



OPTION⁵ versus OPTION¹² instruments to appreciate the extent to which healthcare providers involve patients in decision-making



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ABSTRACT

Objective: The 12-item “observing patient involvement” (OPTION¹²)-instrument is commonly used to assess the extent to which healthcare providers involve patients in health-related decision-making. The five-item version (OPTION⁵) claims to be a more efficient measure. In this study we compared the Dutch versions of the OPTION-instruments in terms of inter-rater agreement and correlation in outpatient doctor-patient consultations in various settings, to learn if we can safely switch to the shorter OPTION⁵-instrument.

Methods: Two raters coded 60 audiotaped vascular surgery and oncology patient consultations using OPTION¹² and OPTION⁵. Unweighted Cohen's kappa was used to compute inter-rater agreement on item-level. The association between the total scores of the two OPTION-instruments was investigated using Pearson's correlation coefficient (r) and a Bland & Altman plot.

Results: After fine-tuning the OPTION-manuals, inter-rater agreement for OPTION¹² and OPTION⁵ was good to excellent (kappa range 0.69–0.85 and 0.63–0.72, respectively). Mean total scores were 23.7 (OPTION¹²; SD=7.8) and 39.3 (OPTION⁵; SD=12.7). Correlation between the total scores was high ($r=0.71$; $p=0.01$). OPTION⁵ scored systematically higher with a wider range than OPTION¹².

Conclusion: Both OPTION-instruments had a good inter-rater agreement and correlated well. OPTION⁵ seems to differentiate better between various levels of patient involvement.

Practical implication: The OPTION⁵-instrument is recommended for clinical application.

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1. Introduction

Shared decision making (SDM) is the process in which both healthcare providers and patients participate to make decisions about their health management strategies, using the best available evidence [1]. Research has shown that patients desire a more active role in decision-making [2,3]. Besides, patients have a legal right to receive adequate information. This legal imperative should be satisfactorily met in an SDM process, as it includes the presentation of the different treatments strategies that are available, including their benefits and harms. Besides, patients' preferences may differ from the doctors' and when there is

equipoise between two or more different options, patients' preferences should be leading [4,5]. An SDM process involves the elicitation and consideration of patients' preferences and helps secure that patients' preferences guide the final choice. Also, evidence shows that involving patients in decision-making increases patients' satisfaction with their care and, thus, improves quality of care [6–9].

Given the increasing interest in SDM among healthcare providers and policy makers [9], it is important to measure the extent to which healthcare providers involve patients in decisions about health management strategies. By doing so, current levels of SDM can be assessed, the effectiveness of interventions introduced to promote SDM can be evaluated [1], and clinical performance can be audited.

In the past decade several instruments have been developed to measure various aspects of the SDM-process [10]. Some instruments focus on the patients' subjective perspective [10,11]. The OPTION (“observing patient involvement”) 12-item scale measures

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the extent to which healthcare providers involve patients in decision-making from the perspective of an independent observer, who judges the live conversation or recordings or transcripts of it [1].

However, it has been hypothesized that “a better observable behavior and more brief measure would have some important benefits, such as improved construct validity, given a focus on a set of behaviors specific to SDM; improved reliability because raters would be required to assess fewer, more relevant, and better defined and observable behaviors; and increased efficiency because of shorter completion time” [12].

For these reasons a revised, shorter version of the OPTION¹² was developed by conflating and adapting some of its items, resulting in the OPTION⁵ instrument [12]. Data from a clinical setting suggest that the OPTION⁵ instrument has a high internal consistency and discriminative validity, and correlates highly with the OPTION¹² instrument [13].

In this study we aimed at investigating the performance of the Dutch OPTION⁵ in terms of inter-rater agreement and its correlation with the OPTION¹² instrument in outpatient doctor-patient consultations in which a treatment decision is made, in multiple clinical settings.

2. Materials and methods

2.1. Design

This was a multicenter cross-sectional descriptive validation study. We used audio-recordings from previously conducted studies on the evaluation of communication and decision-making during outpatient doctor-patient consultations in different clinical settings [14–16]. The recordings had all been made to investigate patient involvement in the decision-making process as to treatment choices in usual care situations using the OPTION¹² instrument. In this study these recordings were reviewed and analysed using both OPTION instruments.

The local ethics review boards had approved the original studies, and waived the necessity for further ethical review. In these studies the patients had given informed consent for audiotaping the consultation with their clinician.

2.2. Setting

Outpatient departments of three Dutch university hospitals (Academic Medical Center, Maastricht University Medical Center and Leiden University Medical Center) and their affiliated centers.

2.3. Observation instruments

The Dutch version of the OPTION¹² instrument was already at hand (see Appendix A). The OPTION⁵ instrument, including its coding manual, was made available by the developers (see Appendix B). The instrument was translated into Dutch following

a forward-backward procedure: Investigators who are native Dutch speakers with fluent command of the English language (DU, TW, AP, AS) independently translated the five items into Dutch. Each of these translations was translated back into English by an English speaker with fluent command of the Dutch language (JWMA) and revised until agreement was reached among the translators. Each item (for example: “The clinician checks that the patient has understood the information”) in both instruments was scored on a zero (no effort) to four (exemplary effort) point scale. This score reflected the extent to which the clinician showed a particular behavior. The English versions of the two measures have been applied and described before in several publications [1,7,12,13].

2.4. Participants

We purposively selected participants from existing studies that recruited patients with different medical conditions, i.e., breast cancer, colorectal cancer, and vascular surgical conditions. Hence, the present patient sample represented various disorders and healthcare providers. Except for breast cancer, we also purposively selected an equal number of male and female patients. This was done to appreciate the overall performance of the OPTION instruments in various settings, rather than to explore differences between disorders or specialties.

We eventually included the audio-recordings of a random selection of 15 decision making consultations of cancer patients with their medical oncologist, 15 with a radiation oncologist, 8 with a surgical oncologist, 7 with a surgical oncology nurse, and 15 vascular patients with their vascular surgeon. The 60 consultations were performed by 37 care providers aged 38–66 years and of whom 15 were men. None of the healthcare providers involved had received prior formal SDM training. This allowed us to analyse 60 consultations on preference-sensitive treatment decisions. In case decisions about more than one treatment had been made during the consultation (e.g., about a combination of surgical, hormonal and/or chemotherapy), the raters first selected one main decision for analysis.

2.5. Study conduct

Two raters (FES, RF) were trained in applying the coding schemes using the original manuals and seven virtual consultations available on the OPTION instrument website (<http://www.optioninstrument.org/>). The raters were unaware of the coding results in the previous studies using the OPTION¹² instrument. Then, they independently coded randomly selected consultations (two from each of the medical contexts) using the OPTION¹² and calculated their inter-rater agreement. If agreement was below acceptable levels (i.e., kappa-values below 0.6), the raters would discuss discrepancies in their interpretation of the scores and repeat the procedure with another set of eight recordings.

Next, the raters each scored yet another five consultations using OPTION⁵. This was also repeated until their agreement for this instrument was acceptable. In this training phase, agreement was analysed for each specialty separately to detect possible provider- and disease-specific differences, if any, that would need further discussion.

Consultations were not included in the final analysis until the inter-rater agreement was above acceptable levels. There was at least a two-week interval between the OPTION¹² and OPTION⁵ ratings to avoid recall bias of the scores previously given. If the patient initiated one of the behaviors to be scored in either OPTION instrument and the clinician or provider responded to this call, for instance when the patient voiced their preference regarding a treatment option without specifically being asked about it and the

Table 1
Inter-observer agreement of OPTION¹² and OPTION⁵ scores (unweighted Kappa scores) of N = 60 consultations by specialty.

Specialty	N	OPTION ¹²		OPTION ⁵	
		Kappa	Kappa	Kappa	Kappa
Overall	60	0.76		0.68	
Radiotherapy	15	0.85		0.67	
Breast surgery	15	0.79		0.63	
Medical oncology	15	0.71		0.72	
Vascular surgery	15	0.69		0.70	

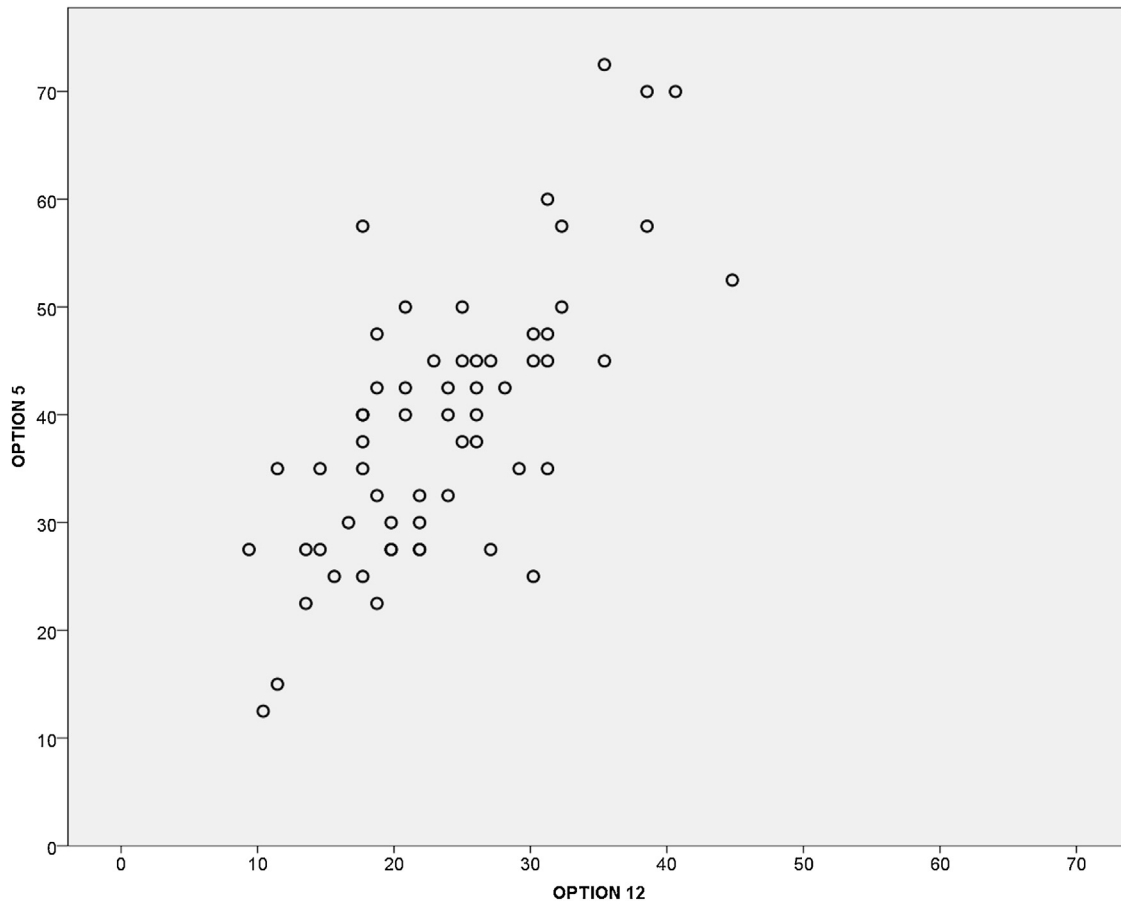


Fig. 1. Scatterplot of OPTION¹² and OPTION⁵ total scores.

clinician responded to this, it was scored as if the clinician had initiated the topic.

2.6. Data analysis

Inter-rater agreement between the raters for each OPTION instrument was expressed as unweighted Cohen's kappa (κ) values. The κ -value is a chance-corrected measure of agreement that ranges between -1 and 1 . Values above 0.8 are considered excellent, between 0.6 and 0.8 as good, between 0.4 and 0.6 as fair, and between 0.2 and 0.4 as poor [17]. K -values were calculated for each OPTION-item separately. The mean value of the total scores by each rater was taken as OPTION score for each consultation. The total scores of both instruments were expressed as percentages of their maximum scores (i.e., 48 and 20 points for the OPTION¹² and OPTION⁵, respectively). This percentage represented the mean score of the overall clinicians' behavior to involve patients in the decision making process.

The Pearson product moment correlation coefficient (r) was used, after checking for the normality of the distribution, to determine the association between the OPTION¹² and OPTION⁵ instruments. Additionally, the relationship between OPTION⁵ and OPTION¹² total scores scales was analysed by means of a Bland & Altman plot [18]. This graph plots the differences between both total scores against their mean total scores and offers additional information regarding a possible systematic difference in total scores between the OPTION instruments, including a 95% confidence interval (CI) of this difference, and possible divergences across the range of OPTION scores.

3. Results

Each patient was included only once in this study. Of the 60 patients, 21 were male and 39 female. Their age ranged between 47 and 77 years. The treatment options discussed were mastectomy, lumpectomy, adjuvant radiotherapy, adjuvant hormonal therapy, adjuvant chemotherapy, rectal cancer resection with or without a permanent stoma and treatment for vascular disorders (claudication, aortic aneurysm, venous insufficiency). The duration of the consultations ranged from 11 to 58 min.

After coding the virtual consultations, inter-rater agreement was below acceptable levels. Because of individual differences in the interpretation of the predefined score levels it was not clear, for example, when to score 'minimal' or 'moderate' effort. At this point, the two raters decided to refine the manuals for both instruments to make sure they agreed on how exactly to score the healthcare providers' behavior. The adapted, more extensive manuals used for the present application of the OPTION instruments are presented in [Appendices A and B](#) [16].

Subsequently, the two raters reached acceptable levels of agreement using OPTION¹² after the first set of eight recordings ($\kappa = 0.85, 0.74, 0.67,$ and 0.65 for radiotherapy, surgical oncology, medical oncology, and vascular surgery, respectively). The same was true for the OPTION⁵, showing κ -values of $0.69, 0.67, 0.69,$ and 0.72 , respectively.

[Table 1](#) shows the inter-observer agreements for the 60 audio-taped doctor-patient consultations. K -values for the OPTION¹² and OPTION⁵ instruments were all above 0.6 . K -values tended to be higher with the OPTION¹² instrument than with the OPTION⁵ instrument.

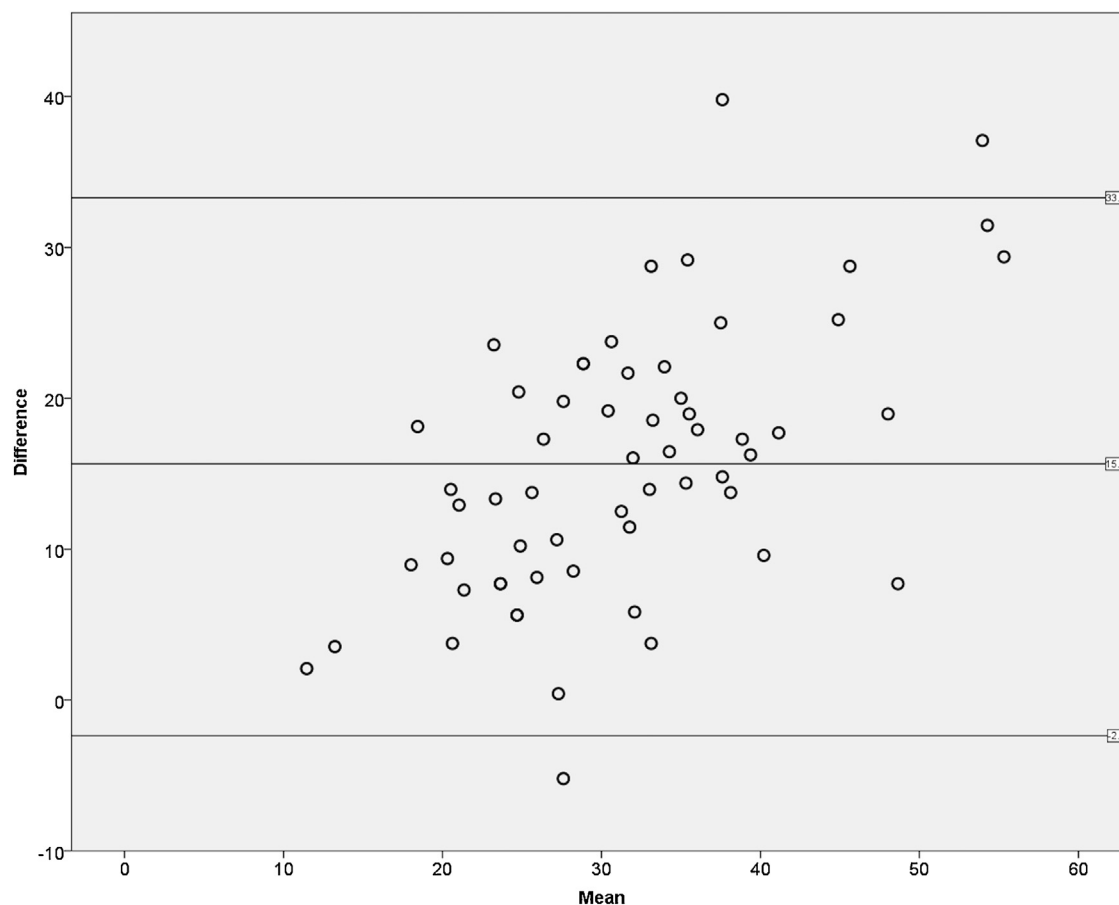


Fig. 2. Bland & Altman plot. The mean of the OPTION¹² and OPTION⁵ total scores for each consultation on the X-axis is plotted against the difference between these scores (OPTION⁵ minus OPTION¹² total score) on the Y-axis. Horizontal lines indicate the mean difference with its 95% limits of agreement.

Mean total OPTION scores for the 60 encounters were 23.7 (SD 7.8) and 39.3 (SD 12.7) for the OPTION¹² and OPTION⁵ instruments, respectively. On the original 0–4 scale, this means a mean score of about 1 for the OPTION¹² and 2 for the OPTION⁵ instrument. Fig. 1 shows a positive correlation between the OPTION¹² instrument and the OPTION⁵ instrument (Pearson $r=0.71$; $p=0.01$). OPTION¹² scores ranged from 9 to 45, whereas OPTION⁵ scores varied between 13 and 73. In addition, the Bland & Altman plot (Fig. 2) shows that the OPTION⁵ total scores were consistently, and on average 16 points (95% CI 2–33 points), higher than the OPTION¹² total scores. The difference between both scores clearly increased with increasing mean scores.

4. Discussion and conclusion

4.1. Discussion

This study shows that the two OPTION instruments correlate well and have a good inter-observer agreement at the item level. The OPTION⁵ instrument shows consistently higher total scores than the OPTION¹². Furthermore, the five-item scale seems more sensitive to differentiate between low and high scores for patient involvement. Overall, the OPTION⁵ instrument seems a good alternative to the OPTION¹² instrument as it contains less items to be judged. This implies using the OPTION⁵ may take less time and be less burdensome, although one still has to appraise the whole conversation, irrespective of the instrument used.

Initially, despite the existing manuals, it was hard to achieve an acceptable inter-observer reliability. Discrepancies in scores between the two raters were likely due to differences in the

interpretation of relevant parts of the conversations. We believe the suggested revisions of the manuals are essential for a proper judgment using the OPTION scales, as a clear delineation of the behaviors to be measured improves inter-rater reliability. There is no reason to assume that these revisions deviate from the interpretation as intended by the original authors.

We eventually achieved a good inter-observer agreement. Barr et al [13], also found that the OPTION⁵ can be performed with a good inter-observer agreement. In contrast to what they did, we calculated unweighted κ -values, which are more sensitive to inter-observer interpretation differences. Even then, inter-observer agreement was found to be high, indicating that, if raters are properly trained and use the extended manuals, these instruments can be used reliably.

Our findings regarding the total OPTION scores are in agreement with those from a systematic review by Couët et al [1], and the recent study by Barr et al [13]. Couët found a mean OPTION score of 23, which is similar to our mean OPTION¹² score, indicating low levels of patient-involving behavior. The wider range and systematically higher scores using the OPTION⁵ instrument imply that differences observed with each instrument should be interpreted and handled differently. Although the mean total scores for both OPTION instruments were different, the actual levels of patient involvement were obviously the same as they were rated in the same doctor-patient encounters. As there is no reference standard, it is unclear whether the OPTION⁵ might overestimate or the OPTION¹² might underestimate actual patient involvement. The OPTION⁵, however, might score higher as it leaves out the OPTION¹² items describing that were not deemed to be key steps in an SDM-process. Also, some doctors might find

these behaviors somewhat artificial, for example gauging how patients want to receive information, and asking patients what their preferred involvement in decision-making is. The presence of items in the OPTION¹² instrument that seemed less relevant to the SDM-process, and therefore received low scores, may have led to a smaller range of scores and may be an explanation for the differences found between both instruments. However, the items deleted in the OPTION⁵ version that gauge how patients want to receive information, invite patients to pose questions, and ensure the patient understood the information (i.e., OPTION¹² items 3, 8 and 9), may still support the SDM process. The differences found also have consequences for sample size calculations for studies using (one of) these instruments. Until now, sample sizes for trials employing the OPTION⁵ were based on 3.5–10-point differences in OPTION¹² scores and their standard deviations [13,19]. For future studies using OPTION⁵, these calculations can and should now be based on data known for OPTION⁵.

In this study we intentionally introduced variation in disorders and specialties. Although these could obviously not represent all kinds of disorders or specialties, there is no reason to believe that the OPTION instruments would not be valid for other areas in medicine. Finally, the OPTION instruments merely address the provider's behavior to evaluate patient involvement in the decision-making process. To measure the level of SDM in doctor-patient encounters we are still in need of an instrument that also addresses the SDM behavior of the patient.

4.2. Conclusion

The inter-observer reliability for both OPTION instruments was found to be good, but only after refining their manuals. The OPTION⁵ instrument shows a wider range in results and contains fewer items. Hence, it should be better suited to differentiate between various levels of SDM.

4.3. Practice implication

The OPTION⁵ instrument is recommended for clinical application. It can be applied, for example, to test individual performance and improvement, as well as on an institutional level to test yearly the performance of groups of healthcare providers and give them feedback.

Conflict of interests

There are no conflicts of interest.

Funding sources

There were no funding sources for the current research.

Appendix A.

Table A1

Table A1
Refined scoring definitions for the OPTION¹² manual [16].

Item	Description	Specification
1	The clinician draws attention to an identified problem as one that requires a decision making process.	0—not observed 1—short problem definition 2—attention the problem, baseline skill 3—attention the problem, decision should be made 4—need for a decision
2	The clinician states that there is more than one way to deal with the identified problem ('equipose').	0—no options mentioned 1—listing the options 2—little explanation of the options 3—explaining pros and cons of all options 4—both options are o.k., depends on the preferences of the patient
3	The clinician assesses the patient's preferred approach to receiving information to assist decision making (e.g. discussion, reading printed material, assessing graphical data, using videotapes or other media).	0—no information 1—short (do you want a brochure?) 2—how do you like to receive the information 3—several options are possible to receive information 4—listing examples how to receive information and ask the preferences of the patient
4	The clinician lists 'options', which can include the choice of 'no action'.	0—no options mentioned 1—listing the options 2—little explanation of the options (you can choose . . . or . . .) 3—extensively listing options (no action is a possibility) 4—very detailed explanation of all options
5	The clinician explains the pros and cons of options to the patient (taking 'no action' is an option).	0—no explanation 1—explaining pros and cons of some options 2—explaining pros and cons of all options 3—explaining pros and cons of all options including the little pros and cons 4—very detailed explanation of the pros and cons of all options
6	The clinician explores the patient's expectations (or ideas) about how the problem(s) are to be managed.	0—not observed 1—asking the expectations in passing 2—asking the expectations (only asking) 3—asking the expectations 4—asking the expectations, high standard (discussing the expectations)
7	The clinician explores the patient's concerns (fears) about how problem(s) are to be managed.	0—not observed

Table A1 (Continued)

Item	Description	Specification
8	The clinician checks that the patient has understood the information.	1—asking about the concerns (in passing) 2—asking about the concerns (only asking) 3—asking about the concerns 4—asking about the concerns, high standard (discussing the concerns) 0—not observed 1—listing the options 2—is it clear (you can ask questions) 3—checking if it is clear by asking the patient to repeat the information 4—high standard
9	The clinician offers the patient explicit opportunities to ask questions during the decision making process.	0—not observed 1—breaks or interruptions 2—possibility to ask questions (Do you have any questions) 3—any questions about the options or treatments? 4—any questions about the options or treatments? High standard
10	The clinician elicits the patient's preferred level of involvement in decision-making.	0—not observed 1—short asking 2—asking explicit (do you want to be involved in decision making?) 3—information about the possible options in involvement 4—easy to understand for the patient
11	The clinician indicates the need for a decision making (or deferring) stage.	0—no indication 1—decision should be made 2—indicates need for decision 3—indicates need for decision, good standard 4—indicates need for decision, high standard
12	The clinician indicates the need to review the decision (or deferment).	0—not observed 1—short (follow-up appointment) 2—follow-up appointment, possible to return the decision 3—appointment for evaluating the decision, good standard 4—appointment for evaluating the decision, high standard (explicit)
Total score 0–60 Rescale 0–100		

Appendix B.**Table B1****Table B1**Refined scoring definitions for the OPTION⁵ manual.

Item	Description	Specification
1	The provider draws attention to, or re-affirms, a problem where alternate treatment or management options exist, and which requires the initiation of a decision making process. If the patient draws attention to the availability of options, and the provider responds by agreeing that the options need consideration, the item can also be scored positively.	0—not observed 1—problem definition 2—listing the options 3—equality of the options 4—is it clear/any questions
2	The provider reassures the patient, or re-affirms, that the provider will support the patient to become informed. The provider will support/explain the need to deliberate about the options.	0—not observed 1—decide together 2—mention is it a difficult choice 3—will support irrespective of the choice of the patient 4—both options are o.k., depends on the preferences of the patient, provider has a supportive role
3	The provider gives information, or re-affirms/checks understanding, about options that are considered reasonable (including taking 'no action'), to support the patient in understanding/ comparing the pros and cons.	0—no information 1—listing the options 2—explaining pros and cons 3—is it clear/any questions 4—ask the patient to repeat the information

Table B1 (Continued)

Item	Description	Specification
4	The provider supports the patient to examine, voice, and explore his/her personal preference in response to the options that have been described.	0—not observed 1—exploring preferences 2—exploring concerns 3—exploring expectations 4—integrates preferences/concerns/expectations for recommendation
5	The provider makes an effort to integrate the patient's preferences as decisions are either made by the patient or arrives at by a process of collaboration and discussion.	0—not observed 1—indicates need for decision 2—additional information to review the decision at home 3—appointment for evaluating the decision 4—provider indicates that the patient can abandon earlier choice
Total score 0–20 Rescale 0–100		

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