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Shared Decision-making in Different Types of Decisions in Medical Specialist Consultations

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BACKGROUNDS: Research on shared decision-making (SDM) has mainly focused on decisions about treatment (e.g., medication or surgical procedures). Little is known about the decision-making process for the numerous other decisions in consultations.

OBJECTIVES: We assessed to what extent patients are actively involved in different decision types in medical specialist consultations and to what extent this was affected by medical specialist, patient, and consultation characteristics.

DESIGN: Analysis of video-recorded encounters between medical specialists and patients at a large teaching hospital in the Netherlands.

PARTICIPANTS: Forty-one medical specialists (28 male) from 18 specialties, and 781 patients.

MAIN MEASURE: Two independent raters classified decisions in the consultations in decision type (main or other) and decision category (diagnostic tests, treatment, follow-up, or other advice) and assessed the decision-making behavior for each decision using the Observing Patient Involvement (OPTION)[5] instrument, ranging from 0 (no SDM) to 100 (optimal SDM). Scheduled and realized consultation duration were recorded.

KEY RESULT: In the 727 consultations, the mean (SD) OPTION[5] score for the main decision was higher (16.8 (17.1)) than that for the other decisions (5.4 (9.0), $p<0.001$). The main decision OPTION[5] scores for treatment decisions ($n=535$, 19.2 (17.3)) were higher than those for decisions about diagnostic tests ($n=108$, 14.6 (16.8)) or follow-up ($n=84$, 3.8 (8.1), $p<0.001$). This difference remained significant in multilevel analyses. Longer consultation duration was the only other factor significantly associated with higher OPTION[5] scores ($p<0.001$).

CONCLUSION: Most of the limited patient involvement was observed in main decisions (versus others) and in treatment decisions (versus diagnostic, follow-up, and advice). SDM was associated with longer consultations. Physicians' SDM training should help clinicians to tailor promotion of patient involvement in different types of decisions. Physicians and policy makers should allow sufficient consultation time to support the application of SDM in clinical practice.

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INTRODUCTION

Encounters between physicians and patients often address multiple problems for which decisions need to be made. Over the last decades, actively involving the patient in clinical decision-making has been promoted by scientific organizations, healthcare authorities, and patient advocacy groups, to support patient autonomy and to provide individualized, patient-centered, evidence-based care.[1–4] The aim is to reach a decision which not only is based on medical evidence and clinical reasoning, but also best fits the patient's context, values, and preferences. This approach has been termed shared decision-making (SDM).[1]

A decision in a medical consultation has been broadly defined as "a verbal statement committing to a particular course of action."[5] Physicians make decisions of many different categories in their medical consultations, some of which can be considered judgments[6], but only decisions regarding further diagnostic testing, treatment, follow-up, or giving other advice directly involve the patient and are potentially suitable for SDM. In hospital care, the models describing the process of SDM have been mainly based on analyses of treatment decisions.[7,8] The degree of SDM in the other common categories of decisions in medical consultations is unknown to date. The aim of the present study therefore was to examine and compare medical specialists' decision-making behavior with patients for different types and categories of decisions in medical encounters, and to assess to what extent this was affected by physician, patient, and consultation characteristics.

METHODS

We recorded outpatient encounters between medical specialists and patients on video in Isala Hospital, a large teaching hospital in a mixed urban–rural area in the Netherlands serving a population of approximately 600,000 people. The

sample of videotaped consultation was obtained between November 2018 and April 2019. In the Netherlands, medical specialists in general hospitals such as Isala are either employed by the hospital or organized in independent entrepreneur partnerships. Physicians can set their own appointment times, in which both patients care and efficiency issues are taken into consideration.

Participants and Recruitment Procedure

All participating physicians in this study were medical specialists working at Isala Hospital and they were recruited among participants of our previous cross-sectional survey.[9] We aimed to include a minimum of 30 medical specialists and 10 consultations per medical specialist, which is a requirement for multilevel analysis of nested observation at the level of the healthcare professional.[10] Consecutive outpatients of participating physicians were included in the study. To protect the anonymity of patients, only the physicians were visibly recorded on video; the patient was only captured on audio. Participating physicians were aware that their decision-making behavior in consultation was being scored.

Data Analysis

Decision Type and Categories

We distinguished the main decision from all other decisions in a consultation (decision type). The main decision was defined as the decision that was directly related to the patient's chief complaint as expressed during the consultation. All decisions were classified into four categories: diagnostic (gathering additional information), treatment, follow-up, and other advice. These categories were derived from the DICTUM taxonomy of medical decisions,[6] limited to those decision categories that lend themselves to actual SDM with patients, leaving out the categories that largely take place in the healthcare provider's mind as part of clinical reasoning or judgment.

Patient Involvement

We used the Observing Patient Involvement (OPTION) scale to assess the extent to which physicians involve patients in the decision-making process. The OPTION^5 is the validated concise version of the OPTION instrument developed to assess patient involvement in medical encounters,[11] and considered to be more efficient with a lower cognitive burden for raters than the original 12-item instrument.[12] Following the OPTION^5 manual, each item was scored on a Likert scale ranging from 0 (not observed) to 4 (executed to a high standard). The total score (0–20) was rescaled to range from 0 to 100.[13] The coding process was executed following the OPTION^5 scoring manual.[13] In view of the large number of encounters, two researchers were used for the scoring process (EMD and RH, a linguistics master student). Both were trained in the application of the OPTION^5 scoring system. To ensure interrater reliability, both researchers independently scored the first 29 videotaped encounters, and compared and discussed differences until consensus was reached. They then independently coded 179 subsequent encounters and achieved excellent interrater agreement (intraclass correlation coefficient 0.94 (95% confidence interval 0.92–0.95). The remaining consultations were coded by one of the researchers (141 consultations by RH and 381 consultations by EMD).

Statistical Analysis

The OPTION^5 sale is ordinal by design, which would require nonparametric statistical analyses. In most studies, however, OPTION^5 scores have been analyzed as a continuous variable with parametric statistical techniques.[14] We therefore assessed the differences of OPTION^5 scores between groups with both nonparametric (Mann–Whitney *U* test and Wilcoxon signed-rank test) and parametric (Student's *t* test and one-way analysis of variance) analyses. Because these analyses showed comparable results, further data analysis was carried out with parametric tests to facilitate comparison with other studies. For all analyses, the alpha level was set at 0.05. Given the nested nature of the data, with multiple observations of each participating physician, we built random intercept multilevel models, with the type and category of decision as the predictor and the OPTION^5 score as outcome, for adjusting potential confounding variables, including discipline (medical, surgical, or supportive, as described earlier[15]) physicians' and patients' age and gender, consultation duration, and consultation type (new patient, or follow-up consultation). Univariate analyses were performed using SPSS (version 26). Multilevel analyses were performed using MLWIN (version 3.04) and STATA® (version 14).

Ethics

The Ethical Review Board of Isala Hospital approved the study (file number 200308). All participating medical specialists and patients provided written informed consent.

RESULTS

Forty-one medical specialists (28 male (68%), mean (SD) age 47.9 (8.0) years, from 18 specialties (23 from medical and 18 from surgical discipline)) and 781 patients (15–24 per medical specialist) participated in the study. None of the participants had received specific SDM training. After excluding 36 consultations of insufficient audio quality and 18 preoperative anesthesiology consultations in which no decisions were made, 1564 decisions in 727 consultations were

available for analysis (Table 1). The median (range) number of decisions per consultations was two (one to six). Of the 727 patients, 347 were male (48%) and mean (SD) age was 48.6 (24.6) years. There were 239 consultations with new patients (33%) and 488 follow-up consultations (67%). A total of 243 consultations (33%) lasted 0–10 min, 301 (41%) 10–20 min, 118 (16%) 20–30 min, and 65 (9%) > 30 min.

Type and Categories of Decisions and OPTION[5] Scores

An overview of types and categories of decisions is presented in Table 2, along with the associated OPTION[5] scores. OPTION[5] scores of main decisions were significantly higher (mean (SD) 16.8 (17.1)) than those of other decisions (5.4 (9.0), $p < 0.001$). For the main decisions, treatment decisions showed higher OPTION[5] scores than diagnostic or follow-up decisions (p-value < 0.001).

Multilevel Analysis of All Decisions

In an unadjusted multilevel analysis with all decisions, the decision type (main decision versus other decisions) was significantly related to OPTION[5] score (regression coefficient − 11.7, SE 0.9). The category of the decision (treatment versus the other categories) was also significantly related to OPTION[5] scores (regression coefficient − 12.6, SE 0.7) in an unadjusted analysis. There was considerable variation in OPTION[5] scores both within and between physicians (figure A in the supplementary appendix). After adjusting for patient, physician, and consultation characteristics in multilevel analysis, higher OPTION[5] scores were significantly associated with the decision type, the decision category, and longer consultation duration. Table 3 presents the model that fitted the data best. The full model with all patient and medical specialist characteristics is presented in table A in the supplementary appendix. This full model showed similar results to the model presented in Table 3, but with lower overall fit.

Consultation Duration

The mean (SD) OPTION[5] scores of the main decision in consultations lasting 0–10, 10–20, 20–30, and > 30 min were 9.2 (12.0), 17.0 (15.8), 26.3 (19.4), and 26.2 (20.5) respectively (see Fig. 1). In univariate analyses, actual consultation time was associated with higher OPTION[5] scores ($r = 0.4$, $p < 0.001$). In the 94 consultations that took five or more minutes longer than planned, mean (SD) OPTION[5] score was 30.0 (20.6), which was significantly higher than the scores in the 435 consultations that were realized within the scheduled time (± 5 min) (15.5. (15.8)) or those in consultations which lasted at least 5 min shorter than scheduled ($n = 197$, 13.11 (14.9), $p < 0.001$). There was a significant positive association between the number of decisions taken in a consultation and the consultation duration (rho = 0.369, $p < 0.001$).

Table 1 Participating Medical Specialists and Their Specialties

Discipline	**Specialty**	**Number of consultations**		**Number of decisions**		Consultation duration (minutes)
		N	(%)	*N*	(%)	Mean (SD)
Medical (*N* = 23)	Internal medicine (*N* = 1)	22	(3.0%)	59	(3.8%)	16.5 (5.5)
	Rheumatology (*N* = 2)	35	(4.8%)	88	(5.6%)	15.2 (6.8)
	Cardiology (*N* = 1)	17	(2.3%)	41	(2.6%)	18.2 (9.0)
	Pulmonology (*N* = 2)	40	(5.5%)	100	(6.4%)	13.0 (6.2)
	Neurology (*N* = 3)	61	(8.4%)	141	(9.0%)	15.8 (7.3)
	Gastroenterology (*N* = 2)	39	(5.4%)	91	(5.8%)	16.3 (5.5)
	Pediatrics (*N* = 6)	94	(12.9)	245	(15.7%)	24.1 (9.3)
	Sport medicine (*N* = 2)	30	(4.1%)	70	(4.5%)	27.0 (9.3)
	Radiotherapy (*N* = 2)	32	(4.4%)	56	(3.6%)	21.6 (11.3)
	Anesthesiology (*N* = 2)	18	(2.5%)	23	(1.5%)	9.1 (2.9)
Surgical (*N* = 18)	General surgery (*N* = 1)	16	(2.2%)	31	(2.0%)	17.0 (10.6)
	Ear, nose and throat surgery (*N* = 3)	62	(8.5%)	113	(7.2%)	8.1 (4.0)
	Urology (*N* = 2)	42	(5.8%)	91	(5.8%)	14.1 (7.8)
	Obstetrics and gynecology (*N* = 3)	48	(6.6%)	88	(5.6%)	14.3 (7.8)
	Orthopedics (*N* = 2)	38	(5.2%)	71	(4.5%)	8.2 (3.9)
	Plastic surgery (*N* = 2)	42	(5.8%)	73	(4.7%)	9.5 (5.5)
	Neurosurgery (*N* = 3)	53	(7.3%)	103	(6.6%)	11.6 (6.1)
	Ophthalmology (*N* = 2)	38	(5.2%)	80	(5.2%)	9.0 (4.5)
Total (*N* = 41)		**727**	**1564**			**15.1 (9.0)**

Table 2 Type and Category of Decisions with Associated OPTION[5] Scores (on a 0–100 Scale) in 727 Medical Encounters with 41 Medical Specialists

Decision category	Content	Type of decisions				
		Main decisions ($N=727$)		**Other decisions ($N=837$)**		
		N	OPTION[5] Mean (SD)	N	OPTION[5] Mean (SD)	p-value
Diagnostic	Decisions to obtain information from other source than patient interview and physical examination (e.g., ordering test, consulting colleague)	108	14.6 (16.8)	202	6.0 (9.9)	<0.001
Treatment	Decision to intervene on a medical problem, plan, perform or refrain from therapeutic procedures of a medical nature (e.g., drug related decisions or planning an operation)	535	19.2 (17.3)*	95	10.3 (10.6)*	<0.001
Follow-up	Decision regarding scheduling of control and referral to other parts of the healthcare system	84	3.8 (8.1)	390	2.7 (6.3)	0.160
Advice	Decision to give the patient advice (e.g., no more scuba diving, adjustment to soccer training, try some oat, switch from position more often, more exercise, no alcohol, stop smoking)	0	†	150	8.3 (9.9)	†
Total	727	16.8 (17.1)	837	5.4 (9.0)	<0.001	

*Significantly higher OPTION[5] scores compared to diagnostic test, follow-up, and other advice, p-value <0.001. †There were no main decisions classified as "other advice"

Table 3 Random Intercept Multilevel Model for the Degree of Patient Involvement (OPTION)[5] in 1564 Decisions in 727 Medical Encounters of 41 Medical Specialists

Variable		Final model* ($N=1564$) Coefficient (SE)	p-value
Intercept†	19.17 (0.80)	<0.001	
Patient-level predictors			
Type of decision	Main decisions	Reference	
	Other decisions	−7.90 (0.81)	<0.001
Decision category decision	Treatment	Reference	
	Diagnostic	−5.88 (0.92)	<0.001
	Follow-up	−9.43 (0.91)	<0.001
	Other advice	−3.56 (1.30)	<0.001
Type of consultation	New patient	Reference	
	Follow-up	0.38 (0.77)	0.620
Consultation duration	Minutes	0.39 (0.05)	<0.001

*This final model fitted the data best. The model with all patients' and medical specialists' characteristics is presented in supplementary appendix table A. This full model showed similar results to the model presented in Table 3, but with lower overall fit

†The intercept can be interpreted as the average patient involvement of a (hypothetical) subject, scoring 0 for each predictor in the model

DISCUSSION

In this study, we found that the degree of patient involvement varied between consultations, with patients being more involved in main decisions as compared to the other decisions, and in treatment decisions as compared to decisions regarding diagnostics and follow-up. In addition, we observed that more patient involvement occurred in longer consultations. The degree of patient involvement, as assessed by OPTION[5] scores, was independent of the patient and physician characteristics that we studied. To our knowledge, this is the first study comparing the degree of SDM in medical specialist consultations between different categories of medical decisions. Although models of SDM are presented as

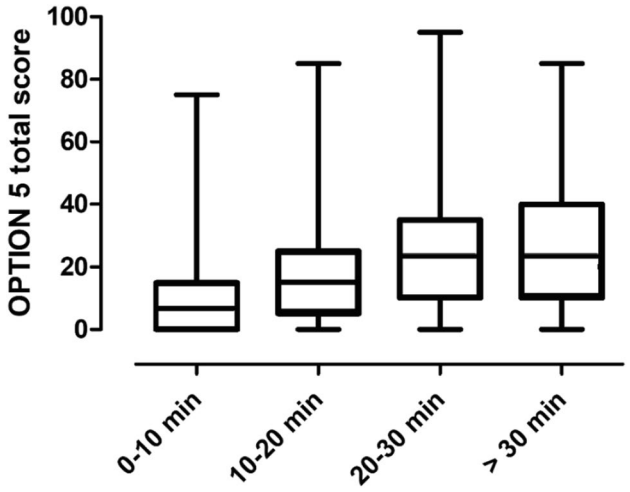

Fig. 1 The degree of patient involvement (OPTION)[5] in the main decisions in 727 consultations with different time durations (one-way ANOVA, $p < 0.001$).

potentially applicable for all kinds of decisions, most have been developed based on analysis of treatment decisions.[7] In most clinical encounters, however, multiple decisions are made related to a range of problems. Several attempts have been made to classify these clinical decisions.[5,6,16] Ofstad and coworkers described ten mutually exclusive categories of medical decisions.[6] Many of these categories take place in the head of the physician, as part of the process of clinical reasoning (e.g., evaluating a test result), and are rarely shared with the patient. Because we wanted to compare the degree of SDM between different decision categories, we limited our analysis to the four categories of decisions that are potentially suitable for SDM with patients: decisions on treatment, diagnostic tests, follow-up, and other advice that physicians give during consultations. We found higher OPTION[5] scores for treatment decisions than for decisions on diagnosis, follow-up, and other advice (Table 2). Although statistically significant, these differences should be interpreted with caution. First, the difference in OPTION[5] scores between treatment and diagnostic decisions was relatively small (5 points on a scale ranging from 0 to 100, Table 2). Second, because of the nested nature of the data, with multiple consultations from each physician, the assumptions for performing univariate parametric statistical comparisons are not met and multilevel analysis was indicated, which takes the nested nature of the data into account. In the multilevel analysis, the decision category remained a significant predictor of OPTION[5] scores. The medical specialists tended to show more SDM behaviors when discussing treatment decisions with their patients than when addressing decisions on diagnosis, follow-up, or other advice (Table 2). This may be a result of the relative unawareness of healthcare professionals that a medical consultation comprises more decisions than only the decision on treatment for the patient's chief complaint.[5,6,16,17] It could also be due to the implicit association between SDM and treatment decisions because SDM has most often been described in the context of treatment decisions.[7,8]

(Lack of) time is often reported as a key barrier to the application of SDM in clinical practice.[18–21] The literature on the actual impact of the introduction of SDM on the duration of consultations shows varying results. In a systematic review of 13 randomized clinical trials evaluating consultation length with and without SDM, nine trials reported no time difference, three found increased consultation length in SDM, and one trial reported shorter consultations when SDM was applied.[21,22] Our study showed higher OPTION[5] scores with increasing consultation length. The cross-sectional nature of our study does not allow identification of which is the cause and which is the effect. The fact that the OPTION[5] scores were also associated with > 5-min longer consultation than scheduled suggests that physicians who are more inclined to apply SDM use the additional time they require to share decisions with their patients. It is also possible that the physician used more consultation time because discussing the decision(s) required more time. Whether the increased consultation length with more application of SDM persists over time with additional consultations and ongoing patient follow-up should be explored in future studies.

Patient and physician characteristics such as age and gender were not related to OPTION[5] scores in our multilevel model (Table 3 and table A in Supplementary appendix). This is in accordance with a systematic review of 33 studies in which demographic patient and physician characteristics were not related to OPTION[5] scores.[14] Our analysis also showed no difference in OPTION[5] scores between consultations with new and follow-up patients, after adjustment for type and category of decision. It can be hypothesized that the type of consultation may influence patient involvement and that in follow-up encounters, SDM-specific behaviors may already have taken place in an earlier consultation. We are unaware of any data actually examining this issue. It is possible that a difference in patient involvement between new and follow-up patients could not be picked up by our model because it accounted for difference in the duration of consultations between new and follow-up patients.

The direct observation of physician SDM behavior in a large sample of clinical decisions is the main strength of this study. Direct observation has distinct advantages over indirect SDM behavior assessment methods such as surveys or self-reports, which are susceptible to several biases, including recall and social desirability bias. In addition, we included patients visiting 41 medical specialists from 18 different disciplines, which supports the generalizability of the results across medical specialties. We acknowledge the following limitations. In assessing indicators of behavior, the scoring method is subject to differences in observation

and interpretation. We tried to limit subjective interobserver differences by training the assessors as recommended by the developers of the OPTION[5] instrument, and achieved excellent interobserver agreement. Second, it is possible that participating in an SDM study and knowing the encounter is videotaped prompt medical specialists to show more SDM behavior than they otherwise would. However, so far, there is no indication that videotaping consultations has effect on behavior [23,24] Third, this study was performed in a single Dutch Hospital, limiting generalizability of results in other hospitals and settings. Further studies are needed to assess the reproducibility of our results in other settings and countries. Finally, compared to other studies, the mean degree of SDM in the consultations that we examined was slightly lower.[14] The relatively low OPTION[5] scores in our sample may have limited the study's power to identify relevant determinants of the OPTION[5] scores.

The results of this study confirm that there are multiple decisions of different categories in consultations between medical specialist and patient.[6] Although the research on SDM has focused on major therapeutic decision, SDM may also be applicable in other decision categories. This study helps to raise the awareness among physicians and patients that the potential use of SDM can be expanded to other decision types than treatment decisions. Although our study showed a positive association between consultation length and the degree of SDM in the consultation, this does not necessarily mean that SDM takes more time. Previous work has suggested that an abbreviated, "everyday" version of SDM allows application of the principles of SDM in everyday small decisions in primary care in a time-efficient manner.[25]

CONCLUSION

The patient involvement in this study was mostly related to treatment decisions and SDM behavior was more often seen in longer consultations. These results confirm that there are different types of decisions in medical specialist consultations and show that the degree of patient involvement in the decision is dependent on decision category. Directionality of the association with consultation duration is unclear. Studies on physicians' SDM behavior should specify the category of decision being studied, and physicians' SDM training should be tailored to promote patient involvement in different categories of decisions. Physicians and policy makers should allow sufficient consultation time to support the application of SDM in clinical practice.

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Author Contribution *E M Driever collected the data, carried out data analysis, and wrote the initial report. A M Stiggelbout participated in study design, commented on data analysis, and edited the report. P L P Brand designed the study, supervised data collection and analysis, and edited the report.*

Two researchers (R Hafrtog and dr R M Brohet) have contributed to our study and have provide a written approval for including their names in the acknowledgement.

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Declarations

Conflict of interest *All authors have completed the ICMJE uniform disclosure form and declare no conflict of interest; the grant from Isala Hospital Innovation and Research Fund covers the salary of the main researcher (EMD) through her PhD trajectory; no financial relationships with any organizations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work.*

References

1. **Elwyn G, Durand MA, Song J, et al.** A three-talk model for shared decision making: multistage consultation process. BMJ. 2017;359:j4891.
2. **Stiggelbout AM, Pieterse AH, De Haes JC**. Shared decision making: Concepts, evidence, and practice. PatientEducCouns. 2015;98(10):1172-9.
3. **Joosten EA, DeFuentes-Merillas L, de Weert GH, Sensky T, van der Staak CP, de Jong CA**. Systematic review of the effects of shared decision-making on patient satisfaction, treatment adherence and health status. Psychother Psychosom. 2008;77(4):219-26.
4. **Rathert C, Wyrwich MD, Boren SA**. Patient-centered care and outcomes: a systematic review of the literature. Med Care Res Rev. 2013;70(4):351-79.
5. **Braddock CH, III, Fihn SD, Levinson W, Jonsen AR, Pearlman RA**. How doctors and patients discuss routine clinical decisions. Informed decision making in the outpatient setting. J Gen Intern Med. 1997;12(6):339–45.
6. **Ofstad EH, Frich JC, Schei E, Frankel RM, Gulbrandsen P.** What is a medical decision? A taxonomy based on physician statements in hospital. BMJ Open. 2016; 6(2): e010098.
7. **Bomhof-Roordink H, Gartner FR, Stiggelbout AM, Pieterse AH**. Key components of shared decision making models: a systematic review. BMJ Open. 2019;9(12):e031763.
8. **Stacey D, Legare F, Lewis K, Barry MJ, et al.** Decision aids for people facing health treatment or screening decisions. Cochrane Database Syst Rev. 2017; 4:CD001431.
9. **Driever EM, Stiggelbout AM, Brand PLP**. Shared decision making: Physicians' preferred role, usual role and their perception of its key components. Patient Educ Couns. 2020;103(1):77-82.
10. **De Leeuw JME**. Introduction to Multilevel Analysis. In: De Leeuw JME, editor. Handbook of multilevel analysis. New York, USA: Springer Science + Business Media 2008.
11. **Elwyn G, Hutchings H, Edwards A, et al.** The OPTION scale: measuring the extent that clinicians involve patients in decision-making tasks. Health Expect. 2005;8(1):34-42.
12. **Stubenrouch FE, Pieterse AH, Falkenberg R, et al.** OPTION(5) versus OPTION(12) instruments to appreciate the extent to which healthcare providers involve patients in decision-making. Patient Educ Couns. 2016;99(6):1062-8.

13. **Elwyn G, Grande SW, Barr P**. Observer OPTION-5 Manual. Measuring shared decision making by assessing recordings or transcripts of encounters from clinical settings. : The Dartmouth Institute for Health Policy and Clinical Practice; 2018.
14. **Couet 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(4):542-61.
15. **Dijkstra IS, Pols J, Remmelts P, et al.** What are we preparing them for? Development of an inventory of tasks for medical, surgical and supportive specialties. MedTeach. 2013;35(4):e1068-e77.
16. **Deber RB**. Physicians in health care management: 8. The patient-physician partnership: decision making, problem solving and the desire to participate. CMAJ. 1994; 151(4):423–7.
17. **Norman G**. Research in clinical reasoning: past history and current trends. Med Educ. 2005;39(4):418-27.
18. **Joseph-Williams N, Elwyn G, Edwards A**. Knowledge is not power for patients: a systematic review and thematic synthesis of patient-reported barriers and facilitators to shared decision making. Patient Educ Couns. 2014;94(3):291-309.
19. **Legare F, Ratte S, Gravel K, Graham ID**. Barriers and facilitators to implementing shared decision-making in clinical practice: update of a systematic review of health professionals' perceptions. Patient Educ Couns. 2008;73(3):526-35.
20. **Pieterse AH, Stiggelbout AM, Montori VM**. Shared Decision Making and the Importance of Time. JAMA. 2019;322(1):25-6.
21. **Sondergaard SR, Madsen PH, Hilberg O, et al.** The impact of shared decision making on time consumption and clinical decisions. A prospective cohort study. Patient Educ Couns. 2021; 104(7): 1560-7.
22. **Dobler CC, Sanchez M, Gionfriddo MR, et al.** Impact of decision aids used during clinical encounters on clinician outcomes and consultation length: a systematic review. BMJ Qual Saf. 2019;28(6):499-510.
23. **Arborelius E, Timpka T.** In what way may videotapes be used to get significant information about the patient-physician relationship? Med Teach. 1990;12(2):197-208.
24. **Pringle M, Stewart-Evans C**. Does awareness of being video recorded affect doctors' consultation behaviour? Br J Gen Pract. 1990;40(340):455-8.
25. **Caverly TJ, Hayward RA**. Dealing with the Lack of Time for Detailed Shared Decision-making in Primary Care: Everyday Shared Decision-making. J Gen Intern Med. 2020;35(10):3045-9.