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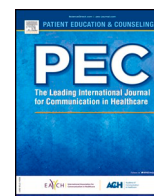
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Shared decision making process measures and patient problems

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ABSTRACT

Objectives: Purposeful SDM posits four modes of shared decision making (SDM). The use of each mode depends on the type of problem of care that is being addressed. We sought to identify how current observer-based SDM measures apply to each mode of Purposeful SDM.

Methods: Four coders, working independently, evaluated 192 items pertaining to 12 observer-based SDM process measures. They classified the items into 6 themes that vary across Purposeful SDM modes and then into one of the four modes (weighing, negotiating, problem-solving, developing insight). Disagreements were resolved by consensus.

Results: The items were classified as pertaining to the following themes: problem (28), roles/participation (84), options (62), preferences (21), decision (15), and evaluation (6). They were then classified as pertaining particularly to the SDM modes of weighing (54), negotiating (5), problem-solving (0), and developing insight (0) modes, with 191 items applying broadly to all modes of Purposeful SDM.

Conclusions: Observer-based SDM measures describe behaviors pertinent to all modes but lack items sensitive to behaviors particular to some modes of SDM.

Practice Implications: New or revised observer-based measures of the SDM process could help estimate the extent to which the appropriate SDM mode is being used to address the patient's problem.

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1. Introduction

Shared Decision Making (SDM) is generally accepted as an approach for patients and clinicians to collaborate in making preference-sensitive decisions about health or care when there is more than one option available [1]. Whether to have an elective operation, take one or another medication, to participate or not in a program of cancer screening, or to undergo genetic testing, are common situations in which SDM is recommended [2]. Common features of these examples are: a problem requiring decision making is identified upfront, known options exist and are presented early on as alternatives from which one should be selected, options are described in terms of their pros and cons, and the clinician facilitates the weighing of the options in light of patient preferences. The Purposeful SDM schema [3] demonstrates that this describes only one way in which patients and clinicians make decisions together and applies to only one kind of situation. In instances such as chronic care

management, identifying a discrete problem and its pre-specified options upfront and then weighing the options in light of their pros, cons, and patient preferences may not even be the most common or appropriate SDM approach [4].

Purposeful SDM recognizes four modes of SDM where patients and clinicians make decisions together that address four kinds of patient problems through four SDM methods. These four methods of SDM are weighing pros, cons and preferences; negotiating conflicts that may exist within the patient or between decisional stakeholders; problem-solving; and developing insight into what is existentially at stake. One or more modes may be used within a patient-clinician encounter. The variation of patient problems and SDM methods described in the Purposeful SDM schema raises the question of how well equipped existing SDM process measures are for evaluating SDM when SDM appropriately takes modes different from weighing the pros and cons of known options. Adding to the number of examples provided in other publications [3,5,6], Box 1 offers four, fictional but plausible, instances of shared decisions being made in different ways in response to different problems. Box 2, along with Fig. 2, offers a brief description of the Purposeful

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Box 1

Instances of Shared Decision Making.

Instance 1. Melissa, a middle-aged woman with type 2 diabetes, has found that her glycemia is no longer well controlled with first line therapies and so she and her clinician are discussing adding or changing diabetes medicines. They use a validated SDM decision aid to talk about the different alternatives and weigh the pros and cons of each. Melissa and her doctor conclude that it might be time to begin taking insulin as the other alternatives are too expensive for Melissa to afford. Her doctor asks her to meet with a diabetes nurse educator to be trained on using insulin and writes a prescription for it.

Instance 2. Unfortunately, over the course of the next six months Melissa had two hypoglycemic events following insulin use that sent her to the emergency department. In the second case it happened while she was cycling with her daughter and young grandchildren. They were distraught after witnessing Melissa fall off the cycle path and into a busy roadway to emerge bloody and confused. Her daughter is adamant that she wants Melissa off “that stuff” and Melissa stops taking the insulin out of her daughter’s concern and her own fear. The situation is further complicated as Melissa is African American and she no longer trusts her white clinician. The tension is palpable when Melissa, now accompanied by her daughter, next meets with her clinician. After talking and negotiating their way through the conflict, fears, and Melissa’s inner tension between guilt of “not looking after my diabetes” and her recent trauma they accept that “looking after my diabetes” is not the primary concern at that moment, and they will only try resuming insulin (at a significantly lower dose), once Melissa is at peace with it.

Instance 3. Melissa resumed insulin with no further hypoglycemic episodes. In the next three years, however, the out-of-pocket cost of insulin increased fourfold placing a heavy demand on her limited resources. Melissa adapted by taking her insulin less frequently in order to conserve it and eating less healthy food because of the stress of it all. As a result, her glycemic control, which had improved after restarting insulin, deteriorated again. Embarrassed to tell her doctor, she is near tears when her situation eventually surfaces in conversation. Once the doctor reassures Melissa, they try to problem-solve together—could Melissa use a simpler or less expensive insulin regimen, at least for a while, she asks? What about increasing her exercise to lower her insulin dose? Who could help see if there is a discount program that could help reduce the cost of her current medication? Switching to an older insulin formulation would require that Melissa inject insulin while at work at a gas station—how could she find a clean private space to administer this cheaper formulation? They decide that Melissa will ask her manager if she could create a clean zone in the storeroom, away from the public bathrooms, that she could use safely to inject insulin while at work. Depending on his answer, Melissa will switch to the older, cheaper insulin or they will revisit the issue again.

Instance 4. Much later in life, Melissa and her daughter again sit in her doctor’s office. Melissa began hemodialysis three times a week five years ago after her kidneys failed, an option for which she was grateful. As the three talk, it tearfully emerges during the conversation how dialysis has diminished her life. The more they talk, the more they recognize that the time might be right to consider palliative approaches and forgo dialysis altogether. They decide to dwell with this some more and talk again soon.

SDM schema and what makes it distinct, it also describes the use of the term “mode” in the purposeful SDM schema.

All of the situations described in [Box 1](#) involve SDM, i.e., Melissa and her clinician working together to make decisions. However, the method for reaching the shared decision is different in each. In the first instance, a problem (hyperglycemia) and the associated need to make a decision were established at the beginning of the encounter and a range of options were presented. The pros and cons of each were *weighed* considering Melissa’s preferences and a new preferred treatment was identified. In the second instance, the decision for how to proceed did not have much to do with the pros and cons of insulin and its alternatives and they were not discussed much or weighed. It was much more about the fears, suspicions, the intersection of the mother’s and daughter’s positions, and Melissa’s inner tension. These matters were voiced and *negotiated* until conflicts were resolved to the point that a desirable way forward was agreed upon. In the third instance, the contours and factors involved in the problem emerged during conversation (rather than being stated upfront), similarly, there were no pre-established options to be weighed. Instead, Melissa and her doctor came up with suggestions—hypotheses, resembling options e.g. taking insulin at work—and they were *problem-solved* to see if they could be configured and made to work. In the final instance, it was the *developing of*

insight of what was at stake and truly mattered at an existential level that led the participants towards considering a decision to forgo dialysis and implement palliative care only. These four instances call for four different modes of SDM with methods of weighing, negotiating, problem-solving, and insight development, respectively.

The identification of different kinds of problems and SDM methods for addressing them intersects with a number of concerns about the measures used to characterize SDM in clinical encounters. These concerns include questions about the goals of SDM, what SDM should achieve for patients, decision making over time, and the ultimate paradox: clinicians either reporting SDM as not relevant to their practice or something that they do routinely.[\[6–10\]](#) Combined, these matters call into question the adequacy of existing process measures of SDM to respond to the diversity of problems and SDM methods used to respond to them that occur in practice.

In this study, we evaluated the available observer-based measures of SDM to understand their pertinence to different kinds of care problems and the various SDM modes described to address them in the Purposeful SDM schema. Observer-based measures were chosen as a point of focus for this study as our interest is with the modes of SDM as they are actively used in conversations. Further studies may consider the applicability of participant report measures to the modes of Purposeful SDM.

Box 2

A brief summary of Purposeful SDM and what makes it distinct.

The Purposeful SDM schema contends that how medical decisions are, or should be, made depends on the problem that the patient is experiencing. And, that the primary need for, and appropriate way of conducting SDM is determined by the particular experience of each patient rather than by overarching norms or processes. It identifies four methods of making decisions together that are appropriate for addressing different kinds of problems: 1) weighing pros and cons against preferences, 2) negotiating intra or inter-personal conflict, 3) problem-solving, and 4) developing existential insight.

As a *problem-based* model of SDM, Purposeful SDM grounds SDM progressively in 1) the *experiential problems* of patients, 2) the need to find, adapt, and use an *appropriate method* for deciding what to do in response to the problem, requiring 3) fostering the *involvement, interactions and relationships* that enable the ability to identify and use the method of decision making that is most appropriate to the patient's unique situation, in a way that is 4) careful, kind, and which honors the person, their problems, and humanity [Fig. 2].

This is in contrast to *'involvement'* SDM models that are grounded progressively in 1) the *need to make a decision* in response to a problem, 2) while appropriately *involving patients* in decision making to the extent that they wish and are able, which requires 3) clinicians establishing, maintaining, and supporting involvement throughout a *deliberative process*, so as to 4) maintain or *foster patient autonomy*.

In very rough shorthand, in *'problem models'* of SDM, *method* is the primary concern, while in *'involvement'* models, appropriate patient *involvement* is the primary concern.

The theme of *'involvement'* traces through the SDM literature, from Charles, Gafni, and Whelan distinguishing *paternalistic, informed decision making*, and *professional-as-agent* models of decision making on the basis of patient role or involvement[16], through to the Elwyn et al.'s development of the OPTION scales for measuring patient involvement in decision making[17]. The goal of the Purposeful SDM schema is not to replace or supersede the involvement-based argument for SDM, which is sound, accepted, and compelling. Rather, it is to offer the possibility of exploring supporting patients and clinicians in decision making in an expanded set of problematic situations, (the prevalence of these situations may partially explain clinicians reporting that SDM is not relevant to their practice)[8], or in situations in which patients and clinicians are using methods of SDM that previously were not recognized as such (which may partially explain clinician reports that they routinely engage in SDM while evaluation suggests otherwise)[18].

Note on "Mode" A mode in Purposeful SDM consists of two paired elements: a type of problem or issue requiring a particular method of SDM, and a method of SDM appropriate for a particular kind of problem. For example, a problem of an internal conflict within a patient, and a method of negotiating conflict are two related elements of mode 2 in the Purposeful SDM schema.

As such, the term "mode" can be used to call attention to a type of problem situation or a type of SDM method. For example, internal conflict is a mode 2 problem, and negotiation is a mode 2 method. This paper is concerned with measures of SDM process and so when the term "mode" is used it frequently foregrounds the method element of the mode.

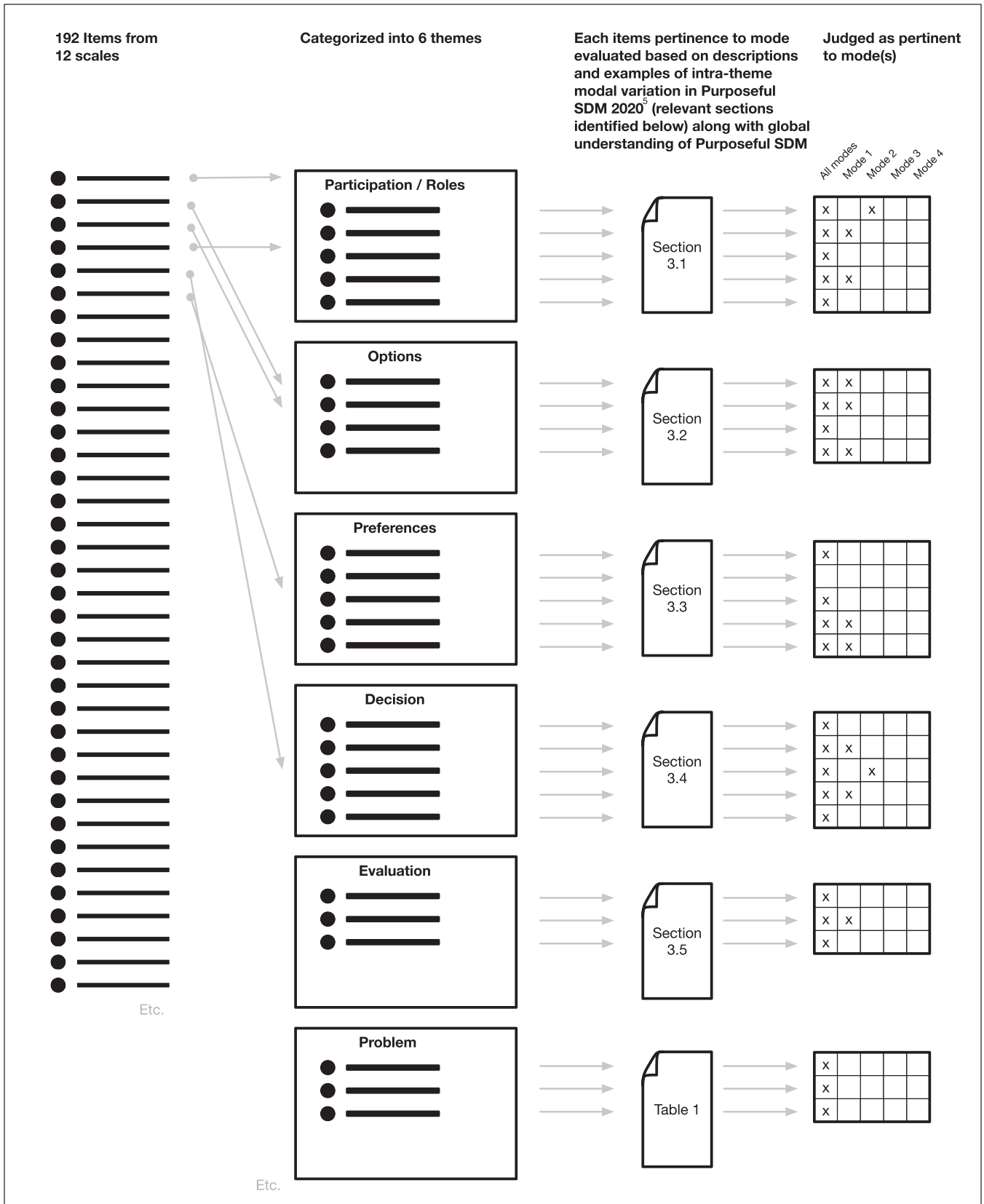


Fig. 1. Coding method.

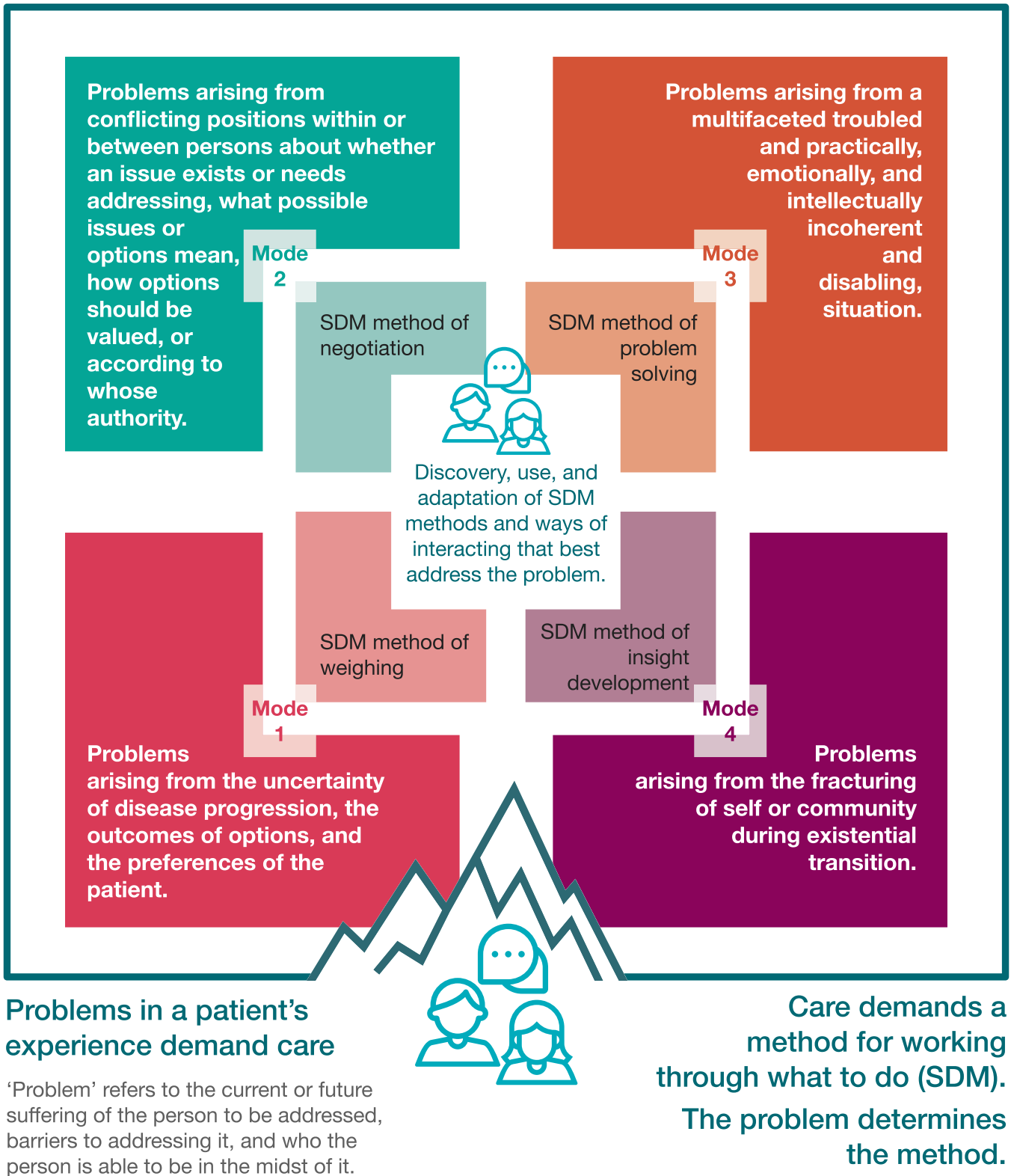


Fig. 2. Purposeful SDM: A problem-based model of SDM.

2. Methods

A total of 192 items pertaining to 12 observer-based SDM instruments were drawn from a recent content review of observer-based measurement instruments of SDM [11]. The names and number of items per instrument can be found in Table 1.

Table 1
Instruments and number of items included.

Instruments (n = 12)	Items (n = 192)
Decision Support Analysis Tool (DSAT) [19]	20
Brief Decision Support Analysis Tool (DSAT-10) [20]	11
Decision Analysis System for Oncology (DAS-O) [21]	70
Observing Patient Involvement in Decision Making Scale (OPTION-12) [17]	12
Rochester Participatory Decision-Making scale (RPAD) [22]	9
Shared Decision Making scale (SDM-scale) [23]	20
Detail of Essential Elements and Participants in Shared Decision Making (DEEP-SDM) [24]	10
Observing Patient Involvement in Decision Making scale (OPTION-5) [25]	5
Multifocal Approach to the Sharing in SDM scale (MAPPIN'SDM) [26]	15
Shared Decision Making Rating Scale (SDMRS) [27]	10
Parental Engagement Scale (PES) [13]	3
Elements of Informed Decision Making (IDM) [28]	7

We used a directed content analysis approach in which analysis of the items was informed by the Purposeful SDM schema [12]. A team of clinicians and SDM researchers (S.H., S.G., V.M.M, I.H.) evaluated scale items by categorizing them by general SDM themes and then by SDM mode. Before beginning the categorization process, all coders familiarized themselves with the various modes of SDM identified in the Purposeful SDM schema [3]. There were two coding phases. In phase one, we focused on the general SDM theme of each item. In phase two, we focused on the SDM modes that each item aligned with (see Fig. 1).

2.1. Phase 1: Categorizing items into SDM themes

In previous work[6], we distinguished specific characteristics of each mode as they relate to the general SDM themes of Roles/participation, Options, Desires, Decision, Evaluation, and Problem/situation. For example, under the broad SDM theme “decision” we made distinctions (refined in Table 2 for clarity) of what a decision is interpreted to be in each mode.

In this study, we began by classifying each item under the general SDM themes of Roles/participation, Options, Desires, Decision, Evaluation, and Problem/situation. We did this to locate a relevant set of distinctions (e.g. Table 2) that could be used to help judge if an item was particularly pertinent to, or consistent with, a particular mode. For example, the item “Achievement of a collaboratively agreed upon plan” from the PES scale[13] was categorized under the theme “decision”. This allowed us, in phase 2, to turn to the distinctions made in Table 2 to judge if the item was based on an interpretation of “decision” that was indicative of a particular mode. “Agreed”, is a component of the item, and “agreement” is central to the characterization of a decision in mode 2. However, we could not determine that “agreement” in the item was specifically linked to the reconciliation of conflicting positions, hence

Table 2
Plural interpretations of the term “decision” used within the modes of Purposeful SDM.

	Mode 1: Method of weighing	Mode 2: Method of negotiation	Mode 3: Method of problem solving	Mode 4: Method of developing insight
A decision is:	A determination that pros, cons, and preferences are optimally balanced in the selected option	An agreement reconciling conflicting positions, desires etc. within or between parties to decision making	The conclusion of an inquiry that determined what particularly in the situation demanded action, and what action the situation demanded.	The existential insight into what ultimately matters that makes what to do obvious.

we did not specifically associate this item with mode 2 and categorized it instead as pertinent to all modes, noting that agreement is ethically necessary in all modes before treatment can be initiated.

We chose our a priori themes, rather than other potential sets, because mode-wise distinctions, (e.g. Table 2), were only

available for these themes. We found that we were able to categorize all 192 items under these themes without requiring any additions. In some cases, an item was considered to be pertinent to more than one theme. All coders discussed and agreed on each item’s theme during a session in which all coders were present.

Although we report the distribution of themes across items in this manuscript, this is not the primary goal of this study which is instead focused on the pertinence of scale items to the specific characteristics of each Purposeful SDM mode. Classifying items by general SDM themes facilitated this analysis.

2.2. Phase 2: categorizing items into modes

The Purposeful SDM schema describes distinguishing features of each theme as they apply to each mode of SDM [6]. Coders used their understanding of the schema and these features as the basis for judging the pertinence of each item to the modes of SDM. An item was judged to be particularly, even if not exclusively, pertinent to a mode when it contained language or a framing that was characteristic of that mode. For example, the item, “The clinician explains the pros and cons of options to the patient (taking ‘no action’ is an option)” from the OPTION-12 instrument aligns particularly (but not exclusively) well with a method of SDM in which options are presented and weighed in terms of their pros and cons, i.e., the ‘weighing of options’ mode of Purposeful SDM [6].

The coders individually categorized whether or not each item was applicable to all modes of Purposeful SDM. They also coded if each item was particularly pertinent to one or more of the following: Weighing the pros and cons of alternatives (mode 1), Negotiating intra or interpersonal conflict or agendas (mode 2), Problem Solving a problematic situation (mode 3), and Developing insight into the humanity of a situation (mode 4). To categorize these items, the

Table 3
Distribution of items per broad themes that distinguish across Purposeful SDM modes.

Instruments	Roles/ participation	Options	Preferences	Decision	Evaluation	Problem-Situation
DSAT	12	4	5	1	3	4
DSAT-10	4	3	2	1	0	1
DAS-O	34	28	5	2	1	8
OPTION-12	4	3	2	1	1	1
RPAD	5	0	0	3	0	2
SDM-scale	6	8	2	1	0	6
DEEP-SDM	1	5	2	2	0	0
OPTION-5	2	2	1	1	0	0
MAPPIN'SDM	8	3	0	2	0	2
SDMRS	4	4	1	0	0	2
PES	2	0	0	1	1	0
IDM	2	2	1	0	0	2
Total	84	62	21	15	6	28

coders interpreted what the items stated verbatim, further informed, where applicable, by any subscale (for example DAS-0 subscales: “following a consultation pathway” or “providing information about standard treatment and clinical trials” to which the item belonged). Any published coding manuals were not used for this evaluation.

Of the 192 items, 62 were initially coded individually and then reviewed by the full team, then 50 were coded individually and reviewed with another team member, and 80 were coded individually and reviewed with a different team member. Finally, the full coding team met to review all items to confirm the judgements of the 2-person teams. In all cases, conflicts were resolved by consensus.

3. Results

3.1. Phase 1: categorizing items into themes

Table 3 describes the classification of the 192 items into the 6 broad themes, with 22 items (12%) considered pertinent to 2 themes and one item, *Option given to defer treatment decision to next visit* (SDM-scale) considered pertinent to 3 themes (roles/participation, options, and decision).

3.2. Phase 2: categorizing items into modes

When the 192 items were categorized into modes, 191 items (99%) were considered applicable to all modes of Purposeful SDM, meaning that the content of almost all the items were in some way implicated in methods of weighing, negotiating, problem-solving, or insight development. The only item that was not considered applicable to all was *Information-centered dialogue* (PES) as information centeredness is not necessarily a feature of conflict resolution or the search for existential significance. A total of 54 items (28%) were considered particularly pertinent to weighing, and 5 items (3%) to negotiating. No items were considered particularly pertinent to making decisions by resolving problems or by developing insight. Table 4 shows a detailed distribution per instrument. Table 5 gives examples of some of the items that were categorized into different modes of Purposeful SDM. Ten of the 12 instruments contained some items that were particularly pertinent to making decisions by weighing options and 4 of the 12 contained some negotiation items.

4. Discussion and conclusion

4.1. Discussion

This study aimed to determine the extent to which the current observer-based SDM measurement instruments account for variations in how SDM takes place according to the problem patient and clinician are addressing. We found that almost all items from these

Table 4
Item distribution per instrument across modes of Purposeful SDM.

Observer-based SDM Instruments	Particularly pertinent to Weighing	Particularly pertinent to Negotiating	Particularly pertinent to Resolving problems	Particularly pertinent to Developing insight
DSAT	25%	5%	–	–
DSAT-10	36%	–	–	–
DAS-O	30%	3%	–	–
OPTION-12	33%	–	–	–
RPAD	–	11%	–	–
SDM-scale	30%	–	–	–
DEEP-SDM	50%	–	–	–
OPTION-5	20%	–	–	–
MAPPIN'SDM	33%	7%	–	–
SDMRS	–	–	–	–
PES	33%	–	–	–
IDM	29%	–	–	–

Table 5
Example items by mode of Purposeful SDM and instrument of provenance.

Applicable to all modes of Purposeful SDM
<ul style="list-style-type: none"> Invites comments and questions (DAS-0) Discussion of the alternatives (SDMRS) Social circumstances reviewed (SDM-scale).
Particularly pertinent to weighing
<ul style="list-style-type: none"> Discussion of the pros (potential benefits) and cons (risks) of the alternatives (IDM) Multiple options presented (SDM-scale) The clinician draws attention to an identified problem as one that requires a decision-making process (OPTION-12).
Particularly pertinent to negotiating
<ul style="list-style-type: none"> Establish the doctor's agenda (DAS-0) The clinician makes sure that he has understood the patient's viewpoint correctly (MAPPIN'SDM) The patient makes sure that the clinician understands his viewpoint (MAPPIN'SDM) Clinician and patient clarify whether the clinician has understood the patient's viewpoint correctly (MAPPIN'SDM)

instruments applied to all modes of Purposeful SDM, and no items were particularly pertinent to making decisions by problem resolution or insight development.

Our study was limited by challenges in classifying items that used vague or nonspecific language and definitions, a problem that Gärtner et.al. also found in their review of SDM measures [14]. Also, a third of the items (n = 70) came from the DAS-0 instrument, which is intended for use in decisions about participating in cancer trials. Our study also has several strengths. The 192 items came from a study of SDM coding schemes [11], selected from the SDM instruments previously identified in the systematic review by Gärtner

et.al. [14] minimizing bias in the selection of instruments for this analysis. Furthermore, content experts with a diverse background and research focus independently evaluated all items using a rigorous and iterative process followed by reaching consensus.

It is not surprising that almost all items were judged pertinent to all modes of Purposeful SDM as each item referred, in one way or another, to a theme that is characteristic of all cooperative decision making, e.g. *options*. Deeper conceptual analyses of these themes reveal characteristics that distinguish how each theme operates within each mode [6]. For instance, in situations in which decisions are made predominantly by weighing, options are *alternatives* that are typically identified upfront. However, in situations in which decisions are made by trying to resolve the multifaceted factors of a confused situation, decision making proceeds by searching for different possible approaches. In this case options are expressed as *hypotheses*, and they are often not known when the decision conversation begins. These conceptual and methodological variations within themes allowed us to judge whether an item that expressed an overarching theme was also particularly pertinent to a particular mode of making shared decisions. Yet, the broad applicability of the items to all modes of Purposeful SDM does not in itself set evaluators up to judge whether the different methods of SDM identified in the Purposeful SDM schema were appropriately applied to the particular situation requiring decision making.

For example, in instance 2 (Box 1, Melissa), the crux of the decision is whether Melissa and her daughter are at a place where they can again trust insulin as a response to Melissa's hyperglycemia, and if and how they could reach that place. Their trust in the clinician may well have been further diminished if the clinician began the conversation by saying that Melissa's blood glucose was too high and then presented the options for sugar control, i.e., attempting to repeat the decision-making process used with Melissa in Box 1, instance 1, in which insulin was found to be the only medication that could improve her diabetes control. If this were to happen, the clinician might get high SDM scores, but the issue that necessitated decision making, i.e., Melissa's fear and distrust, would have been left unaddressed. This would occur in part because weighing the alternative medications would be the wrong method for negotiating and working towards resolving the conflicts that characterized the problem and to arrive to a plan of action (decision). Similarly, when Melissa reveals the extent to which her life is now diminished by dialysis, the option of palliative approaches might be raised, but again the decision may not hinge on its pros and cons, or even on Melissa's preferences regarding dialysis or its alternative. Rather the issue at hand is that Melissa's life is fracturing, getting away from her. How the narrative of her life can be reclaimed is an existential matter requiring making space for a deep insight to develop. If palliative approaches were to be followed it requires grasping that they are the right way for Melissa's life story to come to a close. Discussion focused on pros and cons only may well harm the dialogue necessary for the required insight to develop. This dialogue would represent the quality of the interaction yet would go undetected by existing SDM observer-based instruments.

The items within an instrument may be sensitive to detect SDM-related themes but seem less specific to detect the SDM mode based on weighing alternatives, and even less specificity for other ways of making decisions together such as negotiating conflict, problem solving, or developing existential insight. It is this specificity that is required to judge the extent to which SDM was used to respond well to the patient's problems. The absence of problem-and-method specificity in existing instruments, developed with other measurement foci in mind, represents less a limitation of these instruments and more an opportunity to innovate SDM assessment based on Purposeful SDM.

Across the observer measures of SDM, there is a strong conceptual and evaluative emphasis on the involvement of patients in

decision making. This is reflected by how often items fell under the theme of Roles/Participation (84 out of 192 items, 44%). The focus on patient involvement was rightly warranted by concerns of excessive paternalism in care [5], and decisions being made about patient's care that were unknown to them [10,11]. The Purposeful SDM schema [3] provides an alternative starting point for advancing SDM research and practice. Rather than taking involvement in decision making as its primary construct, it uses patient problems instead. The argument being that the primary work of SDM is to attend to patient problems, and that the need for, and nature of, patient involvement follows from what is required to appropriately (which includes, ethically) attend to these problems. So too, the method through which problems are collaboratively addressed depends on the ability of this SDM method to advance the problem at hand. With this in mind, evaluation of SDM processes requires recognition first that "doing" SDM is contingent on the patient problem followed by judgment of the extent to which the appropriate SDM mode or modes were used and how well they were used to address the problem. This requires observer process measures that are sensitive to the mode of SDM.

Notably, making shared decisions through problem-solving occurs frequently in chronic care management, caregiver supported chronic care, and in longitudinal decision making, all of which have been identified as important research foci for the field of SDM [15]. Recognition of the diversity of ways in which decisions need to be and are made may be especially true for people of color and other vulnerable groups whose deeply seated personal trauma cannot be treated through generalized SDM and would be better served through a careful problem resolution conversation.

Additionally, the focus of current measures may blind us to where SDM is happening in different modes than what the available instruments are equipped to detect. This may underlie some clinician claims that SDM, perhaps referring to the weighing-based SDM mode, lacks pertinence in their practice, a commonly described barrier to the adoption of SDM [8]. Similarly, when clinicians claim that they are routinely "doing" SDM with their patients, they may be indicating that they are using modes that current measures do not recognize, e.g. problem-solving in chronic care management. Lack of specific and relevant instruments limit researchers' capacity and effectiveness to determine the occurrence of all modes of SDM and to advance clinicians' abilities to care for patients with the SDM method most appropriate to the patient's problem.

4.2. Conclusion

Existing observer-based SDM instruments are not particularly pertinent to some modes of SDM. There are many unexplored opportunities to create new observer instruments or revise the existing ones for describing, supporting, practicing, and evaluating SDM when the appropriate SDM mode demands negotiating conflict, problem resolution, or insight development.

4.3. Practice implications

The creation of new observer-based measures of SDM or the revision of those in existence, could help us understand if SDM methods are being used to address each patient's problems appropriately, and offer new estimates of the extent to which appropriate SDM methods are being used to address each patient's problems. The measurement gap identified here, justifies the development of mode-specific measures of SDM, alongside work to operationalize the circumstances in which they should be used to reach out to historically marginalized populations while cultivating the ability of any new measure to support research, clinician education, intervention development and implementation, and practice redesign.

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CRediT authorship contribution statement

Hartasanchez: Conceptualization, Validation, Investigation, Writing – original draft, Writing – review & editing. **Grande:** Conceptualization, Methodology, Validation, Investigation, Writing – review & editing. **Montori:** Conceptualization, Methodology, Validation, Investigation, Writing – review & editing. **Kunneman:** Conceptualization, Methodology, Validation, Writing – review & editing. **Brito:** Conceptualization, Methodology, Writing – review & editing. **McCarthy:** Conceptualization, Methodology, Writing – review & editing. **Hargraves:** Conceptualization, Methodology, Validation, Investigation, Writing – review & editing, Supervision, Project administration.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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