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Explorative observational study of Dutch patient–clinician interactions: operationalisation of personal perspective elicitation as part of shared decision-making in real-life audio-recorded consultations

Ester A Rake [1,2] Marjan J Meinders,[3] Guus Brand,[3] Dunja Dreesens [2] Jan A M Kremer,[3] Glyn Elwyn [3,4] Johanna W M Aarts[5]

ABSTRACT

Objectives Patients' preferences, values and contexts are important elements of the shared decision-making (SDM) process. We captured those elements into the concept of 'personal perspective elicitation' (PPE), which reflects the need to elicit patients' preferences, values and contexts in patient–clinician conversations. We defined PPE as: 'the disclosure (either elicited by the clinician or spontaneously expressed by the patient) of information related to the patient's personal preferences, values and/or contexts potentially relevant to decision-making'. Our goal was to operationalise the concept of PPE through the evaluation of preferences, values and contexts and explore how PPE occurs in clinical encounters.

Design Cross-sectional study: observational coding based on a novel coding scheme of audio-recorded outpatient clinical encounters where encounter patient decision aids were applied.

Setting We audio-recorded patient–clinician interactions at three Dutch outpatient clinics. PPE was analysed using a novel observational coding scheme, distinguishing preferences, contexts and four Armstrong taxonomy value types (global, decisional, external and situational). We measured SDM using the Observer OPTION[5].

Participants Twenty patients who suffered from psoriasis or ovarian cysts; four clinicians.

Results We included 20 audio-recordings. The mean Observer OPTION[5] score was 57.5 (SD:10.1). The audio-recordings gave a rich illustration of preferences, values and contexts that were discussed in the patient–clinician interactions. Examples of identified global values: appearance, beliefs, personality traits. Decisional values were related to the process of decision-making. External values related to asking advice from for example, the clinician or significant others. An identified situational value: a new job ahead. Contexts related to how the illness impacted the life (eg, sexuality, family, sports, work life) of patients.

Conclusions The operationalisation of PPE, an important aspect of SDM, explores which preferences, values and contexts were discussed during patient–clinician

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The taxonomy allowed us to operationalise the concept of personal perspective elicitation.
⇒ The setting of consultations in which encounter patient decision aids were used, created an opportunity to include consultations where shared decision-making and a dialogue about preferences and values would happen.
⇒ We had access to a restricted sample of clinicians, type of patient conditions and consultations because of the COVID pandemic and the challenge to know beforehand whether the encounter patient decision aids would be applied in the consultations.
⇒ Our coding scheme focused on verbal aspects of the patient–clinician interaction rather than non-verbal aspects, which could be an interesting opportunity for refinement and adaptation of the coding scheme.
⇒ Patients' views were not involved in the first operationalisation of the coding scheme for personal perspective elicitation.

interactions where an ePDA was used. The coding scheme appeared feasible to apply but needs further refinement.

INTRODUCTION

When caring for patients, a doctor needs to get to know the patient. Hence, discussing their preferences, values and contexts in relation to their health is pivotal.[1–4] This implies that patients should be actively involved in their healthcare process, which can be achieved through shared decision-making (SDM). Patients' preferences and values are seen as critical aspects in the SDM process[5–8] and are mainly rooted in the SDM element that is called 'preference elicitation'. Researchers and clinicians also refer to this element as 'value elicitation' or 'value clarification'.[9]

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Contextual aspects are an important third component of this preference elicitation, given that the unique patient's perspective should be approached in an inclusive way beyond a biomedical approach.[4 8 10] We, therefore, introduced the term 'personal perspective elicitation' (PPE). PPE includes all relevant aspects of the patient's perspective as part of SDM and is defined as the disclosure (either elicited by the clinician or spontaneously expressed by the patient) of information related to the patient's personal *preferences*, *values* and/or *contexts* potentially relevant to decision-making.[11]

Although preferences, values and contexts are mentioned as important aspects of SDM, the exact meaning is challenging.[12] The elicitation of the patient's perspective during clinical encounters appears to be far from comprehensive, according to our previous work in which we synthesised the concept of PPE in 99 studies evaluating clinical encounters in the context of SDM.[11] This analysis also revealed that preferences, values and contexts were defined differently in those studies, if defined at all. This is reflected in the current debate about the exact meaning and interpretation of patient's preferences, values and contexts: these terms are not well defined and overlap, causing challenges for research.[9 12–15] For example, preferences as part of SDM can be seen as an outcome, being inclinations towards or away from a certain option or as an element of the care process such as the preferred level of participation or the desired amount of information.[13] The Institute of Medicine describes that values refer to unique preferences,[1] which adds to the overlap of the terminology. Values are sometimes described as core beliefs of abstract and subjective nature that are very important to individuals.[16] An often-mentioned characteristic of values is that they can be ordered by relative importance, that is, a priority can be assigned to evaluate the desirability of options.[9 16–18] Regarding preferences, values and contexts, especially the second remains vaguely described and needs more clarification.[12 14 16]

In a clinical setting, tools to facilitate SDM are available, mainly referred to as patient decision aids (PDAs), which are assumed to clarify values. PDAs are evidence-based tools that support patients in making specific and deliberated choices about healthcare options. One specific element of PDAs is that they should implicitly (by activating the patient to think about what he/she perceives important) or explicitly clarify the value someone assigns to the different options.[19] People who used PDAs felt better informed and clearer about values.[20] A specific type of is the encounter PDA (ePDA) for use during the consultation[21] and are usually shorter in lay-out compared with standard PDAs. As ePDAs support SDM and are designed to support the process of value clarification, it is an interesting starting point to further unravel the concept of PPE, as we assume that preferences, values and contexts will be elicited or disclosed in those consultations.

Given the aforementioned challenges about definitions and overlap in terminology, we attempt to further define the concept of PPE. Therefore, we aim to operationalise PPE through the evaluation of preferences, values and contexts that are discussed during patient–clinician interactions as part of SDM. To study this, we operationalised PPE by developing an observational coding scheme, which we used to explore how PPE occurred based on real-life observations of clinical encounters.

METHODS
Setting
This study was part of a larger implementation project,[22] which aimed to implement 'keuzekaarten', a certain type of Dutch ePDAs, for sustained use in 10 outpatient clinics in the Netherlands. These ePDAs are derived from the Option Grid PDAs and are available for free for patients and clinicians. They are known for their succinct, easy-to-use format (one page) with a tabular layout, providing an overview of available options and frequently asked questions by patients, while the content of the cells provides answers based on clinical guidelines.[23 24] Each of the 10 outpatient clinics was involved in developing a tailor-made implementation plan, since previous research showed that a context-specific workflow is advised to come to sustained use of the ePDA.[25] As part of the implementation project, the clinicians followed a mandatory 1-hour interactive training about SDM and how to use the ePDA during encounters based on best practice and mediocre practice video examples. Furthermore, at each participating clinic, ePDA paper blocks were available where clinicians could tear off an ePDA to discuss with their patient and hand it to the patient to take home.

Data collection
We choose to collect data as part of the implementation project, given the SDM-focused consultations where ePDAs were used. This gave us the opportunity to operationalise the concept of PPE. Four of the outpatient clinics embedded in the implementation project were approached to participate in this research study because the staff estimated that audio-recording 10 encounters per clinician would be feasible within the timeframe of the implementation project. Nonetheless, at one outpatient clinic, we could not include patients because the clinical environment appeared to be not suitable for recording sensitive conversations. Consequently, we decided to exclude this site. Data collection took place from May 2021 until January 2022 and involved one dermatology department (psoriasis-biologicals ePDA) and two gynaecology departments (ovarian cysts ePDA). We chose audio-recordings instead of video because audio-recordings could be perceived as less intrusive and may, therefore, have less influence on participant behaviour.[26] We registered our study per additional study site in order to start local data collection (local registration numbers: 2021–050; DOC 029; 21/433).

Participant recruitment
The clinicians, not being aware of the specific study aim, but knowing it was about SDM, in general, signed

Table 1 Definitions adopted in this study

Personal perspective elicitation (PPE) as part of shared decision-making:
The disclosure (either elicited by the clinician or spontaneously expressed by the patient) of information related to the patient's personal preferences, values and/or context potentially relevant to decision-making.[11]

PPE component	Conceptual definition adopted in this study
Preferences	Inclinations towards or away from a given decision option,[48] before the final decision was made.
Values	Beliefs that represent an individual's interests (individualistic, collectivist, or both) and are motivated by human needs (eg, enjoyment, security, self-direction, and so on) this may be evaluated on a scale of importance (eg, from very important to unimportant) as a guiding principle in someone's life.[18] Armstrong's taxonomy for values[28 49]: **Global values:** personal values impacting decision-making at a universal level; can include value traits and life priorities. **Decisional values**: values traditionally conceptualised in decision-making, including considerations such as efficacy, toxicity, quality of life, convenience and cost. **External values**: values acknowledge that many patients consider values other than their own when making decisions. **Situational values**: values tied to specific events happening in the near future of the patient's life, which could have instant impact on the choice to be made.
Contexts	Personal and environmental circumstances in which the patient exists, such as occupation, physical environment, social support, and organisational factors.[39]

informed consent for participating in the study and audio-recording the encounters before data collection started.

Patients were eligible if they were 18 years and older, were able to read and speak the Dutch language, and if one of the ePDAs applied to their condition. Research staff telephoned eligible patients to inform them about this study. If they were willing to participate, written informed consent for participating in the study and audio-recording the encounter was obtained at the day of appointment. One encounter per patient was audio-recorded after which the patient filled in a short questionnaire about their sex, age and educational level. The researcher, who was not present during the encounter, provided the recording device beforehand and stopped it directly after the encounter.

Conceptual definitions for core components of PPE
We chose a definition related to outcome preferences as this fits our PPE definition best (see table 1 for the definitions adopted in this study). Though preferences are often defined as part of values,[14 27] we wanted to separate preferences from values. Values can be perceived as underlying preferences, that is, the *why* of a preference (why do I prefer something? Because of value X), as a characteristic leading to a certain preference.[16] We operationalised values by using an existing taxonomy of patient values related to healthcare decision-making, which distinguishes global, decisional, external and situational values.[28] This taxonomy was chosen because the authors position it within the process of SDM, which aligns with our PPE definition. Furthermore, this taxonomy is based on clinical experiences and provides clear value categories for the concept of values (table 1). Contexts were interpreted as the patient's background information, possibly relevant for the patient's situation regarding SDM. We delineated this to information about a patient's

health other than strictly biomedical information. We did not use the concept of contextualisation (everything outside the boundary of the skin) by Weiner *et al*,[4] as the contextual domains underlying this concept refer to both values and contexts.

Development of the coding scheme
We searched the inventory of the international association for communication in health care (EACH) (https://each.international/resources/reach/search/) on 3 January 2022, that is, a catalogue for available observational coding instruments in the field of healthcare communication research. No observational coding scheme precisely matched our definitions (see table 1), but we could use relevant elements from existing schemes. This meant that we identified personal perspective segments based on the VoLiMeD coding scheme, which distinguishes biomedical from lifeworld topics during encounters.[29] We used clinician response codes from the Coding Manual Communication in Second Opinions (SO-COM Manual),[30] as it provides clear categories for clinicians' responses. We split the response code 'explore' into 'explore-PPE' and 'explore-biomedical', in order to distinguish whether a clinician further unravels an elicited PPE segment. The coding manual (online supplemental material 1) provides the detailed coding scheme, including examples and background.

The development and fine-tuning of the coding scheme followed four stages. First, a first draft of the scheme was tested on three mock-up encounters (GB, EAR). Second, a second draft was applied on the dataset (LB, EAR). Third, the coding scheme evolved into the final draft based on discussions with the research team. Fourth, all coded audio-recordings were checked with the final coding scheme to prevent possible drift during the coding process (LB, EAR). During all stages, adaptation
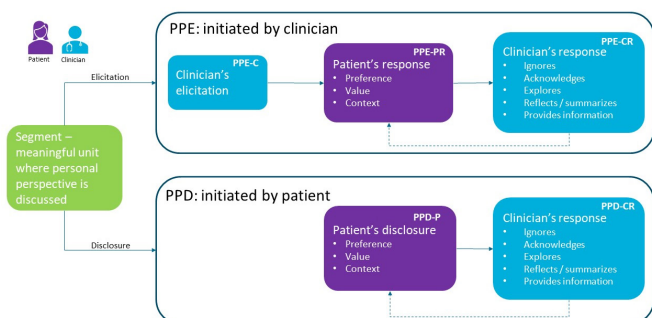
Figure 1 Overview of the observational coding process for elicitations (PPE) and disclosures (PPD) of personal perspectives. Blue boxes depict clinician's utterances, purple boxes depict patient's utterances. PPE-C, personal perspective elicitation (PPE) by clinician; PPE-PR, PPE patient's response; PPE-CR, PPE clinician's response; PPD-P, personal perspective disclosure—patient; PPD-CR, personal perspective disclosure—clinician's response.

and refinement of the scheme were discussed in an iterative process during multiple meetings with the research team (clinicians/researchers: GB, JWMA, LB; researchers: DD, EAR, GE, JAMK, MJM). Discrepancies were discussed and solved with a third team member (JWMA).

Analysis
The audio-recordings as well as the verbatim transcripts were analysed with specific software for observations.[31]

PPE analysis
For PPE analysis, LB and EAR independently coded all audio-recordings. Figure 1 clarifies the coding scheme and accompanied abbreviations. First, personal perspective segments were identified, that is, meaningful units in the encounter that match the PPE definition (table 1). Second, the coders scored whether the segment was elicited by the clinician (PPE by the clinician: PPE-C) or disclosed by the patient (personal perspective disclosure by the patient: PPD-P). An elicitation (PPE-C) was coded if the clinician asks or invites the patient. A disclosure (PPD-P) was coded if the patient expresses him/herself spontaneously, without clear question or invitation from the clinician (see online supplemental file 1). Third, a preference, value type or context were assigned (elicitation—patient's reaction: PPE-PR / disclosure—patient's reaction: PPD-PR) while the encounter-specific content of these elements was marked. Fourth, the response of the clinician was identified (elicitation—clinician's response: PPE-CR/disclosure—clinician's response: PPD-CR), and the segment could either continue if new preferences, values or contexts topics arose that linked to the previous elicitation or disclosure, or stop if no new topics arose.

For further analysis, coded data were exported to Microsoft Excel. Each PPE-PR/PDD-PR category (preference, value type or context) contained encounter-specific content about what was discussed. We summarised this content into one sentence, and subsequently categorised this information in order to provide insight into

the content of the preferences, values and contexts. The categories were derived from the examples given in Armstrong's framework.[28 32] If necessary, new categories were added. Furthermore, we summarised the number of preferences, values and contexts per encounter.

Level of SDM analysis
The level of SDM was quantified using the Observer OPTION[5] scale, containing five items to determine the extent of the clinician's SDM behaviour on a 0–4 scale.[33] GB and EAR independently coded the audio-recordings using the Observer OPTION[5] and discussed them afterwards to come to final scores if discrepancies existed (see online supplemental material 1 for the coding manual). Item 4 of this scale is most closely related to PPE, as it focuses on the patient's preferences: *The clinician makes an effort to elicit the patient's preferences in response to the options that have been described. If the patient declares their preference(s), the clinician is supportive.*. We, therefore reported a mean item 4 score on the 0–4 scale. We converted the Observer OPTION[5] item scores per encounter to a 0–100 scale across 20 encounters and reported the overall mean score. Low(er) scores mean the SDM behaviour is absent or limited; high(er) scores mean that the SDM behaviour is good to exemplary.

Patient and public involvement
No patients or public were involved in the study design. However, patients were involved in the former development process of the ePDAs that were used.

RESULTS
General results
In total, 40 patients were eligible for this study and approached for participation, which led to 20 included audio-recordings from 20 patients and four clinicians (see online supplemental file 2) for detailed information about the number of approached and included participants per setting). Table 2 provides an overview of participants' characteristics. Mean encounter length was 32.4 min (SD: 14.1 min), and the mean length of the ePDA discussion was 13.2 min (SD: 7.2). The overall mean Observer OPTION[5] score across 20 encounters was 57.5 (SD: 10.1) on a 0–100 scale, showing medium SDM levels. The mean score of item 4 (ie, eliciting preferences), which relates to PPE, was 2.7 (SD: 0.6) on a 0–4 point scale.

PPE analysis
Overall, preferences were mentioned in 16/20 encounters, global values in 17/20 encounters, decisional values in 18/20, situational values in 4/20, external values in 14/20 and contexts in 18/20 encounters. In summary, at least one value type was always present in every encounter. The excerpt in table 3 exemplifies how the coding scheme was applied. In this case, the clinician at the dermatology

Table 2	General characteristics of patients and clinicians
Patients (n=20)	
Sex (female)—n (%)	15 (75%)
Age in years—mean (SD)	41.8 (11.3)
Educational level—n (%)	
University degree	9 (45%)
Vocational college degree	8 (40%)
High school degree	3 (15%)
Clinicians (n=4)	
Sex (female)—n (%)	3 (75%)
Age in years—mean (SD)	43.3 (8.7)
Experience with other 'keuzekaart'-conversation aids: yes: n (%)*	3 (75%)
Year at which latest medical training was completed	2006, 2021, 2018, 2021

*Other 'keuzekaart' ePDAs than for ovarian cysts or psoriasis as used in this study.

department discusses with the patient which treatment is best for his psoriasis and accompanying skin patches.

The physician assistant (dermatology department) discusses with the patient which treatment is best for his psoriasis and accompanying skin patches. p=patient; C=clinician. The abbreviations of the assigned codes correspond with figure 1.

Table 3	Example of an excerpt (translated from Dutch) with assigned codes
C: we should consider those kind of things, like what important is to you	PPE-C
P: Yes, yes, uhm, that is, I find that difficult C: yes P: Because ehm, my priority is to be as clear (skin) as possible	PPE-PR: global value
C: yes, yes	PPE-CR: acknowledges
P: And ehm what can't be done, can't be done. I have long since resigned myself to that. Eh, so, the Humira (a medicine) was an ingenious solution for me. After 20–25 years visiting clinicians, I was getting crazy of all those salves, poultices and pills. I got so sick of it.	PPE-PR: context
C: yes, I was just going to say: you had quite a few.	PPE-CR: reflects/summarises
P: and nothing worked. Eh, so, I need to rely on your advice, because….	PPE-PR: external value
C: that's alright.	PPE-CR: acknowledges

PPE-C, personal perspective elicitation by clinician; PPE-CR, PPE clinician's response; PPE-PR, PPE patient's response.

Table 4 shows a detailed overview of preferences, value types and contexts accompanied with the identified categories and illustrated by quotes from the patient–clinician interactions. It shows the variety of topics that were discussed during patient–clinician interactions related to PPE. For example, beliefs were categorised in case the patient expressed a global value with a strong conviction about the illness related to the decision to be made. In the quote in table 4, the patient tells that she feels that she cannot give up and needs to continue. The patient and clinician discuss how this belief impacts her illness. The following example (box 1), extracted from the data (audio-recording number 12), illustrates how preferences and different value types relate to each other.

For the young woman in the example, getting rid of the visible cyst as soon as possible was much more important to her than being able to participate in the scouting camp.

Clinician responses

Clinicians responded to the preferences, values or contexts mostly by reflecting or summarising, acknowledging or providing further information to the patient related to the topic discussed. Sometimes, the clinician explored a preference, value or context with a biomedical question or with a question or phrase that invited the patient to tell more about their personal perspective. In a few cases, the clinician ignored the patient's personal perspective. Only seldomly the conversation continued by discussing an unrelated topic after a personal perspective was raised.

DISCUSSION

Our novel coding scheme is a first attempt to operationalise PPE through the evaluation of preferences, values and contexts in patient–clinician interactions as part of the SDM process. This study explores which preferences, values and contexts were discussed during patient–clinician interactions where an ePDA was used. This first version of the coding scheme proves to be feasible for further refinement and adaptation.

Because the clinicians followed a 1-hour training and used the ePDA in the audio-recorded encounters, our data were SDM-focused, which allowed us to operationalise the concept of PPE. It is likely that the participating clinicians were already adepts of SDM and, therefore, showed an inviting communication style and demeanour. It is known that patients could be more willing to disclose information when they feel that the relationship with the clinician is safe, and a conducive environment is realised.[34] In the SDM process, this is, therefore, reflected in the component 'team talk' of the SDM three-talk model.[3] During the team talk, the clinician establishes a safe environment by explaining to the patient that they will work together in reaching a decision, and that the patient's input is crucial.[3]

A novelty of our exploratory observational study was the integration of Armstrong's values framework into our

Table 4 Overview of preferences, value types and contexts accompanied with quotes

Type	Identified categories	Quotes from patient–clinician interactions
Preferences Inclinations towards or away of a decision option	*	'Uhm, yes, wait-and-see, eh, eh, yes, I don't want to make it too loaded, but [cries], yes, ehm, I am not so willing to wait-and-see' (#1)
Global values Personal values impacting decision-making at a universal level	Appearance	'Yes, it is just on the top of my mind [starts crying]. Because it is, so large [visible abdominal swelling].' (#7)
	Beliefs	'Oh I just had… All the time, I am thinking that I need to go on or something.' (#4)
	Existential desire (biological children)	'The wish for a third child was very big at that time and the wish for a fourth child is possibly there, but not as big, that feeling is not as existential as after the second one.' (#2)
	Personality trait	'…I just thought, I still don't know anything. And I have a tendency to worry as I would say. So yeah, I already think about it often.' (#7)
	Quality of life	'Because otherwise, I, yeah, I can't pee, poop, or have sexual intercourse, can't shave myself. It is really horrible. I have three children, I had three deliveries, but this is much more intense though.' (#15)
Decisional values Values traditionally conceptualised in decision-making	Balancing pros and cons of treatment options	'Uhm, let's see, some moments I don't feel well, that has got to do with the coronavirus infection, and uhm, if I get an infection or something [when choosing for a biological], I am in doubt about that…' (#19)
	Opinion about treatment	'You know, it doesn't matter to me, because I don't care [whether the medicine is on the market for a short or long time already].' (#16)
	Previous experience with a treatment option	'Ehm, yes, and my previous experience with removing the cyst was very good and convenient.' (#2)
	Anxiety for severity of disease	'But I was relieved that, that it was good before.' (#4)
	Treatment effect	'Yeah but I wonder whether it is good to use such an injection every week on the long term, maybe that's not how it is meant to be.' (#14)
	Validation of choice	'But it does not matter if it [the cyst] stays there though?' (#8)
External values Patients consider values other than their own when making decisions	Asking clinician's advice	'No, I want to, ehm, think about it. But, ehm, yeah, the advice, what would you…. You have a lot of experience, you see many women…' (#9)
	Significant others	'I have a friend in Paris who suffers from the same. Although, eh, she also uses additional medication. And she, ehm, waits, and goes to the gynaecologist every half a year.' (#9)
	Non-conventional doctor	'But, ehm, they always told me that it is not contagious. But that Chinese, the non-conventional doctor, told me that it is…' (#18)
Situational values Values tied to a specific moment in time	*	'With a new job ahead, I think, yeah alright, just let it be(don't remove cyst right now).' (#5)
Contexts Circumstances in which the patient exists	How the illness impacts: ▶ General daily life ▶ Doing sports ▶ Family life ▶ Sexual life ▶ Working life/daily occupation	'Eh, no. But I have to be honest, it is because of myself. I just refuse to give in to it(…). Even if it still hurts, … I just put on my football shoes and go playing soccer on Friday night.' (#20)
	Patient's history	'Yeah, I have, ehm, I have had bariatric surgery and I lost a lot of weight, as I would say.' (#17)
	Additional explanations or information	'Are there things of which you would say, don't do that at the moment now we know that it [the cyst] is there? I asked it via telephone as well last week, but…' (#1)

*Not applicable.

coding scheme.[28] So far, Armstrong's taxonomy for analysis of patient–clinician interactions has only been used to analyse interviews about patient values[35] and to identify values that older adults incorporate in decision-making as expressed during focus group discussions.[32] A second novelty was the clearer demarcation between preferences,

> **Box 1 Example how preferences and values relate to each other**
>
> A young woman, diagnosed with an ovarian cyst, expressed being in favour of surgery as treatment (preference). She raised the topic of her upcoming scouting camp (situational value), where she would be team lead. However, getting rid of the abdominal swelling caused by the cyst was also crucial because it was quite visible (global value 1) while she did not want to talk about it with other people (global value 2). She decided that if surgery would be planned during scouting camp, she would cancel the camp (situational value). She did not want to postpone the surgery, although the clinician offered this as an option.

values and contexts. A similar categorisation is seen in a study of Rocque *et al*, who demarcated preferences, concerns, life goals and philosophies, treatment-specific values and broader contextual or sociocultural values.[36] Our study can be seen as a similar study to Rocque *et al* replicating the feasibility of coding different types of preferences, values, concerns and contexts based on audio-recorded consultations. The advantage of our coding system is that the values framework of Armstrong are already acknowledged in the literature and that we linked our results to the process of SDM. In contrast to our study, Rocque *et al* included primary care encounters while we studied outpatient clinical encounters where ePDAs were applied and where we expected some extent of SDM to happen.

Our novel coding scheme for observational data appeared practical and fairly easy to interpret. Compared with other categorisations that use 10–12 domains,[37 38] we provide a comprehensive coding system with a feasible amount of components (preferences, four value types, contexts). However, on some occasions, it was difficult to decide which value category was most applicable during the coding process. For example, we interpreted the wish to start a family as a global value rather than a decisional value because intending to have biological children can be viewed as a core ideal in life. Furthermore, we included 'contexts' in our coding scheme, which might seem closely related to situational values, but we did not experience difficulties in distinguishing these categories. The code 'contexts' was applied to information about someone's environment or life that was reflected in several domains, while situational values were applied to very specific and clear events that will happen in the near future, which could immediately influence the decision-making process.

We chose to develop the coding system as mutually exclusive, therefore, each PPE-PR/PPD-P aspect (figure 1) received only one code. Double coding a single aspect of the patient–clinician interaction was not allowed in order to keep the coding system simple and feasible. Furthermore, the principle of 'mutually exclusive' prevents the pitfall from using overlapping definitions for the same aspects of a patient–clinician interaction. Still, within one PPE segment containing several PPE/PPD aspects, it was possible to code multiple preferences, values and contexts, as is shown in table 3. This reflects that preferences, values and contexts are distinct yet interconnected.[32 36] Despite this interconnectedness, it is important to distinguish preferences, values and contexts from each other. Our definition of preferences was chosen as restricted and reductionist, referring to only preferences for treatment options, while the four value categories reflect the broader and deeper values that influence a patient's decision-making process.[12] In addition, contexts give insight into the current situation a patient is in. This way, the operationalisation of PPE using our coding scheme addresses the criticism that only a restricted view on preferences and values is applied while underlying values need to be included as well.[12]

The coding scheme was developed to capture verbal aspects of the patient–clinician interaction. Therefore, we deliberately chose audio-recordings as explained in the methods. However, video-recordings provide enriched data, including non-verbal communication, which could be important when studying PPE. Regarding indirect elicitation and the use of non-verbal communication, much remains unknown. Direct elicitations are facilitated by summarising and clear communication.[39 40] In our study, we identified summarising as an often-used clinician's response to the patient's preference, value or context. Indirect elements facilitating elicitation, such as rapport building, demonstrating empathy and acknowledging power dynamics,[39 40] were not part of our coding scheme, so we cannot make inferences about how it influenced elicitations. Research suggests that the clinician's behaviour is crucial for the patient to disclose information, for example, by showing empathy,[41] or supporting patients in voicing their perspectives.[42] For future research, we, therefore, recommend to use video-based data and expand the coding scheme to non-verbal communication.

There are some strengths and limitations of this study that need to be considered. The first strength is that we were able to operationalise the concept of PPE into a coding scheme. This resulted in distinguishing the often intermingled terms of preferences, values and contexts. Second, we nested this study into a larger implementation project as an opportunity to collect data from real-life clinical outpatient encounters expecting to contain some SDM. The latter was also confirmed with relatively high Observer OPTION[5] scores in our study. These were higher compared with those in other studies, including the specific item relating to eliciting preferences (item 4).[11 43] Higher Observer OPTION[5] scores have been reported in studies that implement a specific SDM tool,[43] while it is also associated with a relatively long consultation time.[43 44] These elements were both present in our study.

There are, however, also some limitations. First, we identified limitations regarding our data sample. We were restricted to 20 inclusions for multiple reasons: since it was hard to collect data because of the COVID-pandemic

and a challenge to identify beforehand whether an ePDA would be used in the upcoming consultation. In addition, including patients who were apt for using the ePDA led to including patients having clinically well-demarcated problems. Regarding the included outpatient clinics, it turned out that some outpatient clinics who were part of the implementation project, the number of eligible patients was estimated quite low by the clinicians. We, therefore, approached four outpatient clinics in total. However, given the explorative nature of this study, we think that our data set provided enough insight into apply the coding scheme and gain insight into PPE. Second, we did not see many lower health literate patients in our study. We think that the layout of the ePDA, being a tabular format with much text, does not feel inviting for people with lower health literacy skills. This is acknowledged in the literature: clinicians express concerns regarding the tabular ePDA format[25] while other formats that show pictorial information seem more suitable for this group.[45] Third, we did not explicitly evaluate whether the explored personal perspective was integrated into the care plan or final decision, since we recorded one encounter per patient. SDM is a process where sometimes a series of encounters is needed before a decision is made, instead of one moment in time.[46] We, therefore, would recommend to assess the integration of the elicited information in a study design where patients are followed over the course of multiple encounters. Patients' views were not involved in the first operationalisation of the coding scheme for PPE. In future research, it would be worthwhile to verify the observations with actual patient views of the consultation.

Furthermore, future research should focus on applying the coding scheme on a larger and more diverse sample and test further reliability of the coding scheme, such as calculating the intraclass correlation coefficient on PPE segments. In addition, it is interesting to include patient-reported data about PPE, that is, did patients feel that their perspectives were addressed, as it is known from SDM instruments that observer-reported and self-reported measures of SDM are not always congruent.[47] Furthermore, future research on PPE is needed to further unravel the black-box of implicit elicitation and disclosures as part of SDM during patient–clinician interactions. These components for future research will lead to a larger assessment of PPE in patient–clinicians interaction in addition to this exploratory study. Future studies might provide insight into how patient perspectives are (or are not) integrated in the clinical encounter which can fuel SDM training for clinicians with a focus on the expansion of the part of SDM called 'preference elicitation'.

CONCLUSION

The operationalisation of the concept 'PPE' through the exploration of preferences, values and contexts provides insight into an important aspect of SDM during patient–clinician interactions, that is, personal perspectives. Our analysis unravels which preferences, values and contexts were discussed during patient–clinician interactions where an ePDA was used. The coding scheme appeared feasible to apply, but needs further refinement.

Author affiliations
[1]IQ Health, Radboudumc, Nijmegen, The Netherlands
[2]Knowledge Institute of the Dutch Association of Medical Specialists, Utrecht, The Netherlands
[3]Radboudumc IQ Healthcare, Nijmegen, The Netherlands
[4]Dartmouth Institute for Health Policy and Clinical Practice, Lebanon, New Hampshire, USA
[5]Department of Gynecology and Obstetrics, Amsterdam UMC University Medical Center, Amsterdam, The Netherlands

X Dunja Dreesens @DunjaDHH and Glyn Elwyn @glynelwyn

ORCID iDs
Ester A Rake http://orcid.org/0000-0003-2262-3818
Dunja Dreesens http://orcid.org/0000-0002-5039-3370
Glyn Elwyn http://orcid.org/0000-0002-0917-6286

REFERENCES

1 Institute of Medicine (US) Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century. Washington (DC) National Academies Press (US); 2001.
2 Gerteis M, Edgman-Levitan S, Daley J, *et al*. *Through the Patient's Eyes: Understanding and Promoting Patient-Centered Care*. 1st edn. San Francisco: Jossey-Bass Publishers, 1993.
3 Elwyn G, Durand MA, Song J, *et al*. A three-talk model for shared decision making: multistage consultation process. *BMJ* 2017;359:j4891.
4 Weiner SJ. Contextualizing care: an essential and measurable clinical competency. *Patient Educ Couns* 2022;105:594–8.
5 Ting HH, Brito JP, Montori VM. Shared decision making: science and action. *Circ Cardiovasc Qual Outcomes* 2014;7:323–7.
6 Bomhof-Roordink H, Gärtner FR, Stiggelbout AM, *et al*. Key components of shared decision making models: a systematic review. *BMJ Open* 2019;9:e031763.
7 Makoul G, Clayman ML. An integrative model of shared decision making in medical encounters. *Patient Educ Couns* 2006;60:301–12.
8 Kunneman M, Gionfriddo MR, Toloza FJK, *et al*. Humanistic communication in the evaluation of shared decision making: a systematic review. *Patient Educ Couns* 2019;102:452–66.
9 Pieterse AH, Stiggelbout A. What are values, utilities, and preferences? A clarification in the context of decision making in health care, and an exploration of measurement issues. In: *Handbook of Health Decision Science*. 2016: 3–13.
10 Frankel RM, Stein T. Getting the most out of the clinical encounter: the four habits model. *J Med Pract Manage* 2001;16:184–91.
11 Rake EA, Box ICH, Dreesens D, *et al*. Bringing personal perspective elicitation to the heart of shared decision-making: a scoping review. *Patient Educ Couns* 2022;105:2860–70.
12 Charles C, Gafni A. The vexing problem of defining the meaning, role and measurement of values in treatment decision-making. *J Comp Eff Res* 2014;3:197–209.
13 Street RL, Elwyn G, Epstein RM. Patient preferences and Healthcare outcomes: an ecological perspective. *Expert Rev Pharmacoecon Outcomes Res* 2012;12:167–80.
14 Bastemeijer CM, Voogt L, van Ewijk JP, *et al*. What do patient values and preferences mean? A Taxonomy based on a systematic review of qualitative papers. *Patient Educ Couns* 2017;100:871–81.
15 Ortsäter G, Borgström F, Soulard S, *et al*. A budget impact model to estimate the environmental impact of adopting RESPIMAT(®) re-usable in the Nordics and Benelux. *Adv Ther* 2019;36:3435–45.
16 Karimi-Dehkordi M, Spiers J, Clark AM. An evolutionary concept analysis of "patients' values. *Nurs Outlook* 2019;67:523–39.
17 Fagerlin A, Pignone M, Abhyankar P, *et al*. Clarifying values: an updated review. *BMC Med Inform Decis Mak* 2013;13 Suppl 2:S8.
18 Mitchell K-AR, Brassil KJ, Rodriguez SA, *et al*. Operationalizing patient-centered cancer care: a systematic review and synthesis of the qualitative literature on cancer patients' needs, values, and preferences. *Psychooncology* 2020;29:1723–33.
19 Stacey D, Légaré F, Lewis K, *et al*. Decision AIDS for people facing health treatment or screening decisions. *Cochrane Database Syst Rev* 2017;4:CD001431.
20 Boersma L, Van Audenhove C. Patient involvement and shared decision making. *Radiat Oncol* 2018;127:S3.
21 Scalia P, Durand M-A, Berkowitz JL, *et al*. The impact and utility of encounter patient decision AIDS: systematic review, meta-analysis and narrative synthesis. *Patient Educ Couns* 2019;102:817–41.
22 Kemperman P, Geomini P, Aarts JWN, *et al*. Eindrapport Disseminatie- en Implementatieproject Keuzekaarten. Utrecht Nederlandse Vereniging voor Dermatologie en Venereologie; 2022.
23 Elwyn G, Lloyd A, Joseph-Williams N, *et al*. Option Grids: shared decision making made easier. *Patient Educ Couns* 2013;90:207–12.
24 Elwyn G, O'Connor A, Stacey D, *et al*. Developing a quality criteria framework for patient decision AIDS: online International Delphi consensus process. *BMJ* 2006;333:417.
25 Rake EA, Dreesens D, Venhorst K, *et al*. Potential impact of encounter patient decision aids on the patient–clinician dialogue: a qualitative study on Dutch and American Medical specialists' experiences. *BMJ Open* 2022;12:e048146.
26 Williams K, Herman R, Bontempo D. Comparing audio and video data for rating communication. *West J Nurs Res* 2013;35:1060–73.
27 Petrova M, Dale J, Fulford BKWM. Values-based practice in primary care: easing the tensions between individual values, ethical principles and best evidence. *Br J Gen Pract* 2006;56:703–9.
28 Armstrong MJ, Mullins CD. Value assessment at the point of care: incorporating patient values throughout care delivery and a draft taxonomy of patient values. *Value Health* 2017;20:292–5.
29 Leanza Y, Boivin I, Rosenberg E. Interruptions and resistance: a comparison of medical consultations with family and trained interpreters. *Soc Sci Med* 2010;70:1888–95.
30 Lehmann V, Smets EMA, de Jong M, *et al*. Patient-provider communication during second opinion consultations in oncology. *Patient Educ Couns* 2021;104:2490–7.
31 Friard O, Gamba M. BORIS: a free, versatile open-source event-logging software for Video/Audio coding and live observations. *Methods Ecol Evol* 2016;7:1325–30.
32 Kurasz AM, Smith GE, Curiel RE, *et al*. Patient values in healthcare decision making among diverse older adults. *Patient Educ Couns* 2022;105:1115–22.
33 Barr PJ, O'Malley AJ, Tsulukidze M, *et al*. The psychometric properties of observer OPTION(5), an observer measure of shared decision making. *Patient Educ Couns* 2015;98:970–6.
34 Shih P, Rapport F, Hogden A, *et al*. Relational autonomy in breast diseases care: a qualitative study of contextual and social conditions of patients' capacity for decision-making. *BMC Health Serv Res* 2018;18:818.
35 Cornelissen LE, van der Mark EJ, Pennings P, *et al*. What matters to patients with rheumatoid arthritis when facing medical or non-medical treatment decisions? *Patient Prefer Adherence* 2021;15:1827–41.
36 Rocque R, Chipenda Dansokho S, Grad R, *et al*. What matters to patients and families: a content and process framework for clarifying preferences, concerns, and values. *Med Decis Making* 2020;40:722–34.
37 dosReis S, Butler B, Caicedo J, *et al*. Stakeholder-engaged derivation of patient-informed value elements. *Patient* 2020;13:611–21.
38 Weiner SJ, Schwartz A. Contextual errors in medical decision making: overlooked and understudied. *Acad Med* 2016;91:657–62.
39 Vingerhoets C, Hay-Smith J, Graham F. Getting to know our patients and what matters: exploring the elicitation of patient values, preferences, and circumstances in neurological rehabilitation. *Disabil Rehabil* 2023;45:1444–52.
40 Butow PN, Brown RF, Cogar S, *et al*. Oncologists' reactions to cancer patients' verbal cues. *Psychooncology* 2002;11:47–58.
41 Reid HW, Parente V, Gupta MD, *et al*. Examining the relationship between clinician communication and patient participatory behaviors in cardiology encounters. *Patient Educ Couns* 2022;105:3473–8.
42 Frosch DL, May SG, Rendle KAS, *et al*. Authoritarian physicians and patients' fear of being labeled 'Difficult'Among key obstacles to shared decision making. *Health Affairs* 2012;31:1030–8.
43 Couët N, Desroches S, Robitaille H, *et al*. Assessments of the extent to which health-care providers involve patients in decision making: a systematic review of studies using the OPTION instrument. *Health Expect* 2015;18:542–61.
44 Driever EM, Stiggelbout AM, Brand PLP. Shared decision-making in different types of decisions in medical specialist consultations. *J Gen Intern Med* 2022;37:2966–72.
45 Durand M-A, Yen RW, O'Malley AJ, *et al*. What matters most: randomized controlled trial of breast cancer surgery conversation AIDS across socioeconomic strata. *Cancer* 2021;127:422–36.
46 Joseph-Williams N, Williams D, Wood F, *et al*. A descriptive model of shared decision making derived from routine implementation in clinical practice ('implement-SDM'): qualitative study. *Patient Educ Couns* 2019;102:1774–85.
47 Williams D, Edwards A, Wood F, *et al*. Ability of observer and self-report measures to capture shared decision-making in clinical practice in the UK: a mixed-methods study. *BMJ Open* 2019;9:e029485.

9

48 Witteman HO, Gavaruzzi T, Scherer LD, *et al*. Effects of design features of explicit values clarification methods: a systematic review. *Med Decis Making* 2016;36:760–76.

49 Armstrong MJ. Shared decision-making in stroke: an evolving approach to improved patient care. *Stroke Vasc Neurol* 2017;2:84–7.