

Communication Study

Collaborative deliberation: A model for patient care



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ABSTRACT

Objective: Existing theoretical work in decision making and behavior change has focused on how *individuals* arrive at decisions or form intentions. Less attention has been given to theorizing the requirements that might be necessary for individuals to work *collaboratively* to address difficult decisions, consider new alternatives, or change behaviors. The goal of this work was to develop, as a forerunner to a middle range theory, a conceptual model that considers the *process* of supporting patients to consider alternative health care options, in collaboration with clinicians, and others.

Methods: Theory building among researchers with experience and expertise in clinician–patient communication, using an iterative cycle of discussions.

Results: We developed a model composed of five inter-related propositions that serve as a foundation for clinical communication processes that honor the ethical principles of respecting individual agency, autonomy, and an empathic approach to practice. We named the model ‘collaborative deliberation.’ The propositions describe: (1) constructive interpersonal engagement, (2) recognition of alternative actions, (3) comparative learning, (4) preference construction and elicitation, and (5) preference integration.

Conclusions: We believe the model underpins multiple suggested approaches to clinical practice that take the form of patient centered care, motivational interviewing, goal setting, action planning, and shared decision making.

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1. Introduction

Theories that seek to explain human decision making and intention formation, which often draw from economics, psychology, and sociology, have made significant strides over the last few decades [1,2]. However, existing theories have not to date focused on the *interpersonal* aspects that affect how decisions are made and

intentions are formed in health care interactions. Although some theoretical approaches have explored decision making performed in small groups [3–5], most have viewed decision making as a circumscribed activity, done by an individual *patient* as if in isolation, involving tradeoffs between a small number of mutually exclusive options. Decisions and intentions have been accepted as being influenced by information, emotions, and context. However, theories have not fully considered the contribution of *interpersonal* work, and have been slow to consider that the support and views of others play a significant role.

Recent inter-disciplinary work in sociology, health services research, and ergonomics has led to the proposal that decisions and intentions should be seen as a combination of mental work and

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embodied actions (or inaction) contingent on engagement with others [6,7]. In this article, we focus specifically on the context of health care, and argue that the dominant view of decision making has overlooked the reality that patients, in particular, turn to others for help and support. Often, this takes the form of turning to others, to clinicians, who have the explicit role of offering information, advice, and support, and of course, to family members and friends. We use the term *clinician* to indicate any health care professional who interacts with patients. Yet there have been few attempts to outline a process that would consider how best to support patients to undertake this task. Decision making approaches have not considered processes where participants work at interpersonal levels to interact, empathize, learn, consider alternatives, weigh the impact of new information, and form preferences.

Early decision making theories were derived from economics. Most were prescriptive and based on the concept of *unbounded rationality*, the idea that given perfect knowledge of the probabilities of events, prediction of future events was possible. Early research was based on the view that effective decision making should be the product of predicted likelihood and estimated value. The term “expected utility” was the shorthand for this theory [8]. Kahneman and Tversky argued that maximizing expected utility inadequately explains how humans approach decisions and instead emphasized the role of cognitive heuristics, which are rules of thumb that individuals use as mental shortcuts to simplify a complex decision making process, but which are prone to error [9,10]. Later theories acknowledge the idea of *bounded rationality*, which accepts that there are limits to what we can know, and that heuristics, or rules of thumb are used [11]. Viewing heuristics merely as sources of errors has been challenged. Gigerenzer and colleagues have argued that heuristics are often as effective, if not superior, to more deliberative decision making approaches [12]. Gigerenzer argues that humans can process information and decide at fast speeds, and that these methods are both adaptive and have the advantage of ecological validity [13]. Optimally, humans will use both ‘slow and fast thinking’, depending on context [14].

Arriving at decisions is typically a ‘messy and uncertain’ process [15]. Indeed, Simon argued that decision making often involves accepting something that is merely ‘good enough’, which he termed ‘satisficing’ [11]. Lindblom suggested that focusing on intermediate rather than long-term goals—‘muddling through’—is not only common and acceptable, but also a desirable way to deal with uncertainty [16], where proceeding step-by-step, adapting, reacting, consulting with others, and narrowing options by eliminating some possibilities early are the best strategies [17].

In this article, we argue that the theoretical underpinning of health care communication needs more attention [18]. Existing theoretical work has mostly focused on decision making and intention formation at the level of one individual. In contrast, we see the need for a conceptual model that considers *collaborative* effort. Not having a clear model impedes implementation because it makes it difficult to guide changes in practice and to develop measures [19].

Engaging patients is embedded in many models of patient–clinician interaction that have been advanced over the last three decades. For example, the concepts of patient centered care [20] and patient engagement [21–23] have become central themes in health policy. See Box 1 for a list of advocated approaches.

Despite different terms, the common theme is one of positioning the patient as a co-producer, whose views need to be actively sought, informed, respected, and integrated into practice. However, empirical data reveals that this approach has not become embedded in routine care [24]. In addition, we notice that the definitions of motivational interviewing [25], goal setting [26], and shared decision making [27] have been descriptions of *processes and competencies*, and have not considered underlying principles or concepts [28–30].

Box 1. Selection of terms advocating different approaches to patient-provider communication

Patient centered care [58]
 Patient engagement [15]
 Patient involvement [48]
 Informed patient choice [59]
 Motivational interviewing [60]
 Goal setting and action planning framework [19]
 Shared decision making [61]

We do not think the disciplines of psychology and sociology have adequately addressed this gap. Research on group-based decision making has focused on small group dynamics rather than on the inter-personal aspects of deliberation [5], and therefore have had limited relevance. By considering collaboration in health care encounters, we are entering a realm where people interact typically in dyads or triads, but rarely in small groups. This article describes a model that for the first time integrates a set of related propositions about how the process of supporting patients to consider different alternatives or priorities could be examined, evaluated, and, hopefully, improved. The eventual purpose of this model is to provide a better foundation for evaluating practice and developing measures, and, in due course, improving clinical practice.

2. Methods

2.1. Conceptual framework

To be useful, a theoretical model must be capable of achieving a stated purpose, such as explanation or prediction [31]. However, recognizing that we are dealing with a social phenomenon, we drew on Merton’s classic description of ‘middle range’ sociological theories [32,33]. These theories guide empirical inquiry but are not general theories of social systems. They are, as Merton says, ‘close enough to observed data to be incorporated into propositions that permit empirical testing.’ He argues against ‘total conceptual structures’ and advocates for theories that are ‘applicable to limited conceptual ranges’ [32]. Our focus on the clinical interaction led us to choose this approach. We follow an example of model building set by May et al., used for describing the process of ‘normalization’, the embedding of innovations into routine practice [34,35]. Developing middle range theories involves a number of phases: (a) defining the scope and aims of a model prior to developing a theory, (b) identifying an empirical generalization, (c) developing formal propositions from an empirical generalization, (d) explaining the form and significance of causal and relational mechanisms between phenomena, and (e) claiming knowledge (e.g., abstract explanations, analytic propositions, or experiential hypotheses) [32,33].

We define a model as a body of related ideas that forms the basis for describing, explaining, and predicting observed phenomena, and provide the following:

1. *Accurate description*: a model must provide a taxonomy (definitions) for the identification, differentiation, and codification of observed phenomena.
2. *Systematic explanation*: a model must provide an explanation of the sequential, causal, or relational mechanism at work at the level of observed phenomena.
3. *Knowledge claims (prediction)*: a model may lead to claims that are explanations, propositions, or hypotheses that may be tested under specific circumstances.

4. *Investigation*: a model must be both accessible (easy to understand) and, above all, testable, either by empirical methods or by more abstract means such as logical representations or simulations.

While our goal is to develop a middle range theory, we do not presume to accomplish it in one step. A first step is to propose a model for discussion, one that can be debated, tested, and refined.

2.2. Model development

We planned two dedicated meetings to initiate the process in Maastricht, Netherlands. We anticipated an iterative process, engaging multiple contributors over an extended period using many modes of communication. Experts were recruited purposefully, based on their reputation and willingness to collaborate, ensuring an international and multidisciplinary approach. The goal of the initial seminar was to agree on the need for a model to support deliberation about decisions, priorities, and intentions. Invitees were researchers in the field of clinician–patient communication, risk communication, and patient centered care. Background reading material was sent to participants in advance, including work describing the process of developing a middle range theory [35,36], previous theoretical approaches in the field of clinician–patient communication [37,38], and decision making [6,39,40].

At the first seminar, GE and AL presented summaries of research about patient centered care and clinician–patient communication, prior to facilitating discussion. The question was posed: “Is there a need for a deliberation model for clinician–patient communication? If so, what would be the key components?” A summary was sent to participants for review. After feedback, GE and AL created the first outline of a model, which was presented in the second seminar, to which additional experts were invited. Candidate propositions were shared with participants. Using a multi-stage, multi-model consultation process (email, conversations and audio-conferences), multiple iterations of the model were subjected to review, comment, and revision. In the final stage, AL and GE prepared a manuscript that described the emerging model. This was shared via email with seminar attendees, and others, for comment until agreement was reached.

3. Results

3.1. Defining aims and generating an accurate description

The following were engaged in the work: four social scientists (AL, TR, SG, CM), five clinical researchers experts in communication (RE, VM, TW, AE, GE), two epidemiologists (TvdW and AS), one psychologist (DF) and a health services researcher (PB), each with extensive backgrounds in clinician–patient communication research. Two face-to-face seminars were held (November 2010 and June 2011), two audio-conferences were convened and 18 cycles of manuscript development occurred. To widen involvement and disciplinary contribution, postdoctoral health service researchers were added to the group at the synthesis stage (SG, TW and PB). During early debate, there was considerable talk about cognition at the level of individuals rather than at interpersonal levels. Discussions were re-aligned to bring attention to the interactional and socially situated process of *supporting deliberation*. During the discussions, the scope of the work became broader, moving from consideration of decision support tools to other interactional processes. It was argued that in clinical practice, decisions and intentions are often contingent, tentative, and iterative. Patients and their clinicians often agree to try things out, explore possible

strategies, ‘muddle’ through, and re-assess. We also noted that decisions are often about priorities, rather than excluding one alternative for another. A decision (or, at least, an intention) to lose weight represents a commitment to changing behavior, where implementation is dependent on additional complex dynamic circumstances. In short, we noted that a model would need to be sufficiently generic to address a range of decisions, actions, intentions, and behaviors. Participants were therefore asked to consider the processes that might prove beneficial for a patient who is relatively inexperienced or lacks understanding of the relevant issues, yet faces a decision about next steps. A good example might be a patient who has received a new diagnosis of a long-term illness such as Parkinson’s disease and is asked to consider different treatment regimes, each with different side effects and benefits (see example in [Box 1](#)).

After considering iterative drafts of this work, contributors agreed on the following initial empirical generalization in relation to a deliberation process:

Deliberation takes place when participants cooperate to consider alternative courses of action, where alternatives are made explicit, are better understood, and where they are supported to think about their personal and relational preferences.

This initial generalization contained many underlying assumptions. These required elaboration, and were written as propositions, as follows.

3.2. First proposition (P1): constructive engagement

The first requirement is to be more explicit about the presumption of an interactive process of engagement, discussion, and deliberation. This process could be dyadic, but could also be distributed across many different individuals (in families, for instance), across an illness experience, or across many episodes and places [6]. The model presumes that two or more participants explicitly engage in a dialog, create a safe zone in which to do so, and explore the issues while treating empathy, curiosity about each other’s views, and respect as core values. We therefore drafted the following proposition, P1:

P1. *Collaborative deliberation takes place when interactions between participants are characterized by curiosity, respect, and empathy.*

3.3. Second proposition (P2): recognition of alternative actions

A second requirement is the recognition that alternative courses of action are available and worthy of being explicitly considered, including the option of no change or no intervention. Recognition of these alternatives may require extra social, cognitive, and emotional effort to ensure that alternatives being proposed are realistic and reasonable (from a range of perspectives), and not improbable alternatives based on inconsequential details, recognizing that patients alone cannot determine the availability (or the cost) of available interventions. We need to acknowledge that patients might not be aware of the disease or its consequences, e.g., high blood pressure, so patients should be adequately orientated to problems and associated consequences. Given the knowledge and power differential between patients and clinicians, it will more often, but not exclusively, be the role of clinicians to make alternative courses of action visible, so that they can be considered and navigated. We therefore drafted the following proposition, P2:

P2. *Collaborative deliberation takes place when interactions between participants recognize the existence of relevant, alternative potential courses of action.*

3.4. Third proposition (P3): comparative learning

A third requirement is the work needed to help participants become better informed about potential alternative courses of action. This is often considered to be solely directed at the patient, i.e., that he or she needs to *learn* more about the possible alternatives, and that the role of the clinician (or system) is to transmit, or facilitate, the transmission of information. It is not uncommon, however, for clinicians to be unaware of specific information that relates to the comparative advantages and disadvantages of alternative courses of action. Such information is often not known, readily accessible, or in formats that are easily understood. Both patients and clinicians potentially benefit from the availability of information technologies, which increasingly provide rapid access to health information, where more effort is being made to ensure veracity, and design for a wide range of numeracy and literacy levels. Notwithstanding the delivery mechanism, learning about the advantages and disadvantages of alternative courses of action is a key step toward being able to compare their attractiveness as solutions. Clinicians should make patients aware when 'sufficient' information is lacking. In addition, clinicians must judge how much information should be delivered, as more is not always better [41,42]. We therefore drafted the following proposition, P3:

P3. Collaborative deliberation takes place when interactions between participants compare alternative courses of action.

3.5. Fourth proposition (P4): preference construction and elicitation

A fourth requirement is the process required to form and elicit preferences. The complex process by which patient preferences are formed and constructed has been described by others [43,44]. Patients will inevitably form preferences based on the attributes of different alternative courses of action, and they will be based on appraisals of processes, procedures, and preferences for both shorter and longer-term outcomes. Critically, this proposition appreciates that preferences are formed using multiple approaches, analytical as well as non-analytical [45], and that heuristics play a vital part in how humans navigate complex decisions [12,46].

Appraisals of future action requiring behavior change will also be based on personal motivation, context, and a wide range of other contributing factors [47]. Preferences will change as new understanding is generated, and will be contingent on new information and changing impressions, especially when deliberation occurs over time and in conjunction with many people. Preference construction, and eventual elicitation, is at the heart of a deliberation process. We therefore drafted the following proposition, P4:

P4. Collaborative deliberation takes place when interactions between participants consider, construct, and elicit preferences in relation to alternative courses of action.

3.6. Fifth proposition (P5): preference integration

A fifth requirement is a process to integrate preferences, i.e., where the views, priorities, and opinions of both the patient and clinician are explicitly built into the next steps. Typically this occurs as part of agreeing to a subsequent course of action, where clinicians recognize potentially different pathways. There could be agreement to take treatment A rather than B, or a decision to decline rather than proceed to have surgery. Or, and more common in many settings, next courses of action might be preliminary or exploratory, e.g., initiating treatment in order to examine its effect

and suitability, or attempting a behavior change in order to avoid the need for medication.

In summary, this next step in a deliberative process would be deciding on an action that *takes into account* the views of the patient who has been engaged in a constructive dialog, been informed, compared alternatives, and been able to form his or her informed preferences, even if only tentatively—in short, a process that has integrated the informed preferences of the patient. We therefore drafted the following proposition, P5:

P5. Collaborative deliberation takes place when interactions between participants integrate individual preferences in determining the subsequent courses of action.

3.7. Synthesis

Box 2 provides a clinical illustration of how this process could operate in clinical practice. Note that the process may require

Box 2. Clinical example: Mary Smithfield develops Parkinson's disease

Constructive engagement

In her late 50s, Mary, a skilled artist, develops symptoms of pain and stiffness in her leg. She is diagnosed with Parkinson's disease. Her neurologist explains that a part of her brain is unable to produce sufficient dopamine. He is able to establish a relationship of trust with Mary, empathizes with her, and explains that decisions may need to be made about future treatments. For many months, Mary struggles to come to terms with the diagnosis, even denying her condition. She defaults on appointments to see her neurologist, yet he maintains contact and suggests that she makes time to see him. She declines. The neurologist writes and says that she can return to his clinic at any time.

Recognition of alternative actions

After a year, Mary notices more tremor and additional stiffness, such that her ability to paint is affected. She seeks advice from her neurologist. He suggests that it might be time for treatment, and describes a number of alternatives. One approach is to use either dopamine agonists or levodopa, in an attempt to increase the available dopamine in her brain. Another approach is to use what are called anticholinergic medications, which have a more immediate effect on tremor but are less effective in the long-term. Sensing the complexity, Mary is unsure and resistant to the idea of medication. She does, however, accept the offer to read more about the multiple possibilities.

Comparative learning

Mary reads as much as she can about the multiple treatment options. She talks with her husband about the benefits, burdens, and side effects of the options. She talks to a friend, and to someone on an online support group who has faced a similar choice. Although she'd like to make the choice herself, she asks the neurologist for a recommendation.

Preference construction and elicitation

The neurologist feels inclined to use dopamine agonists as the first line of treatment as they can delay the progression of the disease and allow levodopa to be reserved for later when additional treatment may be needed. However, Mary wishes to prioritize controlling her tremor, which is the most debilitating factor from her perspective. They discuss their different perspectives.

Preference integration

The neurologist hears how important it is to Mary to finish a set of paintings for a new opening in a few months. After discussion, they agree to use an anticholinergic drug for at least six months, and to review the situation at that point, recognizing that it would be possible to modify plans at that stage.

Table 1
The collaborative deliberation model: constructs and propositions.

Construct	Proposition
Constructive Engagement	P1: Collaborative deliberation takes place when interactions between participants are characterized by curiosity, respect, and empathy
Recognition of Alternative Actions	P2: Collaborative deliberation takes place when interactions between participants recognize the existence of relevant, alternative potential courses of action
Comparative Learning	P3: Collaborative deliberation takes place when interactions between participants compare alternative courses of action
Preference Construction and Elicitation	P4: Collaborative deliberation takes place when interactions between participants consider, construct, and elicit preferences in relation to alternatives courses of action
Preference Integration	P5: Collaborative deliberation takes place when interactions between participants integrate individual preferences in determining the subsequent courses of action

multiple encounters, and rests on the clinician accepting the relevance of context, emotional states, and a gradual acceptance of a need, or not, for intervention. Many other examples could be given, including how to elicit priorities when facing the challenge of dealing with diabetes, where lifestyle habits are as relevant as any therapeutic intervention, and where addressing ambivalence [48] or eliciting personal goals would be the deliberative task [49].

Table 1 provides a summary of the five constructs and propositions of the *collaborative deliberation* model. Fig. 1 suggests a relationship between the propositions of the model, and recognizes the critical part that context plays in mediating many of the interactions that are illustrated [50]. The proposition of *constructive engagement* envelops the other four propositions, illustrating that a respectful and empathic approach to communication is fundamental to good deliberation. Fig. 1 then illustrates a sequential interdependence between the other four propositions, where *recognizing alternatives* is a gateway step to the remaining three. In situations in which all parties agree that there is only one obvious unchallenged action, decision, or behavior, there is no need for deliberation. However, there is increasing acceptance that individuals' agency needs to be honored in health care contexts, even where the alternative, such as not taking action, may be viewed professionally as an unwise choice. Recognizing alternative courses of action demands learning more about them and comparing their features (comparative learning), if only to weigh how attractive they are in terms of their attributes (discrete options) or motivation and work required (behavior change).

Fig. 1 does not illustrate whether the next step is a decision or a commitment to initiating a behavior, because it can be difficult to pinpoint when such a decision or commitment is made. More often, deliberation is a process where repeated efforts are made, if feasible, to explore alternatives, and to compare, form, and integrate preferences [28]. Therefore, we resist the temptation to indicate a concluding resolution step, e.g., a decision or an intention, in the model. Eventually, decisions are enacted, behaviors initiated: for the model, the key is to recognize the iterative nature of *collaborative deliberation*, that it requires additive sequential work.

We believe that the model contains the elements necessary for effective deliberation and that we have undertaken the first three steps of theory development, namely, (1) consider scope and aims, (2) identify generalizations and, (3) develop formal propositions. We have begun to explain the form and to consider relational mechanisms. Testing the model would require that the propositions be recast as formal or informal hypotheses. One possible way to test would be to consider removing each key construct, in turn, in an experimental evaluation. For example, without making alternative actions clear or obvious, the next phenomenon of comparative learning cannot be initiated. Removing any of the proposition elements potentially limits successful collaborative deliberation, and could be tested empirically.

We also recognize the critical contribution of both positive and negative emotions to deliberation [51]. Anxiety, fear, and other negative emotions may interfere with cognitive processing; these may need to be addressed before engaging in deliberation. Emotion can also inform deliberation, by shining a spotlight on those areas that most need to be addressed, as preferences are constructed, elicited and integrated. Patients who value autonomy in decision-making may not want to bear the burden of self-blame if things go poorly. Thus, the clinician's role is to engage patients wisely, and consider the patient's role according to their capacity and wishes.

4. Discussion and conclusion

4.1. Discussion

We propose a conceptual model that contains five related propositions as a foundation for clinical communication processes that honor the ethical principles of respecting individual agency and autonomy, and that rest on an empathic approach to practice, while accepting that other ethical principles, such as beneficence, will, in some situations, need attention. The propositions describe a series of communicative efforts, namely: (1) constructive interpersonal engagement, (2) recognition of alternative actions, (3) comparative learning, (4) preference construction and elicitation, and (5) preference integration.

The model serves as an underpinning framework for empathic clinical practice. We believe it could provide a model for a range of named approaches, such as patient centered care, motivational interviewing, goal setting, action planning, and shared decision

Collaborative Deliberation

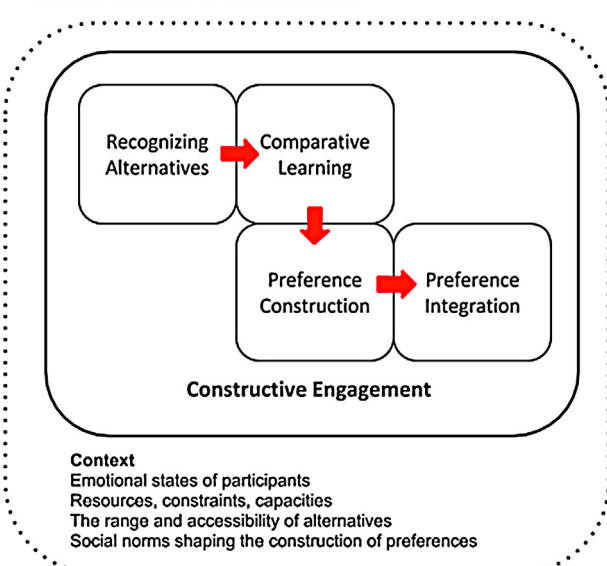


Fig. 1. Collaborative deliberation: a conceptual model.

making. At the core of the model is a process of collaboration, where patients and clinicians communicate in order to share their views about priorities, preferences, needs, and wants. The model requires that clinicians are curious about and respectful of *patients' informed preferences*, recognizing that this process should incorporate insight about emotions, gut feelings, and biases. That is, it requires them to practice mindfully whilst supporting deliberation. Collaborative deliberation is our suggested term for this preliminary conceptual framework.

The model presupposes a relationship where the two (or sometimes more) parties 'dance together', figuring out who leads, and in what direction. We have considered the power and experience differential in making specific kinds of decisions and suggested that clinicians take the lead on many aspects, but recognize that some patients might also wish to take the lead: we fully expect the lead to alternate. We assume that the "dancers" decide the extent of participation in each step of the process, responding to context and urgency, so that there is a negotiation about the speed and sequence in which the parties go through the four steps.

The model proposed has to be considered tentative. We do not consider the task completed. We followed the steps suggested by May and colleagues for developing a mid-level theory [35], but recognize that there will need to be more work undertaken to test and validate the model. Specifically, we recognize that we did not include patient representation in the seminars. To address this weakness we intend to seek the views of a diverse range of patients, including those who may be or feel marginalized or silenced, using a series of consultations with a wider set of stakeholders.

4.2. Comparison to other models

This proposed model is based on the notion of placing the patient at the center of the care process, a principle described by Plato [52] that has resurfaced in many forms [53–56]. Engel's insight was to note that the social and the psychological should be given equal, if not more weight, than the biological domains in clinical practice—but he did not propose a model to guide practice [57]. McWhinney's work, and that of many others, led to descriptions of patient centered care. But the patient centered care model does not deal explicitly with the concept of eliciting and integrate patient preferences [55,58]. Makoul and Clayman provide a synthesis of many description of shared decision making—and although they used the term 'model', we do not find in their work a conceptual framework [27]. Elwyn and colleagues have drawn attention to the similarity between shared decision making and motivational interviewing [48]. The collaborative deliberation model takes a further step toward recognizing that these two approaches, and others, rest on a common foundation. The majority of published frameworks have been based on advocating a series of skills that clinicians might do well to develop and exhibit with individual patients. Yet, particularly when patients are ill, the idea that a patient has a single set of clear preferences is increasingly questioned [59]. There is recognition that the preferences of a 'patient-as-individual' are different from those of the 'patient-as-embedded-in-a-social-unit' [59], and relate to the concepts of 'distributed health literacy' [60], and 'distributed decision making' [6]. Deeper appreciation is being given to the idea that humans shape each other's views using processes "in which new ideas and perspectives emerge through the sharing of thoughts, feelings, perceptions, meanings and intentions among two or more people" [61]. Terms such as 'collaborative cognition' [62] and 'non-local mind' [63] describe the kind of work that fits into a process of collaborative deliberation, and is what Epstein has called the work of arriving at a 'shared mind' [64].

4.3. Conclusions

Engaging patients and supporting them when they are ill and vulnerable are core requirements of practice, and a process we describe using the term *collaboration*. Yet, collaboration is not enough: patients need information, and alternatives need to be carefully considered, compared, and discussed, so that actions can be taken, a process we describe using the term *deliberation*. We propose a parsimonious model that we wish to test.

4.4. Practice implications

There is wide recognition that existing clinical practice is governed by sets of norms that do not support the delivery of patient centered care, and debate continues about its core elements [65]. To achieve change would require a normative restructuring of a highly routinized interactional form. This change is a significant implementation challenge and will demand more than a proposed model to bring about. Yet we feel a clear model is a contribution to this endeavor because there remains debate about the correct theoretical foundation to proposed models of good communication, such as motivational interviewing [66] and shared decision making [27].

Competing interests

Glyn Elwyn provides consultancy for Emmi Solutions, USA and has received research funding from numerous research bodies, including the Informed Medical Decisions Foundation, Boston. Adrian Edwards, Ronald Epstein, Dominick L. Frosch, Amy Lloyd, Trudy van der Weijden, Anne Stiggelbout, Carl May, Tim Rapley, Paul Barr, Stuart W. Grande, Thom Walsh, Victor Montori have not declared any financial conflicts of interest.

Authors' contributions

Glyn Elwyn led the work, conceptualized the model, and drafted the manuscript. Amy Lloyd supported the development of the model and organized the initial seminars in Maastricht. Dominick L. Frosch, Adrian Edwards, Anne Stiggelbout, Trudy van der Weijden, Tim Rapley, and Glyn Elwyn participated in the seminars. Carl May and Tim Rapley guided the process of model development, drawing on their experience with the Normalization Process Model. Anne Stiggelbout, Trudy van der Weijden, Ronald Epstein, Dominick L. Frosch, Adrian Edwards, Victor Montori, Paul Barr, Stuart W. Grande and Thom Walsh provided critical comments and edited the manuscript. Ronald Epstein supported the development of the relationships between elements and drew on his conceptualizations of "shared mind" and other frameworks and models of health care communication processes. Everyone listed as an author fulfills all three of the ICMJE guidelines for authorship which are: (1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; (2) drafting the article or revising it critically for important intellectual content; and (3) final approval of the version to be published.

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