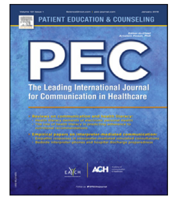
Patient Education and Counseling 102 (2019) 388–393

Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou



Discussion

The role of linguistics in improving the evidence base of healthcare communication

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ARTICLE INFO

Article history:
Received 11 April 2018
Received in revised form 10 September 2018
Accepted 14 September 2018

Keywords:
Evidence-based
Patient-centered communication
Pragmatics
Conversation analysis
Linguistic analysis
Integrative framework
Health communication
Six function model

ABSTRACT

Objective: The aim of the study is to show how qualitative, linguistic analysis can be purposefully integrated into health communication research, based on the functions and outcomes of medical communication proposed by de Haes and Bensing 2009 [1].
Methods: This article proposes a theoretical framework advancing health communication research and does not present primary research. The cited papers were selected on the basis of their relevance to the current purpose of the study, without the intention of being exhaustive.
Results: Linguistic and conversation analytic research supports the legitimacy of commonly recommended patient-centered communication skills. However, research that directly relates linguistic analysis to certain functions and outcomes of the medical interview is sparse.
Conclusion: Integrating linguistics into health communication research enhances the evidence base of healthcare communication and helps to develop effective communication training materials.
Practice implications: Future research designs should purposefully and directly connect linguistic analysis with the functions and the outcomes of the medical interview.

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1. Introduction

1.1. Evidence-based medicine versus evidence-based healthcare communication

Healthcare providers are expected to stick to evidence-based medicine that integrates the best available research findings with individual clinical expertise [2,3] and should result in patients' improved health outcomes. In order to achieve this, a proper diagnosis and treatment plan need to be established, neither of which is possible without adequate communication.

Unfortunately, the evidence base of healthcare communication is not well developed yet [1], though studies show that the way physicians communicate and build rapport have an effect on patient outcomes [4–8]. Furthermore, there is also a relationship between the quality of physicians' communication and patients' adherence [9,10], therefore, it is worth discovering the essential elements of effective communication, which improves adherence and leads to better health outcomes.

1.2. Effective communication in health care

Several authors study healthcare communication and propose models or best practices that help effective communication between patient and provider. Without the intention of being exhaustive, these recommendations include: the Kalamazoo consensus [11], the Information-Motivation-Strategy Model [12], the method of Motivational Interviewing (MI) [13], and the Patient-centered Interviewing Method or the Four Habits Interviewing Model [14]. These models have much in common regarding the main features of effective, patient-centered communication, which is very well summarized by King and Hoppe [15]. Patient-centered communication became a more central need in medical care with the emergence of the biopsychosocial model [16] and includes exploring and understanding patient's perspective and psychosocial context, shared understanding of the problem and its treatment, and involving patients in choices [17].

Though the above mentioned models describe the necessary communication skills required to achieve patient-centered communication, in most cases the exact way of executing that verbal

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https://doi.org/10.1016/j.pec.2018.09.012
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behavior during the medical encounter remains unstated. Therefore, it could be beneficial to clearly link linguistics, and especially linguistic pragmatics, with health communication interventions across the research continuum [18]. Pragmatics is the study of language use or linguistic behavior and it aims to explain how (explicit and implicit) meaning is dynamically generated through coding-decoding and inferential procedures. Since language use influences the linguistic/formal choices (e.g., words, structure, or intonation) a speaker makes in order to convey intended meaning [19,20], pragmatics could help to relate recommended communication skills with real-life examples.

Furthermore, patient-centered communication is only a method of choice in health care, and may not be appropriate in every context. The basic communication skills need to be flexibly modified and tailored to the patient, the disease, and the healthcare setting [15,21]. Therefore, linguistic-pragmatic research could also help to establish empirically the effective elements of communication in different circumstances.

1.3. An integrative framework for health communication research

The aim of the study is to further the theory of de Haes and Bensing [1], who proposed to link functions of medical communication with their outcomes, or endpoints as the authors name it. It is done so by showing, through a few examples, what kind of linguistic and conversation analytic (CA) research could foster and support the effectiveness of certain communicative behavior. Eventually, a complex framework is proposed that purposefully integrates linguistic analysis into medical communication research. The direct relation of effective elements of communication (based on real-world interactions) to outcomes could improve the evidence base of effective health communication, an approach already pleaded for [1,22]. Furthermore, it helps providers to gain practical knowledge about effective communicative behavior.

The structure of the presented examples, showing how linguistic and CA research could be integrated into medical communication research, follows the six function model with related endpoints proposed by de Haes and Bensing [1], coupled with the communication skills belonging to those functions, summarized as best practice by King and Hoppe [15] (see Table 1 later). The six functions of the medical interview are (1) fostering the relationship, (2) information gathering, (3) information provision, (4) decision making, (5) enabling disease and treatment-related behavior, and (6) responding to emotions [1].

The following content is by no means exhaustive, regarding neither the recommended communication skills and endpoints, nor the linguistic and CA studies connected here to each part. Additionally, there is no distinction made between immediate, intermediate, and long term endpoints, as is presented by de Haes and Bensing [1]. The only goal of the study is to advocate an integrative approach that can enhance the quality and evidence base of healthcare communication research.

The study also tries to point out how a linguistic point of view can show the nuances in a seemingly simple recommendation for the use of a certain communication strategy, such as open-ended questions. Furthermore, linguistic-pragmatic theories are generally important to understand and analyze the conversational interaction between patient and provider.

2. Methods

2.1. Healthcare communication as conversational interaction

This discussion paper does not present empirical research, instead it aims to demonstrate how the integration of linguistic-pragmatic and CA theories and analysis contributes to the quality of health communication research. Therefore, the cited papers are only for illustrative purposes, deliberately chosen by the author on the basis of their relevance to the presented idea.

Since patient-provider interaction, like every conversational interaction, is dynamic, co-constructed by both participants [23], it is important not only to consider providers' communicative behavior, but patients' response to that behavior as well, and the way these two are connected or shape each other through the context [24,25]. Pragmatics considers language use, involving communication as a dynamic process [26]. This perspective, through the analysis of real-life interactions, may yield a better understanding of health communication mechanisms.

An essential point is that successful communication requires inferential mechanisms in order to convey and understand meaning. These inferential mechanisms are mainly based on shared knowledge or common ground, which are therefore crucial for mutual understanding [27,28]. If there is a mismatch between speaker's intention and listener's inference, problems arise in the communication [26,29] which can have significant consequences in case of a medical interview, for example, an inappropriate diagnosis. However, regarding the different levels of knowledge and the professional, cultural, and social backgrounds of patient and healthcare provider, the formation of such shared knowledge can be challenging.

Therefore, to avoid misunderstanding, it could be beneficial if inferences based on shared knowledge are explicitly checked by the provider during patient-provider communication, i.e. if the meaning intended by the patient equals provider's interpretation, and vice versa. This thought is in line with the idea of Clark and Schaefer [30], namely, that task-oriented conversation, where the current purpose is more demanding and presentations can be more complicated, requires stronger evidence of understanding than casual. Achieving this mutual understanding in medical encounters is the responsibility of the provider, and speaker accountability [31,32] does not apply to the patient in this context. In other words, patients cannot be held accountable for how their utterance is interpreted by the provider.

Taking these aspects into consideration, it follows that an analysis of the medical interview from an interactional pragmatics perspective could help to explore the ways speaker's (intended) meaning and joint or interactionally achieved meanings are negotiated and to discover the relationship between these meanings [32].

The next section shows how linguistic and CA research could be specifically related to and integrated with health communication research, based on the six function model of de Haes and Bensing [1].

2.2. Linguistic and conversation analytic research supporting the functions of the medical interview, their endpoints, and related communication skills

The list of endpoints and communication skills mentioned in the study is not exhaustive (Table 1). They were only chosen for exemplary purposes and are obviously not the only relevant ones.

2.2.1. Function: fostering the relationship – endpoint: patient satisfaction - skill: appropriate language use

Although it is a basic requirement for healthcare providers to speak in a simple, comprehensible way, in practice it is hard to define what this means with each patient. Furthermore, patients differ regarding how much control they require over the discussed agendas or if they want to disclose psychosocial information. Patient-centered medicine means that doctors are sensitive to these factors and tailor their communication accordingly [22]. Pragmatics and health literacy research [33] could help to identify those clues in patient's language that show patient's attitude in these matters.

Table 1
Six function model of medical communication with related endpoints and communication skills.

	Function of the medical interview	Endpoint	Communication skill
1	Fostering the relationship	Patient satisfaction	Appropriate language use
2	Gathering information	Adequate diagnosis and treatment plan	(Open-ended) Questions
3	Providing information	Improved recall and understanding	Explain problem, diagnosis, and treatment
4	Decision making	Satisfaction with decision, Improved health	Explore patient's preferences and understanding
5	Enabling disease and treatment related behavior	Treatment adherence	Assess patient's readiness to change health behaviors
6	Responding to emotions	Patient's sense of support	Express empathy, sympathy, and reassurance

Simplified using de Haes and Bensing [1] and King and Hoppe [15].
Note: the lists of endpoints and communication skills are only examples and by no means exhaustive.

Salmon and colleagues [34] suggest that to evaluate the relationship between patient and practitioner researchers should triangulate between observation, patient perspective, and practitioner perspective. This approach helps to mitigate the influence of the researcher's (subjective) interpretation and can help to explore the factors that are important for the patient in the communication.

2.2.2. Function: gathering information – endpoint: adequate diagnosis and treatment plan – skill: (open-ended) questions

Basically all models in healthcare communication recommend the use of open-ended questions based on the idea that they offer patients a chance to freely present all their problems, medical and psychosocial as well [35]. This recommendation does not consider the fact that the open-ended versus closed-ended distinction is mainly based on the grammatical structure of the question. However, the pragmatic aspects of a question can modify the criteria set by its syntactic form, turning a traditionally closed-ended 'yes-no' question into an open-ended one in a certain context but not in another. Therefore, instead of the bipolar distinction made between closed versus open questions, which can lead to discrepancies in the analysis, degrees of openness may be considered between these two polarities [36]. However, 'General inquiry questions' seem to solicit the longest problem presentation from patients [37].

Furthermore, healthcare providers should be aware of the fact that questions impose various constraints on the answerer: they convey presuppositions, set agendas, and show preferences for the expected answer, for example, for affirmation over disaffirmation. In other words, question design can increase the chance for a preferred answer [38,39]. In medical context this is supported by the study of Heritage et al. [40], who found that question design with positive polarity evokes more affirmative answers from patients than negatively polarized questions. This results in reducing patients' unmet concerns, which helps to make a proper diagnosis.

Additionally, question format also shows physicians' understanding of patients' reason for visit (e.g., new, follow-up concerns, or chronic-routine visits). The proper solicitation of problems, i.e. to fit question format to the reason for visit, influences patients' perceptions of physicians' competence and credibility, which can affect patient satisfaction [41].

In summary, linguistic and CA research supports the use of open-ended questions. Nonetheless, they also highlight the fact that not only the openness of a question is important in medical interview, but also its format regarding the preferred answer and the presuppositions conveyed by it should be taken into consideration.

2.2.3. Function: providing information – endpoint: improved recall and understanding - skill: explain problem, diagnosis, and treatment

In case there is a mismatch between the agendas and perspectives of the patient and the provider, it is the responsibility of the provider to discover and adjust these differences [15]. In order to achieve this, patients' active participation is needed during information provision as well.

Peräkylä [42] discovered that the explication of the evidence of the diagnostic conclusion is more effective than plain assertion in fostering patient's participation in the discussion about diagnosis. Furthermore, prediagnostic statements, such as online explanations during physical examination and diagnostic explanations during verbal examination could also enhance patients' understanding of the medical reasoning and procedure leading to a diagnosis [43].

The use of 'perspective checking questions' (PCQs) (similar to MI's elicit-provide-elicit technique [13]) that explore patients' knowledge, psychosocial features, understanding, and need for further information is also beneficial during information provision [44].

2.2.4. Function: decision making – endpoint: satisfaction with decision, improved health – skill: explore patient's preferences and understanding

Shared decision making or 'informed collaborative choice' [12] takes patient's values and preferences into consideration. This function of the medical interview is dependent on the previous functions (good relationship, information gathering and provision), since it requires that patients are provided with the necessary information, which they understood well enough to be able to participate in the discussion.

Ho and Koenig [45] studied communication about the use of complementary and alternative medicine (CAM) between patient and provider. While CAM discussion could show patients' health beliefs, values, and preferences for treatment decision-making, they found that the provider's (non-judgmental) attitude, reaction, and the design features of a question about CAM use influence whether patients disclose and/or discuss the topic.

Projecting the idea, it seems reasonable to make non-judgmental inquiries about any other treatments the patient has received, since the answers can help the therapist to explore patient's preferences and expectancies that could affect their decision-making or their satisfaction with the decision.

2.2.5. Function: enabling disease and treatment related behavior – endpoint: treatment adherence – skill: assess patient's readiness to change health behaviors

The research of Connor and Lauten [46] fits very well into the framework proposed in this study, since they connect the linguistic analysis of diabetes patients' talk with outcomes, in a multi-method approach. Their results show that patient's expressed agency (degree of action) correlates with adherence, while negative affect relates to lower adherence.

Listening to patient's talk is also a bedrock of MI. It seems that the patient's change talk (i.e. statements revealing patient's attitude towards change), especially statements revealing commitment to change, is the link between provider's behavior and health outcomes [47].

In contrast to many health communication models focusing on providers' communication skills, the importance of patients' communication behavior is emphasized here. The practical implication is that providers could be taught what to listen to in

patients' talk and tailor their communication accordingly, specifically addressing the profile of the individual patient [46].

2.2.6. Function: responding to emotions – endpoint: patient's sense of support – skill: express empathy, sympathy, and reassurance

Empathy is one of the four key factors influencing patient satisfaction, next to open-endedness, confidence in physician's abilities, and general satisfaction [48]. Considering only the verbal presentations of empathy, a linguistic pilot study comparing patient-centered (PCI) versus clinician-centered interviewing (CCI) [49] found that speech quality accommodation and backchannel modulation characterized PCI but not CCI. Speech quality accommodation meant that participants were mirroring the speech tone or amplitude across a turn boundary, while backchannel modulation meant that the physician tended to use more empathic, affirming backchannels in PCI, compared to the neutral backchannels evident in CCI.

3. Results

As has hopefully become obvious by now, there is already a vast amount of linguistic and CA research that supports the legitimacy of recommended communication skills in medical encounters (Table 2). However, these results seem to constitute a field mainly existing separately from healthcare research, despite the fact that the importance of an inter- or cross-disciplinary approach towards healthcare communication is emphasized [26]. Linking linguistic research to functions of the medical interview and their related health outcomes would, on the one hand, encourage cooperation between disciplines and professions, and, on the other hand, improve the quality of health communication research.

4. Discussion and conclusion

4.1. Discussion

The study has shown how qualitative linguistic and CA research can be connected to and integrated with the results and recommendations about healthcare communication that have emerged so far. This approach is in agreement with the need of a mixed-method research in studying healthcare communication [50,51] and provides a deeper understanding and explanation of the mechanisms and effects of certain communication behavior in medical encounter [52].

The proposed idea in this study is that qualitative linguistic research could be purposefully and directly connected to certain functions of the medical interview and the possible endpoints conveyed by those functions. In other words, the research design should determine in advance the (1) function of the medical interview, with its related (2) specific endpoint(s), and (3) communication skills the planned (4) linguistic analysis focuses on. This way linguistic analysis would move from a descriptive to a more explanatory and predictive status.

4.2. Conclusion

Observational studies that specifically examine associations between a certain function of the medical interview and its related interactional practices with endpoints/outcome, could serve as the basis for planning Randomized Controlled Trials (RCT) in health communication research. That is, the manipulation of the communication strategies as independent variable(s) constitutes the intervention and the dependent variable is the previously determined endpoint or outcome. This idea is in accordance with the recommendations of Robinson and Heritage [53], and it helps healthcare communication become more evidence-based, a requirement that has not been sufficiently fulfilled so far [1,22,54].

The second advantage of connecting function–endpoint–communication skill–linguistic analysis in the research design is that it helps to develop an effective communication training material for students and providers in health care. Since patients and healthcare settings are different, the basic set of healthcare communication skills should be flexibly adopted and tailored to the individual patient and the context of health care [12,15,55]. By compiling and demonstrating real-world examples, the students are shown how to achieve the same function and endpoint of the medical interview with different communication strategies in case of patients with various characteristics and in various circumstances. It means that the students are not only told 'WHAT' to do in terms of behaviorally defined communication skills [14,54], but they are also shown 'HOW' they should achieve that.

Developing an appropriate, practice-based communication training program is essential, since studies demonstrate that it has a significant effect on the communication skills of the providers, and through that, on patient outcomes [9,56]. Tsai and her colleagues' work sets a nice example on how discourse analytic research can enhance the education of effective communication in medical care [35,44].

Table 2
Six function model of medical communication with related endpoints, communication skills and the focus of linguistic analysis.

	Function of the medical interview[a]	Endpoint[a]	Communication skill[a]	Focus of linguistic analysis
1	Fostering the relationship	Patient satisfaction	Appropriate language use	Health literacy research; Triangulation (observation, patient and practitioner perspective)
2	Gathering information	Adequate diagnosis and treatment plan	(Open-ended) Questions	Question format and design
3	Providing information	Improved recall and understanding	Explain problem, diagnosis, and treatment	Structure and placement of explanation; PCQ
4	Decision making	Satisfaction with decision, Improved health	Explore patient's preferences and understanding	Expression of non-judgmental attitude by the provider
5	Enabling disease and treatment related behavior	Treatment adherence	Assess patient's readiness to change health behaviors	Patients' talk
6	Responding to emotions	Patient's sense of support	Express empathy, sympathy, and reassurance	Speech quality; Back channel

Note: the lists of endpoints and communication skills are only examples and by no means exhaustive.
PCQ: perspective checking questions.
[a] Simplified using de Haes and Bensing [1] and King and Hoppe [15].

The third advantage of this approach is that it helps to discover cross-cultural differences regarding the requirements of effective healthcare communication. In the long run, this could help to overcome communication difficulties in medical encounters that arise from cultural differences.

4.3. Practice implications

Future health communication research should consciously integrate qualitative linguistic analysis into the research design. Deliberately connecting functions and related endpoints of the medical interview with communication skills and real-world data improves the evidence base of healthcare communication and helps to develop effective communication training material.

It is imperative though that effective healthcare communication is combined with the promotion of evidence-based treatment and not with the dissemination of ineffective therapies.

Declarations of interest

None.

Funding source

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgement

I would like to thank my supervisor, Dr. Enikő Németh T. for her helpful comments, and Alexandra Bakó for checking the language of the manuscript.

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