms. Physicians were reluctant to engage with patients' concerns about their symptoms.
Brown et al., 2002	16 oncologists, 16 videotaped consultations, 1 standardized patient.	Descriptive. Qualitative analysis by two trained raters.	To document oncologist responses to two extreme role presentations (active vs. passive patient) and to identify clinician strategies.  Helpful strategies, including active listening, conveying empathy, and responding to emotional cues were identified. Unhelpful strategies were also demonstrated.
Easter & Beach, 2004	Eight physicians (surgeons and medical and radiation oncologists), 16 videotaped and transcribed first outpatient visits of oncological patients.  Consensus identified patient expressions, labeled empathic opportunities.	Observational pilot study. Frequency counts; conversation analysis of two transcripts.	To produce assessment tools for core communication competencies in surgical education.  Only 38% of 160 empathic opportunities were met with an empathic connection by the professionals.
Salmon et al., 2004	21 general practitioners and 36 patients with medically unexplained symptoms. Analysis of transcribed audiotaped consultations to identify psychosocial cues (disclosure of psychosocial problems and/or questions or statements indicating a need for explanation).	Descriptive. Qualitative analysis.	To test the assumption that patients with unexplained symptoms do not provide the opportunity for discussion of psychological issues.  All but 2 patients provided psychosocial cues that were mostly ignored. By taking these opportunities to address psychological needs, general practitioners would avoid unnecessary symptom intervention.

Note. E-PE-O = empathic and potential empathic opportunity method.

tion of concerns counted concern as a separate category; in other studies, concerns were lumped with related RIAS categories, such as "asking for reassurance" or "psychosocial information" (see Table 4). Most studies reported the mean numbers of identified cues or concerns per interview, without reporting the total number of patient utterances per interview as a reference measure. Consultation length ranged from a very short and fixed observation period of the first 3 min in general practice (Goldberg et al., 1993)

to a mean of 30 min in oncology (Ford, Fallowfield, & Lewis, 1996) but was not always reported. Three studies reported mean cues/concerns per interview based on interviews with at least one cue/concern expression (Bylund & Makoul, 2002; Fallowfield et al., 2002; Levinson et al., 2000). Most other studies did not indicate whether consultations without cue/concern were included. However, interviews without patient cues, expressed concerns, or empathic opportunities seem to be frequent, with proportions com-

Table 4

*Terms and Definitions for Patients' Expressions of Negative Affect, Worries, and Concerns*

Maguire & Rutter, 1976; Maguire et al., 1984; Goldberg et al., 1980, 1984	<i>Doctor- or patient-initiated verbal cue:</i> reports of emotional distress; e.g., "I've been feeling low last week," <i>Nonverbal cue:</i> Manifestations of emotional distress (e.g., wringing hands, shaking foot).
Beckman & Frankel, 1984; Marvel et al., 1999	<i>Doctor- or patient-initiated medical concerns:</i> Patient's major reason for seeking care, chief complaint or current concern.
Davenport et al., 1987; Gask et al., 1987, 1988; Goldberg et al., 1993	<i>Doctor- or patient-initiated verbal cue:</i> Mentions of feelings, depression, anxiety, fear. "I can't cope"; "I feel sad"; "The pain's really getting me down" <i>Nonverbal cues:</i> - Movement cue (agitated, restless, demonstrative, gesticulating, immobile) - Vocal cue (monotonous, sighing, tense, strained, distressed, weeping, plaintive, whining, angry) - Postural cue (dejected, tense, on edge, gaze avoidance).
Kaplan et al., 1989	<i>Negative affect:</i> A broad spectrum of verbal and nonverbal behaviors indicating tension, impatience, misgivings, stammering, nervous laughter, anxiety, anger.
Street, 1991	<i>Affective expressiveness:</i> Utterances that express concerns, worries, or emotions.
Street, 1992	<i>Negative affect:</i> Verbal and nonverbal expressions of negative emotions (e.g., frustration, anger) worries, or concerns.
White et al., 1994, 1997	<i>Concern:</i> Introduction of a new problem, not previously discussed, during the closing moments of the medical interview.
Arborelius & Österberg, 1995	<i>Concern:</i> Patient's expression of what is most pressing — psychosocial issues other than the somatic symptoms.
Maguire, Booth, et al., 1996; Maguire, Faulkner, et al., 1996	<i>Booth and Maguire Rating System (Booth &amp; Maguire, 1991)</i> <i>Verbal cue:</i> Utterance with some level of psychological depth (Level 1 = a hint of feelings; 2 = feeling can be identified; 3 = feelings clearly expressed). <i>Significant information:</i> Utterances, including perceptions of disease or prognosis or adverse sequel of cancer and treatment such as severity of pain, worry about prognosis or concerns about loneliness.
Eide et al., 2003, Eide, Quera, et al., 2004; Ford et al., 1996; Hall et al., 1996; Hall & Roter, 1995; Ishikawa et al., 2002 (RIAS category "shows concern or worry" lumped with "gives psychosocial information" and "asks for reassurance"); Langewitz et al., 2003 (RIAS category "shows concern or worry" lumped with "asks for reassurance"); Timmermans et al., 2005; Van den Brink-Muinen & Caris-Verhallen, 2003; Van Dulmen et al., 1997, 2003; Van Dulmen & van den Brink-Muinen, 2004; Van Dulmen & van Weert, 2001	<i>Roter Interaction Analysis System (RIAS; Roter, 1993)</i> <i>Shows concern or worry:</i> A statement or nonverbal expression indicating that a condition or event is serious, worrisome, distressing, or deserving of special attention and of particular concern right now during the medical interview. Voice, tone, intonation, or verbal content may disclose worries, concerns, stress, nervousness, personal preferences, or uncertainties, which are of immediate concern. Includes negative emotional description of the medical situation, statements that ask for pardon, self-criticism. <i>Asks for reassurance:</i> Questions that convey the need or desire to be reassured or encouraged. Voice tone, intonation, and emotional content may be of significance. <i>Gives psychosocial information:</i> Statements related to psychosocial concerns or problems (e.g. stress, feelings, and emotions; general state of mind; philosophical outlook; values and beliefs).
Eide, Frankel, et al., 2004; Suchman et al., 1997	<i>Empathic and Potential Empathic Opportunity Method (E-PE-O; Suchman et al., 1997)</i> <i>Empathic opportunity:</i> A direct and explicit description of an emotion by the patient; also defined as emotional concerns by the authors. <i>Potential empathic opportunity:</i> a patient statement from which the clinician might infer an underlying emotion that has not been clearly expressed. Indirect statements that hint at the presence of an emotion, also defined as clues by the authors.
White et al., 1997	New problems and expressions of emotion in the closing moments of the medical visit.
Epstein et al., 1998	<i>Concern:</i> HIV-related concerns expressed during the visit. HIV-related concerns are distinguished from patient's emotional expressions.
J. W. Robinson & Roter, 1999	<i>Doctor- or patient-initiated psychosocial problem disclosure</i> during the preceding 2 weeks, defined as: - Distressing reports of feelings or moods, such as depression, low mood, frequent crying, anxiety, panic, worry, tension, nervousness, stress; - Problems, concerns or losses involving important relationships; - Evaluation or treatment for mental health problems.
Rogers & Todd, 2000	<i>Concern:</i> "pain talk" during oncology treatment.

(table continues)

Table 4 (continued)

Levinson et al., 2000	<p><i>Doctor- or patient-initiated verbal clue:</i> a direct or indirect comment that provides information about any aspect of a patient's life circumstances or feelings. Clues offer a glimpse into the inner world of patients, offer empathic opportunities and personal connection.</p> <ul style="list-style-type: none"> <li>- <i>Emotional clue:</i> Associated with emotions, or seeking support from doctor;</li> <li>- <i>Social clue:</i> About patient's life (all types of social circumstances not associated with emotions).</li> </ul>
Blue et al., 2000	Patient's expressed emotions.
Del Piccolo, Mead, et al., 2000, 2005; Goss et al., 2005; Zimmermann et al., 2003	<p><i>Verona Medical Interview Classification System (VR-MICS; Del Piccolo et al., 2000)</i></p> <p><i>Patient-initiated verbal cue:</i> Any expression introducing new contents by variations in voice quality, content, or speech and indicating that in the consultation there is still something not explored or not dealt with enough. Refers to expectations, ideas, feelings, symptoms, somatic, or emotional worries experienced by the patient.</p> <p><i>Statement:</i> 1. Expression solicited by the doctor's questions or comments, 2. Yes/no answer to the doctor's questions; 3. Developing a theme previously introduced.</p> <p><i>Main content areas for cue and statement:</i> 1. Psychological (emotions; worries; feelings; cognitive impairments such as memory, concentration, and attention; and attempts to describe moods with metaphors); 2. Social (events or situations referring to work, finance, family, interpersonal relationships); 3. Lifestyle; 4. Illness related; 5. Impact of illness/symptoms on daily life.</p>
J. D. Robinson, 2001	<i>Doctor- or patient-initiated concern:</i> Patient's agenda topic of discussion.
Barry et al., 2001	<i>Concern:</i> Voice of the life world, patient's contextually-grounded experiences of events and problems in her life.
McCabe et al., 2002	<i>Concern about symptoms:</i> Psychotic patients' active attempt to talk about the content of their psychotic symptoms by asking direct questions, repeating their questions and utterances, and producing these utterances in the concluding part of the consultation.
Brown et al., 2002	<p><i>Cues suggesting anxiety:</i></p> <ul style="list-style-type: none"> <li>- Nonverbal: e.g., hand gestures;</li> <li>- Verbal: e.g., many questions, repeated checking of understanding with doctors, interruptions of doctor talk.</li> </ul> <p><i>Cues suggesting depressive states:</i></p> <ul style="list-style-type: none"> <li>- Nonverbal: e.g., restricted body movement and posture;</li> <li>- Verbal: e.g., little spontaneous speech, simple yes/no answers, asks few or no questions.</li> </ul> <p><i>Emotional cues:</i> emotional issues emerging during the consultation.</p>
Butow et al., 2002	<p><i>CN-LOGIT Interaction Analysis System (Butow et al., 1995)</i></p> <p>Patient-initiated verbal clue: a statement in a non-question-asking form that is given by the patient to signal a need for information or emotional support.</p> <ul style="list-style-type: none"> <li>- Emotional cue, e.g., "I get so upset sometimes that I can't stop crying." Emotional cues comprehend concerns.</li> <li>- Informational cue, e.g. "I really don't know much about the different treatments."</li> </ul> <p>Intensity of the cue is defined on a 3-point scale.</p>
Fallowfield et al., 2002, 2003; Ford & Hall, 2004; Jenkins & Fallowfield, 2002	<p><i>Medical Interaction Process System (MIPS; Ford et al., 2000)</i></p> <p>Cues can exist separately or in conjunction with concerns. When coded separately, cues tend to be more subtle than concerns and are seldom overt requests for a response from the clinician.</p> <p><i>Doctor- or patient-initiated verbal cue</i></p> <ul style="list-style-type: none"> <li>- Cue to inform, e.g. "I wasn't told very much about what is wrong with me."</li> <li>- Cue for reassurance/information on side effects, e.g., "I fear the treatment will make me ill."</li> </ul> <p>Cues may relate to a series of concerns, e.g., "I'm worried about this pain. It shoots up my arm and I think I'm having a heart attack." Implies an overt request for a response from the clinician.</p>
Lang et al., 2002	<i>Doctor- or patient-initiated concern:</i> fears, worries, and diagnostic attributions to symptoms, e.g., "I fear it might be cancer."
Bylund & Makoul, 2002	<p><i>Empathic Communication Coding System (ECCS; Bylund &amp; Makoul, 2002)</i></p> <p><i>Empathic opportunity:</i> specific statements (of emotion, progress or challenge) which allow for an empathic response by the physician.</p> <ul style="list-style-type: none"> <li>- Statement of emotion: patient describes him/herself currently feeling an emotion (affective state of consciousness in which joy, sorrow, fear, hate, or the like is experienced).</li> <li>- Statement of progress: the patient states or describes a positive development.</li> <li>- Statement of challenge: the patient states or describes a negative effect of a physical or psychosocial problem.</li> </ul>

Table 4 (continued)

Easter & Beach, 2004	<i>Patient-initiated empathic opportunity</i> : patient initiated actions that call for recognition or action (empathy, understanding, or support) from the caregiver.
Salmon et al., 2004	<i>Cues. Opportunities presented by the patient as:</i> <ul style="list-style-type: none"> <li>- <i>Explanation</i>: Explicit request; statements of uncertainty or worry; proposing of serious illness; proposing normalizing explanations.</li> <li>- <i>Explicit referring to emotional or social problems</i>: Links symptoms to life stress; reports of emotional problems and depression; somatic metaphors of mood.</li> </ul>
Heaven & Green, 1999	<i>Medical Interview Aural Rating Scale (MIARS)</i> <i>Patient-initiated cue</i> : Patient expression (content), which contains a hint (is or may be important or distressing or cause of concern) or an explicit emotion. Emotion is rated using levels 1–3. <i>Patient-initiated concern</i> : Area of concern for which there is evidence of current (in the past seven days) importance (emotional levels 2 or 3). Concerns are broad in content. There may be a number of different cues which relate to one concern area.
Kim et al., 2005	<i>Informational and emotional cue, including RIAS defined concerns</i> : Verbal expression indicating a need or desire for information or an emotional response, e.g., <ul style="list-style-type: none"> <li>- Direct statement of concern (“I’m worried that the pills will dry up my breast milk”);</li> <li>- Questions regarding technical matters (“How safe are the pills?”);</li> <li>- Description of a personal experience or situation.</li> </ul>
Rimondini et al., 2006	<i>Verona Psychiatric Interview Classification System (VR-PICS)</i> A modified version of the VR-MICS which preserves the definitions of cue and statements. To take into account the peculiarities of the psychiatric interview, the content of <i>psychological cue/statement</i> is subdivided into expressions concerning <ul style="list-style-type: none"> <li>- Emotion/feelings;</li> <li>- Cognitive functioning (e.g. memory, attention);</li> <li>- Symptomatic behaviors (e.g. compulsive checking).</li> </ul>

prising between 33% and 57% in primary care and surgery (Bylund & Makoul, 2002; Levinson et al., 2000; J. W. Robinson & Roter, 1999) and between 23% and 67% (Butow et al., 2002; Ford & Hall, 2004) in oncology settings.

Whenever possible, for each of the studies with frequency figures, Table 1 reports proportions and means (the ratio between the frequency of cues/concerns and the mean number of patient utterances per interview), as well as the mean length of the interview to which such figures refer. Missing figures of either mean proportions or means of cues/concerns per interview could be calculated for some studies where patients’ total number of utterances was indicated (Eide, Frankel, et al., 2004; Ford et al., 1996).

The differences in reported frequencies of cues and concerns reported in Table 1 cannot be attributed entirely to the different concepts and definitions of cues and concerns but are likely to be affected by other factors. The first factor relates to the length of consultations, which in oncological and gynecological consultations, with few exceptions (Ishikawa et al., 2002; Jenkins & Ford et al., 1996), tends to be about twice as long as in general practice and surgery and therefore potentially accounts for a greater number of cues/concerns. The second factor, connected with the first, is the different medical settings in which the studies were conducted (general practice, oncology, etc.) and the different degree of illness severity that characterizes them. Greater severity might be related to greater emotional vulnerability and to a higher manifestation of cues and concerns. A third factor concerns the time frame used. For example, RIAS defines concern by a time frame, where occurrence of concern is restricted to the consultation “right now,”

MIPS does not specify the time frame for “current” concern, and VR-MICS considers no time frame at all for cues. Finally, different statistical analyses were used (from univariate to multilevel modeling approaches), and the measures of frequency were variously expressed as means, odd ratios, or percentage proportions, often with different denominators referring to the whole interview or parts of the interview, to patient or doctor samples.

The differential effects of these factors on the reported frequencies of cues/concerns are difficult to disentangle, and the following observations remain in great part debatable.

Disregarding the possible effects of these factors and putting aside cues with other than emotional or psychosocial content, we find for all verbalized emotional cues and concerns, however defined and wherever observed, a mean frequency range between 1 and 7 per consultation. This suggests that patient utterances that in various ways signal or express some worries—in comparison with other patient expressions such as questions, information about symptoms, or illness—are rare events in medical consultations.

One might expect a higher frequency of emotional cues as hinted emotions, compared with concerns as fully expressed emotions, particularly in consultations by physicians untrained in patient-centered interview skills who prevailed in the reported studies. Given the many incompatible definitions of these concepts so far, this does not seem to be the case. The frequency for emotional cues (however defined) ranged between a mean of 1 and 5 (Bylund & Makoul, 2002; Davenport et al., 1987; Del Piccolo et al., 2000; Fallowfield et al., 1996; Jenkins & Fallowfield, 2002; Levinson et al., 2000); those for concerns (however defined) ranged between a mean of 1 and 4.8 (Bylund & Makoul, 2002;

Eide, Frankel, et al., 2004; Ford et al., 1996; Ishikawa, Takayama, Yamazaki, Seki, Katsumata, & Aoki, 2002; Marvel et al., 1999; van Dulmen & van Weert, 2001; Van Dulmen, Verhaak, & Bilo, 1997; Timmermans et al., 2005). A slightly higher frequency peak with a mean of 6.5 “affective expressions” has been reported for parents of pediatric patients (Street, 1991). One single study stands out with an extremely high proportion of cues and “significant content of current interest” expressed by simulated cancer patients in 33% to 45% of utterances per interview (Maguire, Booth, et al., 1996). It is difficult to know whether these high numbers were due to the wide definitions of target criteria, which included physical and social issues, or were due to the fact that more than half of the interviewers were nurses or to the use of simulated patients.

Patient-initiated clues appear to be about three times more frequent than doctor-initiated cues (Levinson et al., 2000). The opposite emerged for patients’ concerns in terms of “psychosocial disclosure” (J. W. Robinson & Roter, 1999), “diagnostic attributions” (Lang et al., 2002), and medical concerns (Marvel et al., 1999). When solicited by the physician, the proportion of psychosocial disclosure increased by 24% (J. W. Robinson & Roter, 1999), twice as many patients expressed their ideas about their symptoms (Lang et al., 2002), and the mean number of medical concerns per interview rose by 50% (Marvel et al., 1999).

Different settings and different target populations played a less important role than expected, with a similar spread of mean frequencies for cues/concerns in general medicine of 1.3 and 6.8 (Bylund & Makoul, 2002; Davenport et al., 1987; Del Piccolo et al., 2000; Levinson et al., 2000; Marvel et al., 1999; Street, 1991, 1992; Van Dulmen et al., 1997), compared with mean frequencies of 1.5 and 6.5 in oncology (Butow et al., 2002; Eide, Frankel, et al., 2004; Fallowfield et al., 2002; Ford et al., 1996; Ishikawa et al., 2002; Jenkins & Fallowfield, 2002; Timmermans et al., 2005).

Some studies considered different contents of cues and allowed comparison of the frequency of emotional and other cues occurring per consultation. Nonverbal cues were three times as frequent as verbal emotional cues (Davenport et al., 1987). Emotional clues occurred more often than clues regarding social worries (Levinson et al., 2000), but, compared with informational (Butow et al., 2002) and illness-related cues (Del Piccolo et al., 2000), emotional cues were only half as frequent.

Future comparative research, in addition to shared core criteria for cue/concern definitions, will require greater attention to confounding variables and to uniformity in reporting descriptive frequency data expressed in conventional and easily comparable statistical terms.

### *Emotional Distress*

Multiple studies have demonstrated that the number of cues expressed by primary care patients increased significantly with patients’ emotional distress in terms of the General Health Questionnaire (GHQ). Davenport et al. (1987) observed a mean number of verbal cues per interview of 0.65 for low and 1.5 for high GHQ-28 scorers. Regression analysis showed that verbal compared with nonverbal cues made the strongest contribution toward the determination of the GHQ score. Del Piccolo et al. (2000) also found that primary care patients with GHQ-12 scores above 2 gave more cues per interview than did their matched controls (GHQ-12 score < 3; mean proportion of all cues 11.8% and 8.2%, respec-

tively; of psychosocial cues, 3.7% and 1.7%, respectively). Distressed patients, recognized as such by their general practitioners, gave more psychosocial cues than those not recognized (mean proportion of 4.9% and 2.2%, respectively). The findings of a greater proportion of VR-MICS-defined cues in GHQ positive, compared with GHQ negative, cases was confirmed also for United Kingdom primary care consultations (Del Piccolo, Mead, et al., 2005). These results parallel observations by J. W. Robinson and Roter (1999), who found that in general practice patients with GHQ scores above threshold, the odds for disclosure of psychosocial problems increased with increasing GHQ scores. Likewise, Hall, Roter, Milburn, & Daltroy (1996) who reviewed four studies with meta-analytic procedures found that patients with mental health problems presented significantly more emotionally laden statements than did patients without these problems.

### *Physician Communication Characteristics Related to Cue and Concern Emission*

Davenport et al. (1987) divided their sample of general practitioners into those good at detecting emotional distress in their patients and those lacking such ability. This division was based on previously assessed detection rates. The authors showed that distressed patients, when interviewed by general practitioners competent in distress detection, offered more verbal and nonverbal cues per interview than when interviewed by the less competent doctors (means of 19.2 and 10.8, respectively). This finding was later repeated by Goldberg et al. (1993) who also showed that general practitioners not good at recognizing distress adopted behaviors that somehow seemed to suppress patients’ expression of cues. Physician behaviors related to a reduction in the number of cues were questions on physical issues and doctor-led questions. Eight or more such behaviors, compared with fewer than seven, was associated with a drop of 70% of cues for physical issue questions and a drop of 40% for doctor-led questions. Physician behaviors positively associated with cue emission included directive psychological questions, questions that were based on what the patient had said before (patient-led), and empathic comments.

Patients’ disclosure of “significant information” (Maguire, Faulkner, et al., 1996) correlated significantly with the number of physicians’ questions with a psychological focus ( $r = .38$ ), guesses at how patients might feel (educated guesses;  $r = .19$ ), clarifications of patient responses about psychological aspects ( $r = .34$ ), open directive questions ( $r = .14$ ), and empathic statements ( $r = .16$ ). Mention of feelings (all utterances rated 2 on the emotional intensity rating scale) was inhibited by asking questions with a physical focus ( $r = -0.15$ ), clarifying physical aspects ( $r = -0.24$ ), and giving advice ( $r = -0.17$ ).

Using multilevel modeling techniques, Del Piccolo et al. (2000) found that cue emission was negatively associated with active patient-centered interviewing techniques (clarifying questions, checking, summarizing) in GHQ-positive as well as in GHQ-negative patients, and with closed-ended questions on medical issues in GHQ-positive patients only. In contrast, cue emission in both groups of patients showed a positive association with closed questions on psychosocial issues.

Street (1991) reported significant correlations between patients’ expressions of concerns and the amount of information on treatment received from physicians ( $r = .32$ ) and physicians’ use of

partnership building expressions and agreements with the patient's opinion ( $r = .73$ ). A similar relationship (Street, 1992) emerged in computing partial correlations based on analyses of covariance where the communicative behavior of parents of pediatric patients was included as a predictor variable of the communicative behavior of the physician: Parents' expressions of negative affect were significantly related to an increase of information giving and of provision of reassurance and support by the physician ( $r = .23$ ). Such a relationship was not confirmed in a second analysis where physicians' communication behavior was treated as a predictor and that of parents as a dependent variable, suggesting that parents' expressions of feelings affected physician behavior rather than the other way round.

Not surprisingly, continued queries for additional concerns (defined as problems for which patients consulted) were related to an increase in concerns ( $r = .42$ ; Marvel et al., 1999). Late-arising unsolicited concerns regarded mostly interviews with no solicitation at all (34.9%), and, to a lesser extent, interviews with solicitations (14.9%). When physicians completed inquiring about patients' concerns in the opening, late-arising concerns occurred in only 15.8% of interviews compared with 22.7% of interviews with uncompleted openings. A similar percentage of 21% of interviews with newly arising problems in the closure phase was observed by White, Levinson, and Roter (1994). Late-arising concerns were associated with fewer orienting statements (White et al., 1994) and with physicians' closed ended questions, lack of solicitation, and focusing statements (Marvel et al., 1999).

### *Cue Recognition, Missed Cues and Concerns*

A cue or concern is defined as "missed" or as "a missed opportunity" when followed by a response by the physician regarded as inadequate or lacking salience. The following are considered inadequate responses: postponing, interrupting (Butow et al., 2002), avoiding, discouraging discussion about emotional concerns, inadequate acknowledgement, thoughtless humor, denial of concerns, termination of the discussion (Bylund & Makoul, 2002; Levinson et al., 2000), or information, advice, questions, and instructions (van Dulmen, Nübling, & Langewitz, 2003). Adequate responses by which the cue or concern expression is picked up include clarifying or commenting on the cue (Gask et al., 1987, 1988; Goldberg et al., 1980), psychosocial probing, adequate reassurance, empathy or open cue-based questions (Jenkins & Fallowfield, 2002), acknowledgement of feelings, encouragement of feelings or supportive statements (Levinson et al., 2000), or showing concern, facilitations, empathic reflections, and reassurance (Van Dulmen et al., 2003).

Senior general practitioners, each interviewing a simulated patient before a communication skills training, missed 53% of verbal cues (Gask et al., 1987). A similar proportion of 60% was missed by general practice trainees interviewing real patients before participating in a communication training course (Gask et al., 1988). The general practitioners in Levinson et al.'s (2000) study missed 79% of patient-initiated emotional clues. This was due, in 77% of clues, to a failure to acknowledge patients' feelings; in 10% of clues, to terminating responses; and in 13% of clues to denial and thoughtless humor. In surgical consultations, the authors observed a similar proportion of missed clue opportunities, again mainly due to the lack of the acknowledgement of feelings (75%).

Similar findings emerged in oncology settings. Butow et al. (2002) found that 28% of informational and 72% of emotional cues were missed because they were ignored, postponed, or interrupted. In 38% of the consultations, all informational cues were picked up, whereas in only 11%, all emotional cues were acknowledged and responded to adequately. Fallowfield et al. (2002) and Jenkins and Fallowfield (2002), respectively, found adequate responses to no more than 48% and 44% of cues observed in their samples of oncology consultations.

In psychiatry, three early studies investigated the interviewers' ability to pick up the verbal cues given by psychiatric patients. The great majority of senior medical students (76%) who performed a history-taking exercise failed to pick up more than a fraction of patients' verbal cues about the nature of their problem, and only 4% were able consistently to detect and use the cues offered (Maguire & Rutter, 1976). Psychiatry trainees, each interviewing a simulated patient before initiating a training course, missed about 70% of all verbal cues (Maguire et al., 1984), compared with 53% and 60% of such cues that were missed in consultations with real patients conducted by senior psychiatrists (Goldberg et al., 1984). This study also showed that nonverbal cues of feelings had the lowest chance (6%) of being picked up.

### *The Impact of Communication Skills Training on the Detection and Handling of Cues and Concerns*

In the very first study on the effect of training on desirable interview behavior and missed cues, Goldberg et al. (1980) found that after the training general practitioner trainees missed, on average, significantly fewer verbal and nonverbal cues per interview (2.3) than before the training (7.7). The efficacy of sensitivity training in general practitioner trainees and senior general practitioners to "affect-charged" comments and nonverbal cues was confirmed by Gask et al. (1987, 1988), who found a reduction of missed cues of 12% for trainees and of 20% for senior general practitioners. Psychiatry trainees showed no improvement in picking up cues from simulated patients (Maguire et al., 1984), with a percentage of missed verbal cues for all doctors of about 70% before and after training.

A group of oncologists increased cue responses from 43% prior to a training to 57% after the training. Compared with a control group, the odds of responding to cues were 1.46 times greater for those who had attended the training (Fallowfield et al., 2002). The positive effect of this training was also confirmed in terms of the proportion of consultations with one or more adequate responses, which was significantly greater for the course-attending group (52%) than for the control group (32%) (Jenkins & Fallowfield, 2002).

Physicians and nurses involved in cancer care improved their ability to identify patients' significant current problems after a workshop: 70% of the participants were able to identify more than half of the current problems of simulated cancer patients, compared with 44% before the workshop (Maguire, Booth, et al., 1996).

### *Cue and Concern Expressions and Outcome*

*Patient satisfaction.* Satisfaction with the medical consultation may depend on the opportunity given to, or taken by, the patient to

express cues and concerns as well as on how physicians respond to such expressions. No study appeared to have examined the first issue, with the exception of Bertakis, Roter, and Putnam (1991), who found a positive relationship between patient talk regarding "psychosocial topics" in a broad sense and patient satisfaction. Butow et al. (2002) have explored the second issue (i.e., are patients who receive adequate responses more satisfied than those who do not?). The authors assessed the satisfaction of oncology patients with information received, the communication skill of the physician, and the level of patient participation. A response to informational cues was defined as adequate if given immediately and covering the relevant cue content, whereas an adequate response to emotional cues had to address feelings. The satisfaction scores were unaffected by the physicians' response to informational as well as emotional cues. These findings raise the problem of satisfaction questionnaires, which are known to be positively skewed, particularly in medical settings and thus are not sensitive enough to measure dissatisfaction.

In the educational context of administrations of the Objective Structured Clinical Examination (OSCE), scores on the Standardized Patient Satisfaction Questionnaire obtained from the simulated patients of four OSCE stations showed a significant although moderate correlation ( $r = .36$ ) with faculty observer ratings of the students' skill in responding to patients' emotions (Blue et al., 2000). This skill was evaluated on 5-point scales and regarded items such as conveying warmth and acceptance of the patient, reflecting and legitimizing patients' emotions, and forming a supportive partnership.

*Anxiety.* How oncologists responded to cues did not affect the state anxiety of their patients assessed (a) immediately after the consultation and (b) 2 weeks later, controlling for baseline levels (Butow et al., 2002).

*Health outcome.* Despite evidences accumulated in literature (Putnam & Lipkin, 1995), which demonstrates that a patient-centered interviewing style may affect health outcome, no study could be retrieved that focused specifically on cues and concerns. However, Kaplan et al. (1989) showed that in a sample of chronically ill patients, the verbal and nonverbal expressions of tension, impatience, strain, stammering, nervous laughter, frustration, anxiety, or anger were significantly associated with better functional status and subjective evaluation of health at follow-up, correlating .30 with overall health ratings,  $-.39$  with number of health problems, and  $-.45$  with functional limitations. Moreover, expression of "negative affect" showed significant correlation coefficients with blood glucose level in diabetes patients ( $r = -.31$ ), with blood pressure in hypertension patients ( $r = -.49$ ), and with symptom experience over the course of chemotherapy in breast cancer patients ( $r = -0.39$ ).

### Other Findings

*Gender and age.* Few studies specified patient gender or age in their reports on cues and concerns. Bylund and Makoul (2002) found no difference in the number of empathic opportunities created by male and female standardized patients in internal medicine consultations. However, female "patients" created more emotionally intense empathic opportunities than did male "patients," as shown by a mean intensity score on a scale from 1 to 5 of 3.4 compared with that of 3.1 for males, a modest but significant

difference. Also Timmermans et al. (2005) observed no difference in the number of RIAS-defined concerns between male and female cancer patients. In contrast, female oncology patients expressed a greater number of emotional cues (Butow et al., 2002) and expressions in terms of the combined RIAS categories Concern, Asking Reassurance, and Psychosocial Information than did their male counterparts (Ishikawa et al., 2002). These last results parallel previous observations (Hall & Roter, 1995) of a greater amount of emotionally charged talk by female, compared with male, patients in routine medical visits. Also younger age emerged in a multivariate hierarchical model as significantly associated with a greater number of emotional cues (Butow et al., 2002).

Physician gender does not appear to contribute to patient expressions of concern. A meta-analytic review of studies that looked at the relationship between physician gender and patients' statements of concern, worry, and feelings showed that physician gender did not significantly affect such expressions in gynecological and general medicine patients (Hall & Roter, 2002).

*Use of time.* Consultations by general internists were 35% longer when they contained at least one empathic opportunity compared with consultations without them (25 vs. 18 min; Bylund & Makoul, 2002). However, responding adequately to patients' expression of concerns is cost effective, as shown by Levinson et al. (2000). The consultation length of primary care and surgery interviews was significantly longer when doctors missed one or more opportunities to respond adequately to patient clues (mean length of 20 and 14 min, respectively), compared with those consultations in which there was at least one positive response to patient clues (17.6 and 12.5 min, respectively).

Butow et al. (2002) confirmed the association between duration of consultations and the percentage of informational cues to which doctors responded. Multivariate hierarchical modeling, controlling for informational cues given, showed that the shorter the duration of oncology consultations, the higher the percentage of informational cues responded to by the doctor. For example, consultations of those oncologists who responded to more than 90% of informational cues were on average about 4 min shorter compared with those of oncologists who responded to 90% or less (17 vs. 21 min, respectively). The authors showed also that patients whose first informational cue was not responded to were more likely to emit a greater number of informational cues subsequently than patients whose first informational cue was responded to. No such associations were found for emotional cues.

### Studies Applying Sequence Analysis

Sequence analysis studies, other than association studies, allow an understanding of the temporal relationship between events, focusing on interactions in terms of what precedes and follows a target behavior (in this case, the presence of a cue or a concern or a specific doctor expression). The sequence may be limited to two interactions or more and can go forward (lead) or backward (lag), covering several behaviors in both directions. Sequences may be time based (the amount of time a particular code lasts), interval based (the proportion of intervals, fixed in length, in which the code of interest occurs), or event-based (how often and in what order codes occur, without considering how long they last; Bakeman & Quera, 1995; Mazzi, Del Piccolo, & Zimmermann, 2003).

The 10 studies reported (Table 2) are all event-based. Three studies (Goss, Mazzi, Del Piccolo, Rimondini, & Zimmermann, 2005; Rimondini et al., 2006; Zimmermann, Del Piccolo, & Mazzi, 2003), adopted the VR-MICS coding definition of cue or that of its adapted version for psychiatry (Verona Psychiatric Interview Classification System; VR-PICS). The remaining studies, except one (Kim et al., 2005), used the RIAS coding definition of *concern*. Five studies were conducted in a specialist setting (Eide, Quera, & Finset, 2003; Eide, Quera, Graugaard, & Finset, 2004; Langewitz, Nübling, & Weber, 2003; Rimondini et al., 2006; Van Dulmen et al., 2003), four in general practice (Goss et al., 2005; Van den Brink-Muinen & Caris-Verhallen, 2003; Van Dulmen & van den Brink-Muinen, 2004; Zimmermann et al., 2003), and one in a family planning center (Kim et al., 2005).

### *Physician Responses Subsequent to Patient Cues and Concerns*

Zimmermann et al. (2003) analyzed Lag 1 doctor-patient transitions to examine general practitioners' immediate responses to patient cues. Nonmedical cues (references to psychosocial or life episodes) represented 5.4% of all consultation utterances and were followed by a higher than chance probability of facilitation ("Hmm" and echoing, 32.4%), closed and open psychosocial questions (11.6% and 7.1%, respectively), and psychosocial information (5.8%). As conversation rules might predict, closed medical questions and medical information (13.2% and 17.1%, respectively) were less frequent than expected by chance.

Van Dulmen et al. (2003) showed that the immediate responses of gynecologists to patient concerns were adequate in 60.9% of expressed concerns and consisted mainly of facilitations, such as agreement or understanding ("yeah," "right," "I see," "really"), given to 47.2% of all concerns. The most frequent inadequate response was to give information (17.3%). Affective responses such as empathic statements or reassurance were rare (3.5% and 3.1%, respectively). A 3-day residential communication training did not change these responses, which were stable over time and highly variable among the participants. Similar findings were obtained in a study of primary care consultations (Van Dulmen & van den Brink-Muinen, 2004). The prevailing response to concerns at Lag 1 consisted in expressions of agreement and paraphrases (47.6% and 23.6% of all visits, respectively). Empathic responses to concerns were observed in only 13.5% of visits.

Van den Brink-Muinen and Caris-Verhallen (2003) explored the immediate (Lag 1) and delayed occurrence (Lag 2 to Lag 5) of adequate responses adopted by general practitioners after a patient concern. Adequate expressions were either empathic responses or facilitations, such as agreements, reassurance, expressions of understanding, and paraphrasing. The 111 concerns expressed in the sample of selected consultations received 136 responses, 50% of which were given in the first lag, 31% within Lags 2 and 3, and 19% within Lags 4 and 5. Additionally, in this study, facilitations prevailed (75%). About half of the 29 empathic responses occurred in the first lag. On the basis of these findings, Van den Brink-Muinen and Caris-Verhallen (2003) suggested that the best cut-off point of sequential doctor expressions for analyzing adequate responses should be Lag 3.

Kim et al. (2005) described family planning consultations in Mexico and confirmed the low frequency of empathic responses to

patients' emotional cues within three subsequent lags corresponding to doctors' conversational turns. The doctors directly addressed feelings in only 2% of their responses to all 143 cues. The most common responses to cues at Lag 1 were facilitations ("Hmm" or paraphrasing) (42%), information giving (34%), and asking questions (18%), and at Lag 2 and Lag 3, giving information (36% and 37%), asking questions (28% and 34%), facilitations (19% and 23%), and orienting statements (10% and 14%).

Eide et al. (2003) investigated the behavior of oncologists within four lags subsequent to 25 patient concerns and questions for reassurance, lumped into one category: concern. At Lag 1 and Lag 3, the only significantly associated behavior of male doctors was reassurance (4 observed vs. 1.1 expected by chance), whereas at Lag 2, reassurance as well as facilitations were more frequent than expected by chance for both male (4 and 11, respectively) and female doctors (7 and 21, respectively). At Lag 4, no significantly associated communication behavior was observed. In a second paper, in which a sample of hematological consultations was added to the oncology consultations, Eide, Quera, and Finset (2004) observed that one and two lags after concern expressions, both types of specialists more often than expected used minimal "encouragers," such as agreement ("right," "go on") or facilitating "back channel" responses ("Mmmh," "ah"). Concerns decreased the likelihood of medical information given by oncologists at Lag 1 (4 versus 8.6 expected), paralleling the finding by Zimmermann et al. (2003) of a decrease of medical information after psychosocial cues.

In a study with unannounced standardized patients, Rimondini et al. (2006) assessed how psychiatric residents responded to different emotional expressions defined by the VR-PICS categories (psychosocial cue, psychological statement, and opinion referring to psychological contents or problematic social issues). Lag 1 sequence analyses showed that such expressions received 55% of all patient-centered and 26% of all doctor-centered interventions, defined by closed-ended questions, information, and instruction giving. The most frequent patient-centered intervention was passive listening, consisting mainly in facilitations such as "Hmm" (57%), followed by active listening interventions, such as open-ended questions, checking, summarizing and patient-orienting statements (34%), and emotion focusing (8.1%). Adopting doctor-centered interventions as reference category, the physician responses that significantly increased after patients' emotional expressions were passive listening (odds ratios between 2.4 and 4.2), emotion-focusing interventions (odds ratios between 3.3 and 1.7), and active listening (odds ratios between 1.4 and 1.7).

### *Physician Behaviors that Influence the Likelihood of Subsequent Cues and Concerns*

Zimmermann et al. (2003) showed that facilitations were the only verbal physician behavior that significantly contributed to increased patient cues at Lag 1 (26%). Cues were less frequent than expected by chance when preceded by medical information (7.9%) and by closed or open questions referring to different content than the cue (e.g., the likelihood of psychological cues was 1.7% after closed medical questions and 6.3% after closed psychosocial questions). In this study, open-ended and closed-ended psychosocial questions showed a similar likelihood and no significant effect on subsequent psychosocial cue offers. This last find-

ing contrasts with that of Langewitz et al. (2003) for RIAS-defined concerns. These authors analyzed Lag 1 sequences in a randomized controlled intervention study with standardized patients. Only 0.4% of all closed questions elicited patient concerns compared with 11.6% of all open questions. However, the authors did not consider the different content of physicians' open questions nor differentiate between doctor- and patient-initiated concerns, whereas the VR-MICS definition of cue applied by Zimmermann et al. (2003) excluded all doctor-initiated patient expressions.

In a study on patients' participation in the information-giving process in general practice consultations, Goss et al. (2005) examined the likelihood of patient cues at Lag 1 after general practitioners had given information. They found that 31% of all cues (including all cue categories considered by the VR-MICS) occurred after a provision of information. A separate examination of each of the three different types of information considered by the VR-MICS coding categories showed that instructions and recommendations reduced the likelihood of subsequent cues to 17.2%, compared with 33% and 25.8% after psychosocial information and information on medical issues, respectively.

Eide, Quera, and Finset (2003; Eide, Quera, Graugaard, & Finset, 2004) investigated the association between patients' expressed concerns at Lag 0 and the preceding behaviors of oncologists and hematologists within four lags. In the first study, oncologists preceded patients' expression of concern more often than expected with silence (Lag 1), and two to four lags before patients' expressed concern with facilitation and reassurance (Eide et al., 2003). In the second study (Eide, Quera, Graugaard, & Finset, 2004), only expressions up to and including Lag 3 were significantly associated with subsequent concerns: Both oncologists and hematologists, more often than expected by chance, used silence at Lag 1 and facilitations at Lag 2).

### *Qualitative Studies*

The qualitative approach to cues and concerns through conversational or content analysis helps broaden understanding of the general atmosphere of the consultation in which such expressions may emerge. Eleven such qualitative studies were identified (Table 3). Seven studies explored the communication strategies used to ignore cues and concerns (Barry, Stevenson, Britten, Barber, & Bradley, 2001; Easter & Beach, 2004; Epstein et al., 1998; McCabe et al., 2002; Rogers & Todd, 2000; Salmon et al., 2004; Suchman et al., 1997). The other studies examined how the expressions of cues and concerns were affected by physicians' general interview approach (Arborelius & Österberg, 1995) and by their ways of closing the interview (J. D. Robinson, 2001; White et al., 1997) or responding to emotional cues (Brown et al., 2002).

Some of the studies provided examples of the content of cues and concerns. Many statements concerned symptoms or other issues directly related to the medical condition of the patient, sometimes formulated as questions ("What's going wrong with my mind?"; Salmon et al., 2004). Other statements related to the patient's life situation, family situation, work or the future ("I'm in the process of retiring"). Emotionally charged information was often presented in the form of idioms or metaphors ("The doc said it was touch and go"; Suchman et al., 1997) but sometimes also as more explicitly stated emotional concerns. Such concerns were presented in general terms, with the use of "you" or "one" instead

of "I" and diminutives and qualifiers such as "kind of" or "a little" ("you know, you get sort of scared"). Two studies focused on how patients talked about their symptoms, either psychiatric symptoms (McCabe et al., 2002) or pain (Rogers & Todd, 2000).

### *Consultations With and Without Concerns*

Arborelius and Österberg (1995) compared consultations with and without patient concerns. In 9 of the 19 visits, the patients fully expressed their concerns; in 7 visits concerns were alluded to (cues). Most concerns were illness related, such as fear of cancer, or stress-related emotions, such as family problems, parental responsibilities, or worries about children. Consultations with fully expressed concerns followed a characteristic and rather uniform pattern. The physician invited discussion with unfocused or focused open-ended questions beyond the immediate disease-related topic, which could related to family or work. This approach, together with empathic interventions (acknowledgement of patients' emotions and emphasis on collaboration), seemed to elicit patient cues and direct expressions of concerns. Consultations without verbalization of concerns were characterized by closed-ended questions and by ignoring and not responding to the indirect cues to potential concerns.

The authors emphasized five elements in the process of eliciting and responding to concerns. These were the following: openly invite the patient to talk about psychosocial issues; be sensitive to the patients' spontaneous comments; follow up on psychosocial information and emotional cues; emphasize an empathic approach throughout the consultation (providing respect, partnership, and support); and cooperate with the patient in the resolution of the concern or psychosocial issues brought forward.

### *The Closing Moments of the Medical Visit: Eliciting Unstated Concerns*

White et al. (1997) analyzed the closing moments in general internal medicine consultations. In about one third of the consultations, the patient brought up new concerns toward the end of the visit, but most of the patient statements concerned medical questions, such as obtaining information about a symptom or a request for a blood pressure check. In only 1 of the 22 consultations did the patient bring up a psychosocial concern in the visit's closing moments.

The likelihood of patients presenting new concerns depended on how physicians ended the consultation. J. D. Robinson (2001) compared two different closures, one in which the physician asked the patient whether there were other concerns and one in which the physician made follow-up appointments. He found that the first approach consistently brought up new and important information about concerns not stated before.

### *Responding to Emotional Cues*

Brown et al. (2002) examined which communication strategies of oncologists were perceived by a standardized patient and by an observer as helpful in terms of shared decision making and patient support. Oncologists interviewed the same standardized patient on two occasions. On one occasion, the standardized patient simulated a very active and anxious patient, whereas on the other

occasion, she simulated a very passive and depressed patient. In simulations of an anxious patient, most oncologists tried to control the consultation and used communication strategies to structure the extensive input from the patient. When responding to the simulated passive–depressive patient, oncologists raised emotional issues more frequently, addressed potential fears more often, asked more questions about social and family support, and attempted to facilitate shared decision making. Acknowledging responses to emotional cues, particularly when issued by the passive patient, was judged as a helpful strategy in promoting good communication. Other helpful strategies were active listening and, as in Arborelius and Österberg's (1995) study, conveying empathy.

### *Ignoring and Avoiding Cues and Concerns*

Rogers and Todd (2000) focused on concerns of oncology patients regarding pain, which occurred in 53% of consultations. The physicians explored these concerns only briefly and limited their attention most often to the physical domain. They restricted patients' talk about pain by interrupting, minimizing, dismissing, and ignoring symptoms; changing the topic; presenting premature reassurance; and asking closed-ended questions. Comparable communication tactics to those observed by Rogers and Todd were used by psychiatrists, who were reluctant to engage with patients' concerns about their symptoms whenever patients actively attempted to talk about their psychotic symptoms (McCabe et al. 2002).

Suchman et al. (1997) examined the responses to empathic opportunities and potential opportunities offered by patients. They observed that in most interviews, physicians ignored empathic opportunities by failing to explicitly acknowledge patients' expressed emotion. Physicians tended to return to the preceding topic, usually the diagnostic exploration of symptoms. Likewise, a mixed group of physicians, comprising junior and senior surgeons and medical and radiation oncologists missed 70% of 160 "empathic opportunities" offered by oncological patients in first outpatient visits (Easter & Beach, 2004). Missed empathic opportunities occurred when physicians did not attend to, or minimally addressed, such patient needs.

Epstein et al. (1998) studied communicational barriers and facilitators in primary care visits with patients who had indicated on a questionnaire, prior to the consultation, concern about or risk about HIV infection. When topics related to HIV risk came up, all consultations contained awkward moments, and physicians showed uneasiness, embarrassment, or nervousness. In most interviews, the physicians did not pursue patients' vague statements or ignored an explicitly stated concern. Typically, physicians avoided discussion of HIV risk by simply changing the topic.

Salmon et al. (2004) addressed the assumption that patients with medically unexplained symptoms tended to insist on symptomatic intervention from the doctor instead of directing attention to psychological issues. Contrary to expectations, they found that patients with medically unexplained symptoms gave many cues, defined as disclosure of emotional or social problems or as an expressed need for explanations. Most of these "psychological opportunities" that patients presented were ignored or missed by the physician, for instance, by premature reassurance, return to a somatic agenda, or both (e.g., patient: "It just. . . , what's going

wrong with my mind, you know?") doctor: "I don't think there is anything serious going wrong. Do you need any tablets?").

The approach by Barry et al. (2001), rather than directed specifically to investigating cues and concerns, focused on more general characteristic communication patterns of general practice consultations. Their point of departure was Mishler's (1984) viewpoint on the importance of relating to the patients' life world (with reference to German philosopher Habermas), not only to their symptoms. Barry et al. described four basic communication patterns: strictly medicine, mutual life world, life world ignored, and life world blocked. These authors showed how physicians who characteristically use the latter two communication patterns tend to block or ignore patients' life world accounts.

### Discussion

This article represents an attempt to give an overview of the research findings accumulated around patient expressions occurring during medical consultations that convey worries, fears, or unpleasant emotions. The review refers to such expressions as cues and concerns. We examined quantitative as well as qualitative studies that explored the links between patient and physician characteristics, on one side, and the frequency and quality of patient cue offers and expressions of concern, on the other.

The present review does not claim to present a full picture of the empirical studies of cues and concerns expressed in medical interviews. There are a number of reasons why. Not all studies dealing with patients' expression of what is felt to be worrisome in the consultation, applied the words *cues*, *clues*, or *concerns*. Although we widened our selection criteria to include studies that have explored this phenomenon under different names, a number of such studies may not have been picked up by the chosen research strategies. Sometimes it was difficult to decide whether a specific study should be included. Some of the screened studies were not primarily focused on cues and concerns but were included whenever the terms were applied and operationally defined. In particular, in the inclusion of qualitative studies, our selection criteria were difficult to apply.

Another problem that has influenced the sampling of the studies is the fact that in the statistical analysis of infrequent events, such as cues and expressions of concern, many researchers have chosen to lump the different cue and concern expressions or to combine them with other patient expressions. In this case, studies were included on condition that these patient expressions appeared akin to cues and concerns. Studies in which cues and concerns were not reported as sufficiently isolated entities were excluded from the review. This was the case for some of the studies that applied the RIAS (Roter, 1993), one of the most widely used interaction analysis systems in clinical communication research. These studies analyzed broad composite content categories such as "emotional talk," "affective exchange," or "rapport building" and, consequently, patient expressions of *concern* as defined by the specific RIAS category were combined with data on other RIAS categories of socio-emotional patient behaviors, such as approval, compliments, criticism, or showing optimism. It should be noted that a number of these studies report utterance frequencies for these broader content categories that correspond reasonably well with the ones in the present review (i.e. Bensing, Roter, & Hulsman, 2003; Deveugele et al., 2004).

The overall picture of the research on cues and concerns that emerged from the review, appears uneven and patchy. One reason is that in clinical communication research, attention to the verbal behavior of patients, compared with that of physicians, is relatively recent. Accordingly, the relevant literature is still scanty. More than half of the included studies appeared during the past 5 years, and most of the classification systems that dedicate specific attention to cues and concerns are fairly new. Moreover, the studies were widely heterogeneous in terms of definitions, methodology, and settings. The reported data of interest in this review varied in form, detail, and specificity. Despite the conceptual difference between cue and concern, these were not always kept distinct, with both concepts included under one or the other label. In addition, the criteria for defining the same concept often did not converge, or, at worst, were not explicated.

Keeping these limitations in mind, in the discussion we highlight common themes in definitions and findings. We identified three dimensions—emotional content, explicitness of the emotional expression, and cue/concern source—that offer a helpful framework within which the different definitions of cues and concerns can be collocated and examined. The results of this review indicate that, across different terminologies, there is general agreement on the importance of focusing on patients' unpleasant or stressful feelings and emotions, however expressed. Ratings of the intensity/explicitness of emotional expressions are included in the Medical Interview Aural Rating Scale (MIARS; Heaven & Green, 1999) and the MIPS (Ford et al., 2000) and could provide helpful criteria for a clear distinction between cue and concern. In our opinion, the distinction between cues as emotional hints to concerns and concerns as fully expressed emotional concerns is essential, not only because of their different informational quality but also because they require different patient-centered responses from the physician. Another distinction to maintain is that between doctor-solicited and patient-initiated emotional expressions because it takes into account the concept of patient agenda (patients' concerns may arise directly or through cues) and doctor agenda (concerns must be checked by the physician). Such a distinction is particularly important for concerns and their potential relevance for the detection of emotional distress. Concerns as fully expressed worries, to a greater extent than cues, qualify the medical interview and should be a desirable outcome.

Compared with all other patient utterances occurring in consultations, verbal cues and expressions of concern proved to be relatively rare events, although both patient and physician characteristics contributed to significant variations in their occurrence. They are, as expected, rare events when patients have few or no concerns at all, but they may become more frequent with female gender and in particular with emotional distress.

The physician's contribution to the interview approach was confirmed by qualitative as well as quantitative studies as crucial in determining the degree of patients' disclosure of stressful emotional issues. Patients often may not want to disclose their feelings and worries, fearing that a psychiatric label might jeopardize medical care, or in attempts to avoid offering information that does not seem to interest the physician. Simply asking patients about worries was shown to greatly increase the disclosure of such important information.

A number of studies on missed cues or concerns have shown how physicians fail to acknowledge patient worries. Given what is

considered an adequate response (immediacy of nondirective, facilitative, and supporting interventions), quantitative as well as qualitative studies concur that a missed cue is the consequence of controlling and doctor-centered responses that in some way block, deviate, and discourage elaboration of cues and ignore, deny, or terminate concerns. However, as Branch and Malik (1993) have indicated, some clinicians may willfully choose not to present an immediate response to a stated cue, deciding to delay the response or not to respond at all.

One of the reasons adopted to explain the occurrence of inadequate responses is the perceived difficulty of some cues compared with others. The greater perceived difficulty of emotional cues, compared with cues containing medical content, observed by De Valck, Bruynooghe, Bensing, Kerssens, and Hulsman (2001), parallels the finding by Butow et al. (2002) that more emotional than information cues are missed.

The evaluation of training courses, focusing on physicians' ability to detect cues to hidden concerns, to facilitate their expressions, and to respond adequately to expressed concerns showed, with few exceptions, that physicians succeed in reducing responses that ignore, postpone, or pass over cues and increase cue-based questions, acknowledging comments and supportive statements. Inspection of the reported figures shows that the percentage improvement in adequate responses to cues, although significant, was modest, between 12% and 23%. Further research is needed to establish whether an improvement rate of this size is sufficient to improve the detection of emotional distress, given the link between increase of cues and concerns and detection rate observed by J. W. Robinson and Roter (1999) and Del Piccolo et al. (2000).

One of the main problems in the research on cues and concerns is that of understanding the relative importance of the factors determining when patients express their worries and what they say and do. Patient and physician characteristics, as well as contextual variables, are all related to cue and concern emission, but we do not yet know their specific contribution at a micro-level, defined by the sequence that immediately precedes the cue; at the general level of the interview approach; at the physician level; and at the patient level. All of these variables influence cue and concern emission, but their hierarchical position has not yet been demonstrated. To respond to this question, multilevel models are required, which take into account the complexity of the variables that may contribute at each level to influence communication patterns. These models are never more than approximations to reality; to better estimate the complete picture of what happens during medical consultations, quantitative and qualitative studies need to converge and become complementary approaches. Qualitative studies help formulate hypotheses, grasping minimal variations in the process description and its complexity, whereas quantitative studies permit formulation of models related to specific characteristics of the interaction, with higher external validity.

## Conclusions

Cues and concerns are relatively rare occurrences in medical consultations. In many consultations they do not appear at all or are indirectly expressed by the patient, and are often missed by the doctor. This makes the application of standard quantitative analyses much more complicated and demands a search for new and innovative approaches, such as those offered by artificial neural

network analyses or derived from other scientific fields (for a review on the different statistical approaches that could be adopted in doctor–patient interaction, see Mazzi et al., 2003). Any approach in communication research must take into account many aspects that may concur to determine changes in communication patterns: the serial dependence between physician and patient that defines their “reciprocity”; the dependence “within each speaker,” the homogeneity of patterns of interaction along time (“stationarity”) and their variability, and the specific weight of confounding variables such as patients’ mental state and personality, duration of consultations, and physicians’ attitude and personal approach toward patients. Although advanced statistics may be applied to tap the behavioral interaction patterns, it is obviously also important to apply qualitative analysis of the meaning of the cues and concerns presented, for instance, to understand each individual concern in a broader context of the patient’s life situation. Beyond each single worry, an underlying pivotal concern may emerge. Future research should combine quantitative and qualitative approaches to a greater extent than has been the case to date.

Above all, future research in this field calls for a “core concept” in the definition of *cues* and *concerns* based on a general and widely accepted description of what is meant by cues and concerns. An attempt in this direction has been made by a group of more than 20 researchers, coming from seven different countries, who met in Verona, Italy in 2005 for a 2-day workshop focused on finding common ground in the definition of cue and concern (Del Piccolo, Goss, & Zimmermann, 2005). A comparative coding exercise, where different coding systems were applied on the same medical interviews, illustrated the differential sensitivity and specificity of the different systems in selecting what was considered a cue or concern. Participants began to work on finding a core definition that could conciliate the main aspects that emerged in the discussions raised during the workshop. This project is in progress (Del Piccolo, Goss, & Bergvik, 2006).

## References

- \*References marked with an asterisk indicate studies included in the literature review.
- \*Arborelius, E., & Österberg, E. (1995). How do GPs discuss subjects other than illness? *Patient Education and Counseling*, 25, 257–268.
- Bakeman, R., & Quera, V. (1995). Log-linear approaches to lag-sequential analysis when consecutive codes may and cannot repeat. *Psychological Bulletin*, 118, 272–284.
- \*Barry, C. A., Stevenson, F. A., Britten, N., Barber, N., & Bradley, C. P. (2001). Giving voice to the life world: More humane, more effective medical care? *Social Science and Medicine*, 53, 487–505.
- \*Beckman, H. B., & Frankel, R. M. (1984). The effect of physician behavior on the collection of data. *Annals of Internal Medicine*, 101, 692–696.
- Bensing, J., Roter, D. L., & Hulsman, R. L. (2003). Communication patterns in primary care physicians in the United States and the Netherlands. *Journal of General and Internal Medicine*, 18, 335–342.
- Bertakis, K. D., Roter, D., & Putnam, S. M. (1991). The relationship of physician medical interview style to patient satisfaction. *Journal of Family Practice*, 32, 135–136.
- \*Blue, A. V., Alexander, W., Chessman, W., Gilbert, G. E., & Mainous, G. (2000). Responding to patients’ emotions: Important for standardized patients’ satisfaction. *Family Medicine*, 32, 326–330.
- Booth, C., & Maguire, P. (1991). *Development of a rating system to assess interactions between cancer patients and health professionals* [Report]. London: Cancer Research Campaign.
- Branch, W. T., & Malik, T. K. (1993). Using “windows of opportunities” in brief interviews to understand patients’ concerns. *Journal of the American Medical Association*, 269, 1667–1668.
- \*Brown, R. F., Butow, P. N., Henmann, M., Dunn, S. M., Boyle, F., & Tattersall, M. H. (2002). Responding to the active and passive patient: Flexibility is the key. *Health Expectations*, 5, 236–245.
- \*Butow, P. N., Brown, R. F., Gogar, S., Tattersall, M. H. N., & Dunn, S. M. (2002). Oncologists reaction to cancer patients’ verbal cues. *Psycho-Oncology*, 11, 47–58.
- Butow, P. N., Dunn, S. M., Tattersall, M. H. N., & Jones, Q. J. (1995). Computer-based interaction analysis of the cancer consultation. *British Journal of Cancer*, 71, 1115–1121.
- \*Bylund, C. L., & Makoul, G. (2002). Empathic communication and gender in the physician–patient encounter. *Patient Education and Counseling*, 48, 207–216.
- Byrne, P., & Long, B. (1976). *Doctors talking to patients*. London: Her Majesty’s Stationery Office.
- \*Davenport, S., Goldberg, D., & Millar, T. (1987). How psychiatric disorders are missed during medical consultations. *The Lancet*, 22, 439–441.
- \*Del Piccolo, L., Goss, C., & Bergvik, S., (2006). The fourth meeting of the Verona Network on Sequence Analyses: Consensus finding on the appropriateness of provider responses to cues and concerns. *Patient Education and Counseling*, 61, 473–475.
- Del Piccolo, L., 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 adequateness of provider responses. *Patient Education and Counseling*, 57, 241–244.
- \*Del Piccolo, L., Mead, N., Gask, L., Mazzi, M. A., Goss, C., Rimondini, M., et al. (2005). The English version of the Verona Medical Interview Classification System (VR-MICS): An assessment of its reliability and a comparative cross-cultural test of its validity. *Patient Education and Counseling*, 58, 252–263.
- \*Del Piccolo, L., Saltini, A., Zimmermann, C., & Dunn, G. (2000). Differences in verbal behaviors of patients with and without emotional distress during primary care consultations. *Psychological Medicine*, 30, 629–643.
- De Valck, C., Bruynooghe, R., Bensing, J. M., Kerssens, J. J., & Hulsman, R. L. (2001). Cue-responding in a simulated bad news situation: Exploring a stress hypothesis. *Journal of Health Psychology*, 6, 585–596.
- Detmar, S. B., Aaronson, N. K., Wever, L. D. V., Muller, M., & Schor-nagel, J. H. (2000). How are you feeling? Who wants to know? Patients’ and oncologists’ preferences for discussing health-related quality-of-life issues. *Journal of Clinical Oncology*, 18, 3295–3301.
- Deveugele, M., Derese, D., De Bacquer, D., van den Brink-Muinen, A., Bensing, J., & De Maeseneer, J. (2004). Is the communication behavior of GPs during the consultation related to the diagnosis? A cross-sectional study in six European countries. *Patient Education and Counseling*, 54, 283–289.
- \*Easter, D. W., & Beach, W. (2004). Competent patient care is dependent upon attending to empathic opportunities presented during interview sessions. *Current Surgery*, 61, 313–318.
- \*Eide, H., Frankel, R., Haaversen, A. C., Vaupel, K. A., Graugaard, P. K., & Finset, A. (2004). Listening for feelings: Identifying and coding empathic and potential empathic opportunities in medical dialogues. *Patient Education & Counseling*, 54, 291–297.
- \*Eide, H., Quera, V., & Finset, A. (2003). Exploring rare patient behavior with sequential analysis: An illustration. *Epidemiologia e Psichiatria Sociale*, 12, 109–114.
- \*Eide, H., Quera, V., & Graugaard, P., & Finset, A. (2004). Physician–patient dialogue surrounding cancer patients’ expression of concern and

- worry: Applying sequence analysis to RIAS. *Social Science and Medicine*, 59, 145–155.
- \*Epstein, R. M., Morse, D. S., Frankel, R. M., Frarey L., Anderson, K., & Beckman, H. B. (1998). Awkward moments in patient–physician communication about HIV risk. *Annals of Internal Medicine*, 15, 435–442.
- \*Fallowfield, L., Jenkins, V., Farewell, F., Saul, J., Duffy, A., & Eves, R. (2002). Efficacy of a cancer research UK communication skills training model for oncologists: A randomized trial. *The Lancet*, 359, 650–656.
- \*Fallowfield, L., Jenkins, V., Farewell, F., & Solis-Trapal, I. (2003). Enduring impact of communication skills training: Results of a 12-month follow-up. *British Journal of Cancer*, 89, 1445–1449.
- Fallowfield, L., Ratcliffe, D., Jenkins, V., & Saul, J. (2001). Psychiatric morbidity and its recognition by doctors in patients with cancer. *British Journal of Cancer*, 84, 1011–1015.
- \*Ford, S., Fallowfield, L., & Lewis, S. (1996). Doctor–patient interactions in oncology. *Social Science and Medicine*, 42, 1511–1519.
- \*Ford, S., & Hall, A. (2004). Communication behaviors of skilled and less skilled oncologists: A validation study of the Medical Interaction Process System (MIPS). *Patient Education and Counseling*, 54, 275–282.
- Ford, S., Hall, A., Ratcliffe, D., & Fallowfield, L. (2000). The Medical Interaction Process System (MIPS): An instrument for analyzing interviews of oncologists and patients with cancer. *Social Science and Medicine*, 50, 553–566.
- Ford, S., Lewis, S., & Fallowfield, L. (1995). Psychological morbidity in newly referred patients with cancer. *Journal of Psychosomatic Research*, 39, 193–202.
- \*Gask, L., Goldberg, D., Lesser, A., & Millar, T. (1988). Improving the psychiatric skills of the general practice trainee: An evaluation of a group training course. *Medical Education*, 22, 132–138.
- \*Gask, L., McGrath, G., Goldberg, D., & Millar, T. (1987). Improving the psychiatric skills of established general practitioners: Evaluation of group teaching. *Medical Education*, 21, 362–368.
- Girón, M., Manjón-Arce, P., Puerto-Barber, J., Sánchez-García, E., & Gomez-Beneyto, M. (1998). Clinical interview skills and identification of emotional disorder in primary care. *American Journal of Psychiatry*, 155, 530–535.
- \*Goldberg, D., Hobson, R. F., Maguire, P., Margison, F., O’Dowd, T., Osborn, M., et al. (1984). The clarification and assessment of a method of psychotherapy. *British Journal of Psychiatry*, 144, 567–580.
- \*Goldberg, D., Jenkins, L., Miller, T., & Faragher, E. B. (1993). The ability of trainee general practitioners to identify psychological distress among their patients. *Psychological Medicine*, 23, 185–193.
- Goldberg, D., Steele, J. J., Johnson, A., & Smith, A. H. W. (1982). Ability of primary care physicians to make accurate ratings of psychiatric symptoms. *Archives of General Psychiatry*, 39, 829–833.
- \*Goldberg, D., Steele, J. J., & Smith, C. (1980). Teaching psychiatric interview techniques to family doctors. *Acta Psychiatrica Scandinavica*, 62, 41–47.
- \*Goss, C., Mazzi, M. A., Del Piccolo, L., Rimondini, M., & Zimmermann, C. (2005). The information giving process in general practice consultations. *Journal of Evaluation in Clinical Practice*, 11, 339–349.
- \*Hall, J. A., & Roter, D. L. (1995). Patient gender and communication with physicians: Results of a community-based study. *Women’s Health*, 1, 77–95.
- \*Hall, J. A., & Roter, D. L. (2002). Do patients talk differently to male and female physicians? A meta-analytic review. *Patient Education and Counseling*, 48, 217–224.
- \*Hall, J. A., Roter, D. L., Milburn, M. A., & Daltroy, L. H. (1996). Patients’ health as a predictor of physician and patient behavior in medical visits: A synthesis of four studies. *Medical Care*, 34, 1205–1218.
- Heaven, C., & Green, C. (1999). *Medical Interview Aural Rating Scale*. Unpublished report, Cancer Research UK Psychological Medicine Group, University of Manchester, Manchester, United Kingdom.
- \*Ishikawa, H., Takayama, T., Yamazaki, Y., Seki, Y., Katsumata, N., & Aoki, Y. (2002). The interaction between physician and patient communication behaviors in Japanese cancer consultations and the influence of personal and consultation characteristics. *Patient Education and Counseling*, 46, 277–285.
- \*Jenkins, V., & Fallowfield, L. (2002). Can communication skills training alter physicians’ beliefs and behavior in clinics? *Journal of Clinical Oncology*, 20, 765–769.
- \*Kaplan, S. H., Greenfield, S., & Ware, J. E. (1989). Assessing the effects of physician–patient interactions on the outcomes of chronic disease. *Medical Care*, 27, 110–127.
- Kessler, D., Lloyd, K., Lewis, G., & Gray, D. P. (1999). Cross-sectional study of symptom attribution and recognition of depression and anxiety in primary care. *British Medical Journal*, 318, 436–439.
- \*Kim, Y. M., Kols, A., Prammawat, S., & Rinehart, W. (2005). Sequence analysis: Responsiveness of doctors to patient cues during family planning consultations in Mexico. *Patient Education and Counseling*, 58, 114–117.
- \*Lang, F., Floyd, M. R., Beine, K., & Buck, P. (2002). Sequenced questioning to elicit the patient’s perspective on illness: Effects on information disclosure, patient satisfaction, and time expenditure. *Family Medicine*, 43, 325–330.
- \*Langewitz, W., Nübling, M., & Weber, H. (2003). A theory-based approach to analyzing conversation sequences. *Epidemiologia e Psichiatria Sociale*, 12, 103–108.
- \*Levinson, W., Horawara-Bhat, R., & Lamb, J. (2000). A study of patient clues and physician responses in primary care and surgical settings. *Journal of the American Medical Association*, 284, 1021–1027.
- \*Maguire, P., Booth, K., Elliot, C., & Jones, B. (1996). Helping health professionals involved in cancer care acquire interviewing skills—The impact of workshops. *European Journal of Cancer*, 32, 1457–1459.
- \*Maguire, P., Faulkner, A., Booth, K., Elliot, C., & Hillier, V. (1996). Helping cancer patients disclose their concerns. *European Journal of Cancer*, 32, 78–81.
- \*Maguire, P., Goldberg, D., Hobson, R. F., Margison, F., Moss, S., & O’Dowd, T. (1984). Evaluating the teaching of a method of psychotherapy. *British Journal of Psychiatry*, 144, 575–580.
- \*Maguire, P., & Rutter, D. R. (1976). History taking for medical students. *The Lancet*, 11, 556–557.
- \*Marvel, M. K., Epstein, R. M., Flowers, K., & Beckman, H. B. (1999). Soliciting the patient’s agenda: Have we improved? *Journal of the American Medical Association*, 281, 283–287.
- Mazzi, M. A., Del Piccolo, L., & Zimmermann, C. (2003). Event-based categorical sequential analyses of the medical interview: A review. *Epidemiologia e Psichiatria Sociale*, 12, 81–85.
- \*McCabe, R., Heath, C., Burns, T., & Priebe, S. (2002). Engagement of patients with psychosis in the consultation: Conversation analytic study. *British Medical Journal*, 325, 1148–1151.
- Mishler, E. G. (1984). *The discourse of medicine: The dialectics of medical interviews*. Norwood, NJ: Ablex.
- Passik, D., Dugan, W., McDonal, M. V., Rosenfeld, B., Theobald, D. E., & Edgerton, S. (1998). Oncologists’ recognition of depression in their patients with cancer. *Journal of Clinical Oncology*, 16, 1594–1600.
- Putnam, S. M., & Lipkin, M. (1995). The patient-centered interview: Research support. In M. Lipkin, S. M. Putnam, & A. Lazare (Eds.), *The medical interview* (pp. 531–537). New York: Springer.
- \*Rimondini, M., Del Piccolo, L., Goss, C., Mazzi, M. A., Paccaloni, M., & Zimmermann, C. (2006). Communication skills in psychiatry residents. How do they handle patient concerns? An application of sequence analysis to interviews with simulated patients. *Psychotherapy and Psychosomatics*, 75, 161–169.
- \*Robinson, J. D. (2001). Closing medical encounters: Two physician practices and their implications for the expression of patients’ unstated concerns. *Social Science and Medicine*, 53, 639–656.

- \*Robinson, J. W., & Roter, D. L. (1999). Psychosocial disclosure by primary care patients. *Social Science and Medicine*, 48, 1353–1362.
- \*Rogers, M. S., & Todd, C. J. (2000). The “right kind” of pain: Talking about symptoms in outpatient consultations. *Palliative Medicine*, 14, 299–307.
- Roter, D. L. (1993). *The Roter Method of Interaction Process Analysis*. Baltimore: Johns Hopkins University.
- \*Salmon, P., Dowrick, C. F., Ring, A., & Humphris, G. M. (2004). Voiced but unheard agendas: Qualitative analysis of the psychosocial cues that patients with unexplained symptoms present to general practitioners. *British Journal of General Practice*, 54, 171–176.
- Schulberg, H. C. (1991). Mental disorder in the primary care setting: Research priorities for the 1990s. *General Hospital Psychiatry*, 13, 156–164.
- \*Street, R. L. (1991). Information giving in medical consultations: The influence of patients’ communicative styles and personal characteristics. *Social Science and Medicine*, 32, 541–548.
- \*Street, R. L. (1992). Communicative styles and adaptations in physician–parent consultations. *Social Science and Medicine*, 34, 1155–1163.
- \*Suchman, A. L., Markakis, K., Beckman, H. B., & Frankel, R. (1997). A model of empathic communication in the medical interview. *Journal of the American Medical Association*, 277, 678–682.
- \*Timmermans, L. M., van der Maazen, R. W. M., Verhaak, C. M., van Roosmaleen, M. S., van Daal, W. A. J., & Kraaimat, F. W. (2005). Patient participation in discussing palliative radiotherapy. *Patient Education and Counseling*, 57, 53–61.
- Ustun, T. B., & Sartorius, N. (1995). *Mental illness in general health care: An international study*. New York: Wiley.
- \*Van den Brink-Muinen, A., & Caris-Verhallen, W. (2003). Doctors’ responses to patients’ concerns: Testing the use of sequential analysis. *Epidemiologia e Psichiatria Sociale*, 12, 92–97.
- \*Van Dulmen, A. M., Nübling, M., & Langewitz, W. (2003). Doctors’ responses to patients’ concerns: An exploration of communication sequences in gynecology. *Epidemiologia e Psichiatria Sociale*, 12, 98–102.
- \*Van Dulmen, S., & van den Brink-Muinen, A. (2004). Patients’ preferences and experiences in handling emotions. A study on communication sequences in primary care. *Patient Education and Counseling*, 55, 149–152.
- \*Van Dulmen, A. M., & van Weert, C. M. (2001). Effects of gynecological education on interpersonal communication skills. *British Journal of Obstetrics and Gynecology*, 108, 485–491.
- \*Van Dulmen, A. M., Verhaak, P. F. M., & Bilo, H. J. G. (1997). Shifts in doctor–patient communication during a series of outpatient consultations in non–insulin dependent diabetes mellitus. *Patient Education and Counseling*, 30, 227–237.
- \*White, J., Levinson, W., & Roter, D. (1994). “Oh, by the way. . .”: the closing moments of the medical visit. *Journal of General Internal Medicine*, 9, 24–28.
- \*White, J. C., Rosson, C., Christensen, J., Hart, R., & Levinson, W. (1997). Wrapping things up: A qualitative analysis of the closing moments of the medical visit. *Patient Education and Counseling*, 30, 155–165.
- \*Zimmermann, C., Del Piccolo, L., & Mazzi, M. A. (2003). Patient cues and medical interviewing in general practice: Examples of the application of sequential analysis. *Epidemiologia e Psichiatria Sociale*, 12, 115–123.

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