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Exploring Doctor-Patient Communication in Oncology: a Literature Synthesis on Coding Schemes and Self-Report Measures

Francesca Alby[1*], Cristina Zucchermaglio[1] and Marilena Fatigante[1]

[1]*Department of Developmental and Social Psychology, Sapienza University of Rome, Rome, Italy*

Abstract

This literature synthesis collects instruments used to analyze doctor-patient interactions in oncology consultations. Oncology visits are complex and demanding, requiring doctors to communicate difficult information to patients under high-stress conditions. Effective communication is crucial for successful cancer treatment and informed decision-making. Medical interaction coding systems and self-reporting questionnaires offer valuable tools for evaluating communication, research, physician training, and assessing training program efficacy. This review explores various coding systems and self-report measures, their applications, and distinctions between observation-based and self-report systems. The review highlights recent developments in the field, gaps in current research, and potential future directions, emphasizing the importance of addressing local healthcare system influences and incorporating intercultural considerations in coding systems to promote patient-centered care.

Keywords: doctor-patient communication, oncology consultations, coding systems, self-report measures

*Corresponding author.
Francesca Alby
Department of Social and Developmental Psychology,
Sapienza University of Rome,
Via dei Marsi 78, 00185,
Rome, Italy
email: francesca.alby@uniroma1.it
(F. Alby)

Introduction

Oncology visits are highly complex communicative contexts in which doctors must explain difficult information to patients with potentially high stress levels, which can influence their comprehension of pertinent medical information (Cimprich, 1999, Fig.1). These factors pose challenges for oncologists in effectively communicating diagnoses and treatment suggestions. Nevertheless, successful cancer treatment hinges on the proficiency of communication and well-informed decision-making (Croyle, 2015).

Röttele et al. (2020)found that physicians and patients assess communication differently and only marginally concur in their evaluations. This implies that the concept of communication may not be consistently measurable in a singular manner due to its multidimensional and multifaceted nature. However, effective healthcare communication involves building shared understandings between all participants involved and is a core component of patient-centered care (Epstein and Street, 2007). Quality of oncologist-patient communication impacts patient satisfaction and ability to cope with cancer (Prip et al., 2018). In particular, previous research has focused on several areas of oncologist-patient communication, including how doctors give patients information (including bad news and information on treatment options), how they emotionally support patients, and how they involve them in decision making (for examples, see Baile and Aaron, 2005; Brown et al., 2011; Collins, Drew, Watt and Entwistle, 2005; Maynard, 2006; Zucchermaglio et al. ,2016; Alby et al., 2017; Fatigante et al., 2020; Pino et al., 2022).

Coding systems and self-report measures represent an effective and efficient means of assessing doctor-patient communication and its associated variables during oncology visits. These versatile tools serve various purposes, including research, physician communication training, and the evaluation of communication training effectiveness. This synthesis aims to provide an initial framework for researchers and professionals interested in this field, facilitating a better understanding of the distinctions among the most commonly used tools for observing, analyzing, and evaluating doctor-patient interactions.

Some of the coding systems are specific to the oncology field, however most are used in a variety of medical fields including oncology. In this review, particular attention will be given to the description of how communication and other associated variables are assessed in each system. Furthermore, a distinction will be made between systems that evaluate communication based on observation and self-report systems (such as questionnaires or scales) administered during an interview or self-administered by patients.

This narrative synthesis of the literature may serve as a starting point for scholars in the field who need to assess doctor-patient communication and its associated variables in oncological encounters.

Method

This article presents a brief literature review of the main coding systems and self-report questionnaires used to analyze the interaction between doctors and patients in oncology consultations. We conducted the review by examining the database PsycINFO. A total of 57 studies were identified in the PsychINFO database. The key terms used were: doctor-patient communication AND oncology AND coding systems OR self-report measures. We included 15 records following these criteria of exclusion: (a) the study did not include oncology settings; (b) the article was not available in full text; (c) the article was written in languages other than English; (d) the article was not published between January 2000 and December 2022; (e) the article was not pertinent to the topic. We also manually examined journals on communication in oncological settings and other systematic reviews on the wider field of medical communication (Ang et al., 2013; Granados-Gámez et al., 2021; Zill et al., 2014). Overall, 20 studies published between 1993 and 2022 were included in the review. In particular, 12 articles refer to coding system of doctor-patient communication and 8 refer to self-reported measures.

The review will first present coding systems of doctor-patient interactions. Coding systems are utilized by an external observer who codes and analyzes, through direct viewing of audio and/or video recordings, the communicative exchange that occurs during the physician-patient interaction. Subsequently, it will refer to self-report instruments, namely questionnaires where patients provide self-assessments of perceived communication or other related dimensions of medical care (cf. Table 1 for a summary of the instruments).

Coding systems to assess doctor-patient interaction

The primary approach used in research involves indirect measures (e.g., self-report questionnaires, satisfaction scales) primarily focused on the physician's ability to engage the patient during the communication process. Several studies however have also applied coding systems to audio or video recordings of interactions (Levinson, 2000; Stiles & Putnam, 1995) to primarily evaluate the doctor's behaviors (e.g., information delivery, reassurance, encouragement, etc.), seen as a comprehensive measure of the doctor's communicative approach (Mead & Bower, 2000; Roter & Larson, 2002). Moreover, some studies have developed coding systems targeted at specific phases of the visit (e.g., the decision-making phase; Brown et al., 2011), while others have focused on examining misunderstandings (McCabe & Healey, 2018; Rossi & Macagno, 2020) or emotional cues in the doctor-patient communication within the visit (e.g., the Verona Coding System, Del Piccolo et al., 1999, 2011, 2014; 2017; Zimmermann et al., 2011).

Among the systems examined, one of the most used is the Roter Interaction Analysis System (RIAS)**. RIAS is an analysis approach of medical-patient interactions that focuses on the verbal elements of communications. Coders identify and categorize various types of communication, such as questions, orientation statements, medical information, and emotional support. It classifies verbal expressions into categories like physician's questions, care statements, medical instructions, empathy, and other components of dialogue. The RIAS system is widely used in research and healthcare provider training (Roter et al., 1997; 2002).

The Verona Coding Definitions of Emotional Sequences (VR-CoDES) system is based on a patient-centered and biopsychosocial model of healthcare consultations, as well

as a functional approach to emotion theory. VR-CoDES views emotional interaction through sequences that involve an eliciting event, the patient's emotional expression, and the clinician's immediate response. The system emphasizes detailed classification of cues and concerns, as well as choices between explicit and non-explicit responses together with providing versus reducing interactional space for further disclosure (Del Piccolo et al., 2011, 2014; 2017; Zimmermann et al., 2011).

The Verona-Medical Interview Classification System (VR-MICS-P)** describes medical-patient interactions, highlighting aspects more related to a patient-centered approach. It evaluates the use of open questions, attention to psychosocial aspects, the doctor's ability to provide empathic responses to the patient's emotions, and the use of interview techniques like "transitions" and "cues" expressed by the patient. The VR-MICS system is used in various areas, such as research, teaching, and evaluating the effectiveness of training programs (Del Piccolo et al., 1999).

CN-LOGIT (Computer-based interaction analysis of the cancer consultation)** is a model implemented on PC (WinConCode Software) that captures salient aspects of medical-patient interaction in cancer consultations. Coding is done through audio and video-recordings and is specific to interactions with cancer patients but can be extended to any clinical context. Classification involves assigning 4 codes to each expression, indicating the source, content, function, and emotional component (Butow et al., 1995).

The Medical Interaction Process System (MIPS)** (Ford et al., 2000a) is a coding system that evaluates the content and structure of medical-patient interactions, focusing on identifying verbal and non-verbal behaviors, as well as problem-solving strategies used during medical visits. The coder concentrates on specific interaction components, such as the physician's information collection, treatment planning, emotional sharing, and medication prescription. MIPS is frequently utilized to analyze conversations that are related. (Ford et al., 2000b)

DAS-O: Decision Analysis System for Oncology** (Brown et al., 2011) is a specific coding system designed for the oncology field to assess the quality of treatment decision-making in breast cancer consultations. The DAS-O system encodes four fundamental behaviors: Establishing the medical-patient alliance; Following a consultative path; Assisting patients in understanding; Uncovering and avoiding coercion. The system employs two types of codes: frequency and evaluation. However, non-verbal behaviors are not considered in the coding process. DAS-O has proven to be a reliable and valid coding tool, offering valuable insights into the decision-making process during breast cancer consultations.

The OPTION scale (Observing Patient Involvement) and the Decision Support Analysis Tool (DSAT)** are tools used to assess decision outcomes and the quality of doctor-patient interactions. They help assess patient involvement in decisions regarding their treatment and care, providing valuable information to improve the decision-making process (Elwyn, 2003; Elwyn et al., 2003; Guimond et al., 2003).

The Four Habits Coding Scheme (4-Hab)** is a coding system that focuses on the physician's communication skills during interaction with the patient. It assesses four key skills: reflective listening, empathy, information sharing, and involving the patient in treatment planning. 4-Hab was developed to promote the adoption of effective communication behaviors by healthcare providers (Krupat et al., 2006).

MEDICODE (Richard & Lussier, 2006) is a coding instrument specifically designed for analyzing exchanges on medications during medical encounters. This tool is used to describe medication-related information discussed during medical consultations. It entails listening to audio or video interviews without the need for verbatim transcription. The tool identifies instances of medication discussions, notes the context and themes discussed, and records whether the physician or patient contributed to the discussion. Coders receive initial training and continuously update the same file during the consultation, capturing discussions on the same medication occurring at different times. The coders ultimately determine the definitive status of the medication at the end of the tape, particularly when it becomes evident whether a prescription will be written.

Conversation Analysis (CA) has been one of the primary approach used in researching doctor-patient interactions, primarily focusing on micro-analytical and sequential examination of communication practices (Sacks et al., 1974; Schegloff, 2007). However, more recent studies have shifted their focus towards developing coding systems that do not compromise sensitivity to the emic meaning of social actions (cf. McCabe & Healey, 2018; Stivers & Barnes, 2018). Moreover, within CA-oriented studies, coding systems, compared to qualitative analysis alone, offer the advantage of facilitating quantitative data analysis on videotaped and transcribed interactions, enabling correlations between interactional and non-interactional variables (Stivers, 2015). One significant benchmark in this area is the work by Stivers & Barnes, (2018), who classified different action types through which treatment recommendations are conveyed. The study emphasized the importance of investigating communication practices in different healthcare settings and contexts.

Another study by Fatigante et al., (2020) delved into breast cancer consultations and how treatment options are presented and discussed. They utilized conversation analysis to analyze sequences involving different treatment options, such as radiotherapy, hormone therapy, and chemotherapy. The study highlighted how the presentation of different treatment options varied according to the severity of the diagnosis and the available alternatives. Furthermore, it shed light on the consideration of patient consent and the mention of side effects and treatment burdens in the recommendations.

Building on the need for patient-centered communication practices, Alby et al. (2021) developed a coding system called ONCode which addresses specifically doctor-patient communication in oncological visits (cf. also Marino et al., 2023). This system focused particularly on ethnically discordant interactions. The pilot study demonstrated that ONCode is reliable, sensitive to patients' characteristics and contextual variables, and distinct from other established coding systems like VRCodes. It also revealed differences in communication patterns in visits with native and non-native patients.

Self-report questionnaire to assess perceived doctor-patient communication

Self-administered or interview-based questionnaires were employed to evaluate patients' perceptions of communication with their physicians and other associated variables, such as the quality of medical care, its impact on patient life, therapeutic alliance, and their satisfaction following the interaction.

The Communication Assessment Tool (CAT, patient version) comprises 15 items employing a five-point scale (1 = poor to 5 = excellent). It allows patients to evaluate the interpersonal and communication skills of physicians after the encounter. The aim of this tool is to provide patients with a broad assessment of physicians' communication skills, highlighting strengths and identifying areas that may require further attention for improvement (Makoul et al., 2007).

The Human Connection Scale (THC)** is a questionnaire that assesses the therapeutic alliance between cancer patients and their doctors, measuring the sense of shared understanding and trust in the physician. A higher score on the THC indicates a good therapeutic alliance and greater emotional acceptance of terminal illness (Mack et al., 2009).

The Perceived Self-Efficacy in Interacting with Healthcare Providers (PEPPI;5-item short form PEFPI)** is a tool to assess the older patient's self-efficacy in interacting with the doctor. It explores the patient's ability to ask questions, obtain adequate answers, be taken seriously by the doctor, and have a physician focused on the patient's main concerns. A higher score on the PEPPI reflects a greater perception of self-efficacy in doctor-patient interaction (Maly et al., 1998).

The Patient Satisfaction Questionnaire Short-Form (PSQ-18)** is a tool to assess patient satisfaction with medical care. It measures various dimensions such as overall satisfaction, technical quality of care, physician's attitude, communication, time spent with the doctor, and accessibility of care (Marshall & Hays, 1994).

The SDM-Q-9 and SDM-Q-Doc, a revised version of the SDM-Q, are patient and doctor questionnaires with nine statements (Scholl et al., 2012;Kriston et al., 2010). It adopts a Shared Decision Making (SDM) approach where patients and physicians actively engage, share information, and jointly take responsibility for mutual understanding and agreement. Respondents rate the 9 statements on a six-point scale from "completely disagree" to "completely agree". The questionnaire's score ranges from 0 to 100, where 0 represents the lowest level of SDM, and 100 reflects the highest extent of SDM.

The Patient-Physician Discordance Scale (PPDS) is a 10-item questionnaire designed for both patients and physicians after medical encounters. It assesses the disparity in evaluating health-related information, particularly in the context of chronic diseases (Sewitch et al., 2003). Differently, the Mutual Understanding Scale (MUS) is used in multicultural settings and provides a measure of mutual understanding regarding the topics discussed during medical encounters between patients and doctors (Harmsen et al., 2005)

Functional Assessment of Cancer Therapy Scale (FACT-G) (Cella et al., 1993a, 1993b; Weitzner et al., 1995) is a self-report tool that assesses the quality of life of cancer patients, measuring various dimensions, such as physical, social, family, and emotional well-being. The questionnaire was developed to be self-administered. High coefficients of reliability and validity were consistently observed. Test-retest coefficients range from 0.82 to 0.92 for each subscale. The scale's capacity to differentiate between patients based on disease stage, performance status rating (PSR), and hospitalization status underscores its sensitivity. Furthermore, it has demonstrated responsiveness to changes over time. Lastly, the validity of assessing distinct areas or dimensions of Quality of Life (QL) was confirmed through the varied responsiveness of subscales when applied to groups known to exhibit differences in physical, functional, social, and emotional well-being.

Fig.1. A moment of oncologist-patient interaction during a naturally-occurring visit. Communication between doctor and patient during oncology visits is particularly delicate and complex because it involves dealing with difficult medical information, burdensome treatments, life-threatening decisions.

Tab. 1. Summary of the instruments.

Name of the instrument	Authors and year of publication	Observation-Based Vs Self-Report Measures	Target setting	Dimension/Scale/ Level/Themes	Categories/ Items	Response/ Score	Characteristics
Roter Interaction Analysis System (RIAS)	Roter et al., 1997; 2002	Observation-Based Instrument	All medical settings (generic)	Two macro-dimension (task-focused communication; socio-emotional clusters categories and affective quality categories)	41 categories	Categories coded when they occur, 6-point scale	RIAS observes communication dynamics and resources used by doctors and patients, emphasizing both instrumental and affective behaviors during medical interactions
Verona-Medical Interview Classification System (VR-MICS-P)	Del Piccolo et al., 1999	Observation-Based Instrument	All medical settings (generic)	Exhaustive classification of the type of formulation and content expressed verbally during all the medical interview	21 categories	Categories coded when they occur	VR-MICS-P describes medical-patient interactions, emphasizing a patient-centered approach where the doctor provides empathic responses to the patient's emotions and utilizes interview techniques such as 'transitions' and 'cues' expressed by the patient
Verona Coding Definitions of Emotional Sequences (VR-CoDES)	Del Piccolo et al., 2011, 2014; 2017; Zimmermann et al., 2011	Observation-Based Instrument	All medical settings (generic)	7 dimensions	22 items (physician), 21 items (patient)	n/r	The VR-CoDES system takes a patient-centered approach, incorporating a biopsychosocial model for healthcare consultations and a functional emotion theory. It examines emotional interactions as sequences, encompassing an eliciting event, the patient's emotional expression, and the clinician's immediate response. The system places significant emphasis on precisely categorizing cues and concerns. Additionally, it provides options for explicit and non-explicit responses while effectively managing interactional space to encourage further disclosure
Computer-based interaction analysis of the cancer consultation (CN-LOGIT)	Butow et al., 1995	Observation-Based Instrument	Oncology	3 Level (micro level analysis; event counts; macro level analysis of consultation style and affect)	Every occurrence is encoded and timestamped in real-time for the entire sequence.	A profile of consultation (authoritarian or doctor centered vs affiliative or patient-centered, and affect in the patient and doctor	CN-LOGIT captures key aspects of medical-patient interactions during cancer consultations. It uses a classification system that assigns 4 codes to each expression, indicating the source, content, function, and emotional component. The analysis involves computing the total occurrences and frequency of individual segments in the graphical representation, along with overarching metrics like the overall duration of the consultation, combined activity of both physician and patient, the collective number of questions asked by each participant, and the total time dedicated to specific content areas.
Medical Interaction Process System (MIPS)	Ford et al., 2000a	Observation-Based Instrument	Oncology	8 clinician categories 7 patient categories 7 global affective categories (4 clinician/3 patient) 12 non-verbal (7 clinician/5 patient) items	Each global category is scored on a continuous scale from 0 -10	The system categorizes doctor-patient interactions based on exchange modes and content, encompassing both process and information, with the fundamental unit being the utterance. The system offers a multidimensional view of the consultation in oncological setting	MIPS is built upon the comprehensive bio-psychosocial model and employs a patient-centered approach. It is a coding system that evaluates medical-patient interactions, identifying verbal and non-verbal behaviors, problem-solving strategies, and specific aspects like information gathering, treatment planning, emotion sharing, and medication prescribing. It facilitates sequential and parallel coding, reducing conflicts.
Decision Analysis System for Oncology (DAS-O)	Brown et al., 2011	Observation-Based Instrument	Oncology	2 themes, (establishing a shared decision making framework and providing clear and unbiased information about standard treatments and clinical trials. These two themes are further divided into five subscales)	22 items + 48 items	Total scores were calculated by adding scores for the two subscales	DAS-O assesses treatment decision-making in cancer consultations through four key behaviors: establishing the medical-patient alliance, following a consultative path, assisting patient understanding, and uncovering/avoiding coercion. It uses two types of codes: frequency and evaluation, but does not consider non-verbal behaviors

Name of the instrument	Authors and year of publication	Observation-Based Vs Self-Report Measures	Target setting	Dimension/Scale/ Level/Themes	Categories/ Items	Response/ Score	Characteristics
Observing Patient Involvement (OPTION scale)	Elwyn, 2003; Elwyn et al., 2003	Observation-Based Instrument	All medical settings (generic)	Unidimensional (shared decision making)	12 items	Five-point scale, (from 'the behavior is not observed' to 'the behavior is exhibited to a very high standard)	The OPTION scale is used to evaluate decision outcomes and the quality of doctor-patient interactions. They assess patient involvement in treatment and care decisions, offering valuable information to enhance the decision-making process. Scores for the OPTION scale range from 0 to 48, with higher scores indicating extended behavior of the competencies
Decision Support Analysis Tool (DSAT)	Guimond et al., 2003	Observation-Based Instrument	All medical settings (generic)	6 domains (checking decision making status, providing information, clarifying values, discussing others involvement in the decision, clarifying the next steps and tailoring the discussion to the individual patient).	22 behaviors	Presence/absence	DSAT is employed to assess the outcomes of decisions and the quality of doctor-patient interactions. It evaluates patient engagement in treatment and care decisions, providing valuable insights to improve the decision-making process. Scores range from 0 to 12, marking certain elements based on the presence of at least some behaviors
Four Habits Coding Scheme (4-Hab)	Krupat et al., 2006	Observation-Based Instrument	All medical settings (generic)	4 Habit (Invest in the Beginning; Elicit the Patient's Perspective," involves; Demonstrate Empathy; Invest in the End)	23 items (1 Habit= 6; 2 Habit= 3 3 Habit= 4 5 Habit= 10)	5 performance levels within each coded behavior category. This process yields frequency counts of behavior	The 4-Hab assesses the physician's communication skills during patient interaction, focusing on reflective listening, empathy, information sharing, and involving the patient in treatment planning. It aims to encourage effective communication behaviors among healthcare providers
MEDICODE	Richard & Lussier, 2006	Observation-Based Instrument	All medical settings (generic)	4 major headings (General knowledge, Knowledge of the drug, Discussion of prescription, Effects of the drug)	40 topical descriptors relating the 4 major headings	Identification of themes and presence of the 40 topical descriptors relating to the 4 major headings	MEDICODE describes medication-related information in medical consultations. It identifies instances of medication discussions, notes the context and themes, and records contributions from both the physician and patient.
Treatment Recommendation Actions and Responses	Stivers & Barnes, (2018)	Observation-Based Instrument	All medical settings (generic)	7 interactional aspects (Social action; Strength of Endorsement; Multiple medications; Medication reference; Partnership reference; Opportunity space; Patient uptake) 5 non-interactional variables	Option, explanation and examples for each dimensions	Presence of each options	CA-oriented coding system that focuses on micro-analytical and sequential examination of communication practices. It classifies different communicative action types through which treatment recommendations are conveyed
Coding system for doctor-patient communication in Oncology (ONCODE)	Alby et al. 2021	Observation-Based Instrument	Oncology	7 interactive dimensions 10 non-interactional variables	Descriptors dimension and examples in each stage of the oncological visit	To assign a score (0-2) to the interaction between the doctor and the patient at each phase of the visit and for each considered interact dimension, leveraging the connection between communicative behaviors carried out by the participants and phases of the visit. At the end of the coding, an overall score is obtained for each dimension, indicating the quality of the communication that occurred	Oncode assesses patient-centered communication in oncology by analyzing sequentially the entire interactive event. The tool evaluates the communication practices of all participants, focusing specifically on ethnically discordant interactions

Name of the instrument	Authors and year of publication	Observation-Based Vs Self-Report Measures	Target setting	Dimension/Scale/ Level/Themes	Categories/ Items	Response/ Score	Characteristics
The Human Connection Scale (THC)	Mack et al., 2009	Self-Report Measure	Oncology	5 relationship dimensions (the oncologist's attentive understanding of the patient's concerns about the illness; the relationship characterized by mutual care and respect; the patient's comprehension of information shared by the oncologist; the patient's trust in the oncologist; and the effective collaboration between the oncologist and patient)	16 items	4-point Likert scale A THC score is a summary of item responses (a higher THC score indicated greater relation; possible scores ranged from 16 to 64)	The THC scale measures the therapeutic alliance between cancer patients and their physicians, evaluating shared understanding, empathy, and trust. Higher scores indicate a stronger therapeutic alliance and increased emotional acceptance of cancer
Perceived Self-Efficacy in Interacting with Healthcare Providers (PEPPI/ PEFPI)	Maly et al., 1998	Self-Report Measure	All medical settings (generic)	Unidimensional (older patients' self-efficacy in doctor interactions)	10-item (PEPPI) 5-item short form (PEFPI)	5-point Likert scale (1= not at all confident; 5= very confident. The range of possible scores for the full PEPPI scale was 10 to 50 where 50 representing highest patient-perceived self-efficacy)	The full 10-item PEPPI and the 5-item short form PEFPI assess older patients' self-efficacy in doctor interactions. These questionnaires gauge the patients' ability to ask questions, receive satisfactory answers, be taken seriously, and have a physician attentive to their concerns. Higher scores indicate increased self-efficacy in doctor-patient interactions.
Patient Satisfaction Questionnaire Short-Form (PSQ-18)	Marshall & Hays, 1994	Self-Report Measure	All medical settings (generic)	7 dimensions	18 items	5-point Likert scale (strongly agree-strongly disagree)	PSQ-18 is a comprehensive tool for evaluating patient satisfaction with medical care. It covers various aspects such as satisfaction levels, technical quality of care, physician's attitude, communication, financial aspects, time spent with the doctor, and accessibility of care.
The Communication Assessment Tool (CAT, patient version)	Makoul et al., 2007	Self-Report Measure	All medical settings (generic)	Uni-dimensional	15 items	5-point Likert scale	"The Communication Assessment Tool consists of 15 items rated on a five-point scale, enabling patients to assess physicians' interpersonal and communication skills post-encounter. Its goal is to offer patients a comprehensive evaluation of physicians' communication abilities, emphasizing strengths and pinpointing areas that might need attention for improvement
Shared Decision Making Questionnaire (SDM-Q-9) Shared Decision Making Questionnaire – Doctors (SDM-Q-Doc)	Kriston et al., 2010; Scholl et al., 2012	Self-Report Measure	Chronic diseases	Uni-dimensional (Shared Decision Making - SDM)	9 items (SDM-Q-9) 9 items (SDM-Q-Doc)	6-point Likert scale (completely disagree-completely agree) Scores range from 0 to 100, indicating the level of shared decision-making, with 0 being the lowest and 100 the highest	SDM-Q-9 and SDM-Q-Doc assess the decision-making process in medical encounters from both patients' and physicians' perspectives. Respondents rate the 9 statements on a six-point scale

Name of the instrument	Authors and year of publication	Observation-Based Vs Self-Report Measures	Target setting	Dimension/Scale/ Level/Themes	Categories/ Items	Response/ Score	Characteristics
Patient-Physician Discordance Scale (PPDS)	Sewitch et al., 2003	Self-Report Measure	Chronic diseases and clinical practice	patient– physician discordance on 5 aspects of the patient's health status and 5 aspects of the office visit	10 items	4-point Likert scale Each individual discordance score addresses a distinct facet of the patient's health, treatment, or the office visit. A positive score signifies that the patient's assessment for a specific item exceeded the rating provided by the physician. Yet, while aggregating the outcomes, positive variations in some aspects might counterbalance negative discrepancies in others. Consequently, an average difference of 0 might denote either complete harmony across all aspects or substantial disparities in various areas.	PPDS is a 10-item questionnaire intended for use by both patients and physicians following medical encounters. It focuses on assessing the divergence in evaluating health-related information, particularly in the context of chronic diseases
Mutual Understanding Scale (MUS)	Harmsen et al., 2005	Self-Report Measure	General practice	five consultation aspects were used to assess Mutual understanding (Subjective aspect covering the initial health complaint presentation and salutation; Objective aspect aimed at attaining objectivity through anamnesis and physical examination; Analysis aspect focusing on diagnosing or analyzing the health issue; Plan aspect addressing treatment, advice, or planning for the health issue. Additionally, questions about the cause of the health complaint are also included)	7 Open questions 15 Close – ended questions	Text and yes/no answers	MUS is used in multicultural settings to measure the level of mutual understanding between patients and doctors regarding the topics discussed during medical encounters
Functional Assessment of Cancer Therapy Scale (FACT-G)	Cella et al., 1993a, 1993b; Weitzner et al., 1995	Self-Report Measure	Oncology	4 domains of HRQOL in cancer patients (Physical Well-Being, Social/ Family Well-Being, Emotional Well-Being, Functional Well-Being)	27-item	5- point Likert scale	FACT is a self-report tool designed to assess the quality of life in cancer patients. It measures physical, social, family, and emotional well-being

Discussion

Coding systems and self-report measures play a crucial role in evaluating doctor-patient communication in oncology, offering both advantages and limitations. Among the advantages of such systems there are the following:

1. Comprehensive Evaluation: Coding systems enable a comprehensive evaluation of various aspects of communication, including information delivery, reassurance, empathy, and emotional support. This provides a nuanced understanding of the communication dynamics.
2. Standardization: These systems provide standardized criteria for evaluating communication, allowing for consistent assessments across different interactions and settings.
3. Quantitative Analysis: Coding systems facilitate quantitative analysis of communication data, enabling researchers to identify patterns, correlations, and trends in doctor-patient interactions.
4. Training and Education: They serve as valuable tools for healthcare provider training and education, helping to improve communication skills by highlighting areas for improvement.
5. Targeted Assessment: Some coding systems are tailored to specific phases of the medical visit or focused on particular aspects such as emotional cues or decision-making, allowing for targeted assessment in these areas.

While these systems offer valuable insights into doctor-patient communication in oncology, researchers and practitioners should be mindful of their limitations among which there are the following:

1. Subjectivity: Coding systems may involve subjective interpretation, as coders need to interpret and categorize verbal and non-verbal behaviors. This can introduce bias and affect the reliability of the assessments.
2. Complexity: Some coding systems may be complex and require extensive training for accurate implementation, limiting their practicality for widespread use.
3. Inability to Capture Context: While coding systems provide detailed analyses of communication behaviors, they may struggle to capture the nuanced contextual factors that influence interactions, such as cultural differences or individual patient preferences.
4. Focus on Verbal Communication: Many coding systems primarily focus on verbal communication, potentially overlooking important non-verbal cues and aspects of communication.
5. Resource Intensive: Implementing coding systems, particularly those involving audio or video recordings, can be resource-intensive in terms of time, expertise, and technology.

This brief literature review provides a practical overview of some tools used to assess and analyze doctor-patient interactions in oncology settings. However, doctor-patient communication is a complex event. Employing different instruments to assess communication during and after the encounter might broaden our understanding of the event, aiding in refining communication practices and fostering a more positive patient perception, ultimately impacting the patient's well-being.

Conclusions

Despite the advancements in coding systems for analyzing doctor-patient communication in oncology, there are still some research gaps that need to be addressed. Most investigations have been conducted in America or the UK. However, it would be interesting to extend research on these topics to various regions around the world to examine how cultural backgrounds and local healthcare systems impact the organization of communication. Additionally, further investigation is needed to assess the impact of using coding systems in healthcare training and practice. Addressing these research gaps will enhance our understanding of doctor-patient communication in oncology and contribute to the development of more effective communication practices.

Ethical approval

The literature review did not involve an empirical study with human subjects.

Data availability statement

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Declaration of Conflicting Interests

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