

Review

Clinician characteristics, communication, and patient outcome in oncology: a systematic review

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Abstract

Objective: The aim of this study was to review the literature on clinician characteristics influencing patient–clinician communication or patient outcome in oncology.

Methods: Studies investigating the association of clinician characteristics with quality of communication and with outcome for adult cancer patients were systematically searched in MEDLINE, PSYINFO, PUBMED, EMBASE, CINHALL, Web of Science and The Cochrane Library up to November 2012. We used the preferred reporting items for systematic reviews and meta-analyses statement to guide our review. Articles were extracted independently by two of the authors using predefined criteria.

Results: Twenty seven articles met the inclusion criteria. Clinician characteristics included a variety of sociodemographic, relational, and personal characteristics. A positive impact on quality of communication and/or patient outcome was reported for communication skills training, an external locus of control, empathy, a socioemotional approach, shared decision-making style, higher anxiety, and defensiveness. A negative impact was reported for increased level of fatigue and burnout and expression of worry. Professional experience of clinicians was not related to communication and/or to patient outcome, and divergent results were reported for clinician gender, age, stress, posture, and confidence or self-efficacy.

Conclusions: Various clinician characteristics have different effects on quality of communication and/or patient outcome. Research is needed to investigate the pathways leading to effective communication between clinicians and patients.

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Introduction

Effective communication allows the clinician to assess [1,2], inform [3], and support [4] the patient and has been associated with positive patient outcomes such as physical and emotional wellbeing, pain control, adherence to treatment, accuracy and completeness of assessment of symptoms and side-effects, patient satisfaction, information recall, and psychological adjustment [5–9].

Studies investigating factors that influence patient–clinician communication and patient outcome can be categorized as follows: (i) theoretical models and approaches used by clinicians, such as patient-centered communication and shared decision-making [7]; (ii) relational aspects between patient and clinician, such as working alliance and affect regulation [9–11]; (iii) patient characteristics, such as psychiatric comorbidity, coping, social support, C-prone personality, or alexithymia [12–16]; and (iv) clinician characteristics [17–19].

Despite their crucial role with regard to communication and patient outcome in oncology, clinician characteristics have rarely been investigated. The objective of this review is to summarize the existing knowledge with regard to the

impact of clinician characteristics (aspects that distinguish one clinician from another, such as experience, training, burnout, model preference, or approach), on communication and patient outcome. That knowledge may help ameliorate communication in cancer care and may guide communication skills training.

Methods

Search strategies

This systematic review is based on the guidelines of the preferred reporting items for systematic reviews and meta-analyses statement [20–22].

Studies investigating an association between clinician characteristics and quality of communication with adult cancer patients or outcomes for adult cancer patients were eligible. Case reports and studies not published in English were excluded. The study subjects were clinicians working in an adult oncology service.

A first search of MEDLINE, PSYINFO, PUBMED, EMBASE, CINHALL, the Cochrane Library, and Web of Science for eligible articles was performed (for keywords,

see Table 1); following this first search, other possible keywords were found in the retrieved articles and a second search of MEDLINE, PSYINFO, EMBASE, and the Cochrane Library was conducted (Table 1). A third search, (run in November 2012), replicated the second to update this review with articles published since that second search.

Selection criteria

Eligibility assessment of titles and abstracts from the first search was performed independently by two of the authors (MdV, CM). If it was not possible to reach a decision, the full text was studied. Disagreements between reviewers were resolved by consensus. In case of persistent disagreement, a consensus with the last author was planned (but was never necessary). All titles and abstracts of the second and of the third search were evaluated by the first author based on the criteria used for the first search. In case of doubt, a consensus with the last author was arranged (which was necessary once).

Articles were excluded if they did not include patients with cancer or if they did not focus on clinician characteristics, communication, or patient outcome. Articles were also excluded if they were not written in English or if they did not use valid measurements. Additionally, articles were excluded if they measured all variables by self-reported questionnaire filled in by the clinicians, because that jeopardized the interpretation of results. For example, a clinician with inflated self-esteem might rate themselves as highly empathic, their communication as positive, and their patient as satisfied. Such a result would not provide meaningful data. Articles were included if they reported an association (or lack of association) between clinician characteristics and quality of communication or patient outcome.

Data extraction

Full texts of articles were evaluated by the first author as follows: (i) general information (authors, year, and country); (ii) aims of the study; (iii) study sample (number and demographics of clinicians and patients, including type of cancers); (iv) study design and assessments; (v) clinician characteristics; and (vi) main findings. The primary patterns examined were associations (or lack of association) between clinician characteristics (aspects that distinguish one clinician from another) and 'patient outcome' or 'clinician-patient communication'. The investigation was limited to a systematic review because the results of the studies were too heterogeneous to allow a meta-analysis.

Results

Included studies

A total of 1055 non-duplicated references were identified. After excluding articles not written in English ($N=106$), those outside oncology ($N=139$), those not taking account of communication ($N=450$) or clinician factors (204), those without measurements ($N=61$), and those with pediatric patients ($N=25$), 70 remained. A further 36 were excluded for methodological reasons (such as not being based on reliable statistics or methods not adequately defined), because they relied only on clinician self-reported assessment or focused on cancer prevention and not treatment ($N=4$) or did not address cancer patients ($N=3$). This led to the inclusion of 27 articles (see flow chart in Figure 1).

Study characteristics and results are summarized in Table 2 in the supplemental appendix.

Table 1. Keywords MeSH of the first and second literature search

First search

- 1) oncologist*.mp or medical oncology or clinician*.mp or clinician*.mp or clinician*.mp
- 2) (neoplasms or medical oncology or oncology.mp) or (cancer.mp or neoplasms) or (neoplasms or neoplasms.mp)
- 3) (communication or communication.mp) or clinician-patient relations or communication skills.mp, or doctor-patient interaction.mp
- 4) (defense mechanisms.mp or defense mechanisms) or affect regulation.mp or emotional regulation.mp or (empathy.mp or empathy) or (locus of control.mp or internal-external control) or defensive functioning.mp or (emotional stress.mp or psychological stress)
- 5) #1 AND #2 AND #3 AND #4

Second search

All above listed keywords and

- 6) (patient outcome.mp or treatment outcome) or patient evaluation.mp or (anxiety disorders or comorbidity or mental disorders or mood disorders or patient psychiatric comorbidity.mp or depressive disorder) or (mental recall or patient information recall.mp) or (patient satisfaction.mp or patient satisfaction)
- 7) all words were introduced four times each time coupled with either oncologist, clinician, doctor, or clinician: fatigue*.mp, perceived stress*.mp, psychological distress*.mp, stress*.mp, attitude*.mp (burnout, professional, or burnout*.mp), experience*.mp, warmth*.mp, patience*.mp, perception of barrier*.mp, years of practice*.mp, training*.mp, perceived responsibility*.mp, preference*.mp, personal control*.mp, empathy*.mp, confidence*.mp, self-efficacy*.mp, locus of control*.mp (job satisfaction, or job satisfaction*.mp), coping*.mp, motivation*.mp, conscientiousness*.mp, cognitive ability*.mp, anxiety*.mp, depression*.mp, emotional involvement*.mp, belief*.mp, competence*.mp, attentiveness*.mp, orientation*.mp, role*.mp or knowledge*.mp
- 8) #1 and #2
- 9) #3 or #4
- 10) #5, #6, #7 and #8

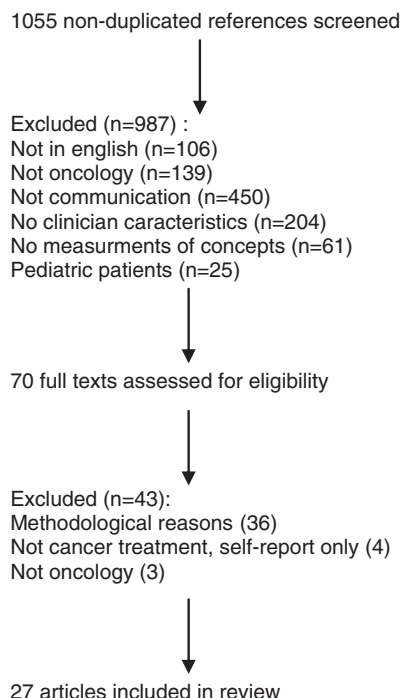


Figure 1. Flow chart of the selection procedure

Characteristics and study designs

Clinician characteristics, studied as a primary or as a secondary objective, were gender, age, communication skills training, professional experience, levels of fatigue, stress and burnout, posture, attitudes toward psychosocial issues, locus of control, confidence, decision style, empathy, affect, and defensive functioning.

Twenty-five of 27 articles were published in 2001 or later. The majority of the studies were conducted in the USA ($N=9$) and addressed patients with various types and stages of cancer.

Different study designs were used, such as controlled and uncontrolled, randomized and not randomized, prospective and retrospective, and cross-sectional, experimental, and observational. Clinician characteristics were measured by self-report questionnaires or ratings by patients or observers.

Clinician gender

The overwhelming majority of studies reporting on the effect of clinician gender found no influence on patient outcome or on quality of communication. Gender had no effect on clinician predictions of patient treatment preference or on agreement for decision-making preferences [42]. It had no effect on indication for chemotherapy [35] or on communication concerning health-related quality of life (HRQL) [28]. It had no influence on the concordance between clinician and patient perceptions of patient distress and need for support [36,41] or on patient perception of care, information exchange, affective behavior,

coordination, or health promotion [23]. In addition, gender was not associated with responses to empathic opportunities. Gender was associated with occurrence of empathic opportunities, which occurred in 52% of consultations between female patients and female clinicians, in 44% of consultations between female patients and male clinicians, and in 28% of consultations between male patients and either female or male clinicians [38]. Finally, patients rated knowledge and overall level of care more positively for male clinicians [23].

Clinician age, experience, and specific training

The only study to examine the relationship of clinician age to empathy found an association with younger clinicians responding more often to empathic opportunities [38]. Other studies examined the relationship of clinician age to HRQL communication [28], prescription of chemotherapy, [35] and capacity to detect patient distress [36,41]. None found an effect.

There was no correlation between clinician experience and communication or patient outcome [17,18,28,35,38,41].

Five studies found a correlation between training (or years of training) and communication (or patient outcome) [18,27,30,36,42]. Clinician and patient agreement for patient decision-making preferences increased with years of clinician training [42]. Communication skills training (CST) significantly improved clinician skills [18,27,30,36] and patient outcome (satisfaction with the clinician's performance) [27]. One study reported a lack of correlation between CST and clinician response to empathic opportunities [38], although the type of training was not described.

Clinician level of fatigue, stress, and burnout

Higher levels of fatigue and burnout, but not clinician stress, correlated with poor communication performance, accounting for more than one third of the outcome variance [17]. Also, patient perceived 'busyness in hospital staff' significantly affected patient perception of clinician empathy [13].

Clinician posture or nonverbal behavior

In two studies [26,44], patients evaluated clinician quality of communication by watching simulated consultations with standing or sitting clinicians. Clinicians who sat during the consultation were rated higher on overall impression and compassion. However, almost half of the patients had no posture preference or else preferred the standing clinician. There was no association between patient-evaluated quality of clinician communication and patient satisfaction with clinician communication [26,44].

Nonverbal communication (e.g., monotone voice and speech rate) was related to patient involvement in communication [43]. Scores on nonverbal expression of empathy

(nods, facial expression, gestures, and touching) increased following CST [30].

Clinician socioemotional or technical preferences and communication styles

Patients treated by clinicians who focused more on social and emotional aspects of patient care showed lower anxiety and depression than those treated by clinicians who emphasized technical and scientific aspects [6]. Socioemotional oriented clinicians also showed more empathy [38]. However, one study showed no impact of clinician preference on patient satisfaction, distress, self-efficacy, or perceived control [45].

Clinician participatory or shared decision-making style (involving the patient in the decision making) was positively associated with patient sense of trust, control, and self-efficacy. It was negatively associated with patient feelings of uncertainty [24] and predicted patient satisfaction with the 'shared decision making skills' and treatment decisions of the clinician [40]. Patient-centered clinicians (those allowing the patients' subjective or illness experience to emerge in the consultation) were rated as warmer, less hurried, and allowing more input from the patient [29]. Positive communication (e.g., reassurance, acknowledgment, or shared humor) by the clinician predicted increased communication involvement of the patient and less decision regret [43]. Finally, clinician willingness to discuss HRQL increased the probability of the clinician discussing emotional aspects of disease with the patient [28].

Clinician empathy

Lelorain *et al.* reported that empathy was associated with higher patient satisfaction, improved psychosocial adjustment, and less psychological distress and need for information [46]. However, all studies in that review assessed empathy as an outcome (most often of CST) and not as a clinician characteristic and were therefore not included in our review.

Clinician locus of control

Locus of control [LOC; the belief that life outcomes are (at least in part) controlled by one's own actions (internal LOC) or by external forces (external LOC)] influences communication. In three-person interviews, external LOC was associated with less premature and more appropriate information, higher frequency of utterances directed to the relatives of patients, and lower frequency of utterances directed to the patient. External LOC was also associated with use of more assessing, checking, and summarizing communication skills. In addition, before and after CST, clinicians with an internal LOC showed increased acquisition of communication skills. However, all three studies were conducted by the same research group,

the sample size was relatively small and there was important variance in measurements and differences at baseline [32–34].

Clinician affect and defensive functioning

When all clinician variables were controlled except for the expression of worry, patients recalled less information presented by a worried clinician and perceived their situation as more severe. Patients also reported higher levels of state anxiety and had higher pulse rates [39]. Clinician anxiety generated by uncertainty (about treatment decisions or outcome) was significantly related to patient decision satisfaction with higher clinician anxiety related to higher patient satisfaction [37].

Following CST, clinicians with better defensive functioning (more mature defenses, such as affiliation compared with denial) showed a higher adherence to an ideal prototype of a patient-interview [25].

Clinician confidence

Clinician confidence was associated with a better ability to perceive patient information needs but not with patient worry. Patients found the consultation 'very satisfying' when conducted by clinicians with higher confidence in communicating about difficult matters [31]. However, clinician confidence in addressing patient concerns was not related to empathic responses [38]. Clinicians, who over-rated patient satisfaction, were rated by patients as less empathic and less attentive [45].

Discussion

This review reveals that the following clinician characteristics have a positive impact on quality of communication and/or patient outcome: trained in communication skills, an external locus of control, empathy, favoring a socioemotional approach and shared decision-making style, higher anxiety levels, and more mature defensive functioning. A negative impact was reported for higher level of fatigue and burnout and expression of worry. Clinician professional experience was not related to communication or patient outcome and results diverged for clinician gender, age, stress, posture, and confidence or self-efficacy.

The fact that CST was consistently associated with communication and patient outcome confirms the importance of implementing CST in the curriculum of clinicians [47]. Because LOC plays a role in the assimilation of CST, integrating this variable into CST, for example by means of individual supervision [48], might be beneficial. Training should also address the fact that clinician preference for treatment or style plays an important role in the consultation process because it influences patient satisfaction, anxiety, depression, and adherence to treatment. Clinicians should therefore be

made aware of their preferences and the possible consequences for the patient.

Clinician empathy was associated with patient outcome but the results were contradictory possibly because of the use of different definitions of empathy. Additionally, the role of empathy might be more complex. None of these studies report a possible negative effect, whereas the literature suggests that empathy can have a negative impact on group [49] and on reconciliation processes [50]. Because patient desire for information has been found to be an indirect effect of empathy [13], empathic behavior could, for example, lead to an increase of information, which might overload a patients' capacity and thereby compromise their adaptation to disease. The confusion with regard to definitions, researcher bias, and lack of research on empathy and its effects calls for more rigorous studies that investigate the specific role of empathy.

Level of fatigue and clinician burnout, being associated with poor communication performance [17], illustrates how important it is to pay attention to clinician working conditions and skills for handling complex and emotionally challenging situations [51].

The importance of self-awareness was illustrated by a study showing that clinician affect (anxiety, uncertainty, and worry) and clinician regulation of their own affect (defensive functioning) was associated with patient outcome and quality of communication [25,37,39]. The observation that increased anxiety of the physician was associated with positive patient outcome [37] is an interesting result. Anxiety of the clinician in this context may indicate increased sensitivity to the patient's situation, thereby leading to a more appropriate perception of patient needs and thus an increased alliance. We imagine that beyond a certain level of clinician anxiety, defense mechanisms such as denial might become counter-productive and hamper perception of patient needs.

Professional experience was not found to impact patient outcome. This might be because of certain clinician routines developed over time that neutralize possible effects of experience. However, because of the unclear definition of professional experience and its confusion with professional training or education, we could not draw conclusions.

With regard to the divergent results, it seems that characteristics such as gender might have an impact on communication or on patient outcome depending on patient characteristics. Also, clinician age was related to empathic responses [38] but not to other communication outcomes such as HRQL communication [28]. To understand such divergent results, pathways have been proposed to investigate how clinician characteristics impact patient outcome; for example, how they could be moderated by patient-specific variables before influencing patient outcome [13].

Clinician stress was assessed by measurements of physiological stress [17] and by patient-perceived 'busyness in hospital staff' [13]. Because these two operations cannot be compared, as illustrated by the study of Brown *et al.* [17], we could not draw conclusions [17].

Although clinician confidence seemed to impact patient satisfaction (patient outcome) [31], it was not related to empathic response (communication) [38]. This again reveals that quality of communication and patient outcome are not simultaneously influenced by clinician characteristics.

Although these studies generate useful information about the role of clinician characteristics on patient-clinician communication and on patient outcome in oncology, several issues remain unresolved. How do clinician characteristics influence communication or patient outcome? Is the influence of clinician characteristics mediated or moderated by disease factors (type or stage of cancer), by patient factors (age or gender), by contextual and cultural factors (setting, generational influences or Latin vs. Nordic countries), or by other clinician characteristics? Are there interactions between clinician and patient behavior and/or characteristics? It is more important to understand how clinician characteristics influence patient outcome than to know that they do have an impact. More studies are needed to answer these questions.

Finally, the importance of the relational factor (intersubjectivity) or the 'connectional dimension of medical care' [52], cannot be ignored. All too often, it is not known whether clinicians included in these studies see their patients for the first time or have been seeing them for years, nor how the quality of their relationship is perceived. Empirical evidence confirms the crucial role of a working alliance in healthcare where alliance is associated with patient self-efficacy, satisfaction, adherence, and perceived utility of treatment [53–55]. In line with these observations in general medical care, length of the patient-clinician relationship is significantly associated with cancer survivors' perceived quality of care [23] and working alliance associated with specific communicational behavior in the oncology setting [56].

Our study and future studies investigating the impact of clinician communication skills related to patient outcome will improve the quality of clinician training and thereby the quality of cancer care.

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Conflict of interest

The authors declare no potential conflicts of interest.

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Supporting information

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