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Shared decision making for older adults with multiple chronic conditions and their informal caregivers

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Measuring triadic decision making in older patients with multiple chronic conditions: Observer OPTION^{MCC}

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Abstract

Objective: To develop a valid and reliable tool to measure triadic decision making between older adults with multiple chronic conditions (MCC), their informal caregivers and geriatricians.

Methods: Video observational study with cross-sectional assessment of interaction during medical consultations between geriatricians (n=10), patients (n=108) and informal caregivers (68) by three calibrated raters at the geriatric outpatient department of two Dutch hospitals.
The Observer OPTION^{MCC} instrument was developed, based on the 'Dynamic model of SDM in frail older patients' and the 'Observing Patient Involvement in Decision Making - 5 item scale' (Observer OPTION-5).

Results: Factor analysis confirms that it is acceptable to regard the new scale as a single construct. The 7-item single factor solution explained 62.76% of the variability for geriatricians, 61.60% of the variability for patients and 54.32% of the variability for informal caregivers. The inter-rater ICC for the total Observer OPTION^{MCC} score was .96, .96 , and .95 (resp. geriatricians, patients, informal caregivers), with values ranging from .60 to .95 for individual items, showing good levels of agreement.

Conclusion and Practice Implications: We conclude that Observer OPTION^{MCC} is sufficiently valid and reliable to be used for the assessment of triadic SDM in populations of older patients with MCC.

Introduction

Despite proven benefits of shared decision making (SDM) among older adults, such as a better understanding, risk perception and less decisional conflict[1, 2], the implementation of SDM is not yet common practice[3, 4]. Literature about SDM in older adults with multiple chronic conditions (MCC) reveals several facilitators to SDM. Discussing an older person's desired role regarding decision making and clarification of personal values, goals and preferences are important enablers of the SDM process[5-13]. Furthermore, a personalized approach regarding the distribution of information and tailored communication is an essential condition to the SDM process in older adults[6, 14-16]. In addition, informal caregivers (IC) play an important role in the SDM process: as an information gatherer, coach, advisor, negotiator and/or caregiver[17-19]. The term 'triadic decision making' refers to decision making consultations in which three parties are involved: the physician, the adult patient and the adult companion (informal caregiver)[20].

To facilitate the implementation of SDM in older adults with MCC and to comply with the particular demands for older patients, the 'Dynamic model for SDM in frail older patients' was developed[21]. This model states that adequate and informed decisions in older patients with MCC are facilitated when they are based on the goals and preferences as expressed by patients. To this purpose, the 'Dynamic model for SDM in frail older patients' introduces two preliminary steps: 'Preparation' and 'Goal talk', in addition to the generally known three steps of SDM-models, i.e. 'Choice talk'; 'Option talk' and 'Decision talk'[22]. Moreover, one additional last step, 'Evaluation', is added in the 'Dynamic model for SDM in frail older patients'[21]. Existing measurement scales have been constructed to measure the extent to which clinicians involve their patients in SDM, such as the validated observer OPTION-12 and OPTION-5 scales[23-26]. However, the regular models and measurement scales are not adapted to the specific SDM process in older adults as described in the 'Dynamic model for SDM in frail older patients'. Until now, adequate measurement scales to measure SDM in older adults are lacking. Existing SDM measurement scales do not incorporate the initial step of goal clarification, which is the most important element in the 'Dynamic model for SDM in frail older patients'. Moreover, they do not take the role and participation of the patient and informal caregiver into account, though the latter often play a major role in the decision-making process[17, 19]. Informal caregivers support the decision making process through providing information, asking questions and assisting in receiving and understanding information, in particular when older adults suffer from cognitive decline, are too ill or experience too much discomfort to participate in decision making[6, 7, 10, 19, 27, 28]. The aim of this study was to develop a valid and reliable tool to measure triadic decision making in older populations with MCC based on the OPTION-5, including the participation of older adults and their informal caregivers: the Observer OPTION^{MCC}.

Methods

Design

This video observational study was carried out at the geriatric outpatient

departments of two Dutch hospitals: 1) the department of Geriatric Medicine of the Academic Medical Center (AMC) and 2) the outpatient clinic of Geriatric Medicine of the Medical Center Slotervaart, a non-academic teaching hospital (MC SLV). The study protocol was approved by the institutional Review Board of the AMC (W16_107#16.125), local approval was provided by the MC SLV (P1641).

Participants

The participants of this study were 108 (55 in AMC and 53 in MC SLV) older patients and their 68 informal caregivers who visited the geriatric outpatient clinic of one of the participating hospitals. A geriatric patient is not merely defined by age, but more by decreased functional reserves leading to frailty and the prevalence of more than one chronic condition[29]. Inclusion criteria for this study were: 1) having an appointment at the geriatric outpatient clinic and 2) sufficient mastery of Dutch language. Exclusion criteria were: 1) being in terminal phase of life and 2) having a moderate to severe state of dementia (MMSE < 15[30]) according to the medical file. Eligible geriatricians had to meet the following criteria: 1) specialized in geriatrics, 2) working at the outpatient clinic of the geriatric department. Temporary staff was not eligible.

Data collection

One week before the clinical consultation – in this study defined as 'the consultation(s) during which the patients' problems, diagnostic procedures, or treatment options are discussed' – eligible patients were called and informed about the study. Interested patients received an information letter with informed consent form by mail. One day before the consultation, the patient was called again to remind the patient of the study and to give the opportunity to ask questions. Participating patients completed a pre-consultation questionnaire at home or just before consultation. After written informed consent from patient and informal caregiver was obtained, the consultation was video recorded. A research assistant was present to operate the recorder but left the room during the consultation itself. The geriatricians gave written informed consent, were informed about participation of their patients and answered a post-consultation survey.

Development of the Observer OPTION^{MCC}

The observer OPTION scale has been developed to assess the extent to which clinicians involve patients in decision making processes. The scale has been validated in different studies and is widely used by researchers to measure SDM[4, 23-25, 31]. The original version consisted of 12 items (OPTION-12). Later a modified version was published with 5 items (OPTION-5[26]. The OPTION comprises of a list of observable competences constructed to measure the skills of clinicians in team-, option- and decision talk[32].

The OPTION-5 measures most, but not all, competences described in the 'Dynamic model for SDM in frail older patients'. To construct the revised scale all competences described in the 'Dynamic model for SDM in frail older patients' were compared to the competences measured in the OPTION-5, and an adapted version, the Observer OPTION^{MCC} was composed (Supplementary Table S1). The OPTION-5 measures the competences regarding team-, option- and decision-

talk. Since the 'Dynamic model for SDM in frail older patients' introduces three additional steps: 'Preparation', 'Goal talk' and 'Evaluation', we had to develop extra items for the Observer OPTION^{MCC} scale. The first step of the 'Dynamic model for SDM in frail older patients', 'Preparation', is not incorporated in the Observer OPTION^{MCC} scale, since this step usually takes place before the clinical consultation and is therefore not observable.

The Observer OPTION^{MCC} follows the OPTION-5 scoring guidance. The score '0' is allocated to the situation where the competency described is not observed, other scores (1 to 4) are allocated to increasing levels of achievement for the described competence. Furthermore, an additional set of observer items was constructed to measure the participation of patients and their informal caregivers during the SDM process. We developed for all Observer OPTION^{MCC} items a score to rate the level of participation of patients and informal caregivers on three levels: (0) no participation, (1) responsive participation and (2) active participation. The revised scale scoring guidance is depicted in Table 1.

Table 1. The OPTION^{MCC} scale scoring guidance

Geriatricians	
Scale score	**Definition**
0	The behaviour* is not observed
1	A minimal attempt is made to exhibit the behaviour
2	The geriatrician asks the patient about their preferred way of receiving information to assist decision
3	The behaviour is exhibited to a good standard
4	The behaviour is observed and executed to a high standard
	*Observer items OPTION^{MCC} as described in Table I
Patients	
Scale score	**Definition**
0	No or minimal participation, e.g. only yes or no.
1	Responsive participation, answers on questions but does not asks or actively contributes in the conversation
2	Active participation, answers questions and asks questions, brings in own ideas and shares perceptions
Informal Caregivers	
Scale score	**Definition**
0	No or minimal participation, e.g. only yes or no.
1	Responsive participation, answers on questions but does not asks or contributes in the conversation
2	Active participation, answers questions and asks questions, brings in own ideas and shares perceptions

Other Measurements

Demographics

Patients' and informal caregivers' baseline characteristics included: age, gender, education (low, middle, high), and living situation.

Clinical characteristics

The level of patients' frailty was measured with the Groningen Frailty Indicator (GFI)[33], consisting of 15 self-reported items, with a total score ranging from 0 to 15[34]. A score of four or higher is considered as the cut-off point for frailty[34]. Higher scores on GFI indicated higher frailty levels. Polypharmacy was defined as 'the use of >4 different medications[33]. The Charlson Comorbidity Index (CCI) was used as an indication for the number and severity of MCC[35]. The scores on the CCI range from 0 to 31, with a higher score indicating a greater number of comorbidities and/or more severe comorbidities[36].

Characteristics of the consultations

Geriatricians reported for each consultation the most important problem presented by the patient, whether a decision was taken and the type of the decision. They indicated whether according to the geriatrician there were more options available and if so, if all options were equal; meaning subject to preference-sensitive decisions[37].

Analysis

Inter-rater reliability

The video assessment was done by three independent observers using the Observer OPTION^{MCC}. Training consisted of explaining the use of the scale, rating the same ten consultations, and discussing discrepancies. The original OPTION-5 guidelines were followed to minimize observer bias and reactivity[38.] The observers watched the video once before scoring. After ten training consultations, the observers rated another sample of ten consultations in order to establish ICC. The remaining consultations (n = 88) were rated independently, whilst every tenth consultation was discussed by all observers after rating to ensure a stable inter-rater-reliability. The data were analysed by studying the responses to each item, the scale reliability was assessed with inter-item and item-total correlations, summarized by Cronbach's α. Inter-rater agreement was assessed using intraclass correlation coefficient (ICC). ICC scores above .40, .60 and .80 were interpreted as fair, moderate and substantial agreement respectively.

Factor analysis

The triadic Observer OPTION^{MCC} consists of a part for geriatricians, patients and informal caregivers. Exploratory factor analysis (varimax rotation taking eigenvalues of 1.1) was used to determine factor loadings.

Item response

The data were analysed by studying the responses to each item, both for geriatricians, patients and informal caregivers. The item response for geriatricians was presented both in percentages to show the distribution between the scoring

categories (0=min, 4=max) as well as in a mean score per item and in a total mean score. Conform OPTION-5 guidelines the scores were also transformed to a 0-100 score (0=min, 100=max). The item response for patients and informal caregivers was measured on a three-point scale (0=min, 2=max) and presented in percentages and a mean score per item and a total mean score.

Results

Response

In the study period 515 older adults visited one of the two hospitals for a geriatric consultation with a geriatrician of which 108 participated in the study. Figure 1 presents the flow chart of the study. We found no significant differences on age and gender between the participating patients (n=108) and the non-responding patients (n=407) (age p=.142, gender p=.066).

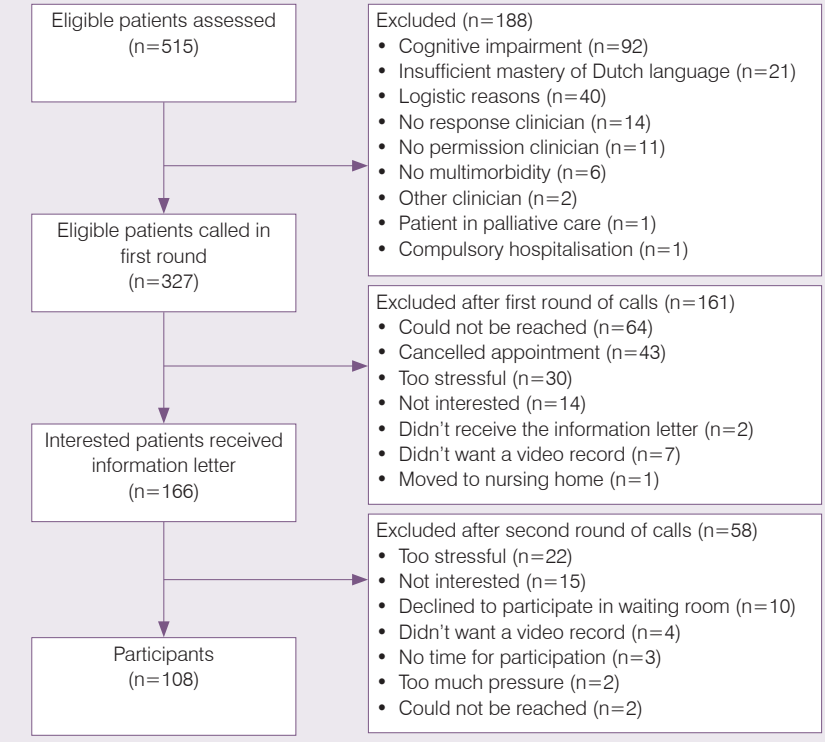

Figure 1. Flowchart of the inclusion

Table 2. Characteristics of participating patients (n = 108) and (most important) informal caregivers (n = 68)

Participant Characteristics	**Patients**	**Informal caregivers**
Characteristics	Total	Total
	N[a] = 108 (100%) AMC 55 MC SLV 53	N[a] = 68 (100%) AMC 32 MC SLV 35
Demographics		
Age, in years (mean, SD)	78.0(8.2)	66.6 (13.1)
Female sex (n, %)	55 (52.4)	44 (64.7%)
Level of education		
Low (n, %)	19 (18.8)	5 (7.3%)
Middle (n, %)	58 (57.5)	41 (60.3%)
High (n, %)	23 (22.8)	22 (32.3%)
Living situation		
Independent, alone (n, %)	41 (40.6)	8 (11.8%)
Independent, with others (n,%)	58 (57.5)	60 (88.2%)
Home for the elderly (n, %)	2 (2.0)	0 (0%)
Relation to the patient	n.a.	
Husband/wife		38 (55.9%)
Daughter/Son		22 (32.4%)
Other relative		3 (4.4%)
Friend, neighbour, etc		5 (7.4%)
Clinical characteristics		
Polypharmacy [b] (≥4) (n, %)	65 (69.1)	n.a.
Frailty [c] mean, SD	4.4 (2.6)	n.a.
Comorbidity [d]	2.09 (1.8)	n.a.
Main problems (n, %)		
cognition/dementia	52(48.0)	
falls/mobility	10 (9.0)	
osteoporosis	9(8.0)	
anemia	3(3.0)	
thyroid problems	3(3.0)	
orthostasis	3(3.0)	
dizziness	3(3.0)	
abdominal complaints	3(3.0)	
depression	3(3.0)	
polypharmacy	2(2.0)	
hypertension	2(2.0)	
dyspnea	2(2.0)	
backpain	2(2.0)	
other	11(10.0)	

[a]: *n* varies slightly due to missing data
[b]: Polypharmacy: use of ≥4 different medications
[c]: Frailty: GFI (score 0 - 15; > 4 indicates frailty)
[d]: Comorbidity: CCI . A higher CCI-score (CCI-score > 5) is associated with higher morbidity and mortality
sd=standard deviation

Baseline characteristics

Table 2 summarizes the socio-demographic and clinical characteristics for patients and informal caregivers. About half of the participating patients was female (52.4 %) and lived with a partner (57.5%). The mean age was 78.0 years (SD = 8.2) and 19 (18.8%) of the respondents had a low education level. Polypharmacy was present in 65 patients (69.1%). The mean frailty score was 4.4 (SD = 2.6), the mean CCI score was 2.09 (SD 1.8). The most frequent problems presented were cognitive impairment, falls and osteoporosis. From 108 (100%) participating patients, 68 (63.0%) had an informal caregiver present at the consultation. Most participating informal caregivers were female (64.7 %) and the mean age was 66.6 years (SD = 13.1). The majority of informal caregivers were middle or high educated (60%). The relation to the patient was mainly spouse (n=38, 56%) or child (n=22, 32%).

Consultation characteristics

The characteristics of the consultations are depicted in Table 3. According to the geriatricians, in 94 (87.9%) of the consultations a decision was made. In 88% of the decisions, more options were available. Of these, 43% were considered equal, meaning subject to a preference sensitive decision[37].

Table 3. Characteristics of consultations and decisions

	N[a] = 108 (100%)
Duration (in min) mean (SD)	40.27 (26.7)
Consultations in which a decision was made (according to geriatrician)	94 (87.9%)
Most frequently discussed decisions (N= 128):	
additional diagnostics	31 (24.2%)
medication	28 (21.8%)
follow-up	27 (21.1%)
referral to primary care (casemanager, General Practitioner, physiotherapist, psychologist)	19 (14.8%)
lifestyle (diet, exercise, alcohol)	12 (9.4%)
consultation other hospital specialist	8 (6.2%)
other	3 (2.3%)
More options were available (according to geriatrician)	85 (87.6%)
If so, options were considered equal (according to geriatrician)	36 (42.9%)
Comorbidities were discussed (according to observer)	89 (87.3%)
If so, comorbidities were considered in relation to decision (according to observer)	62 (72.9%)

[a]: n varies slightly due to missing data

Inter-rater reliability

The inter-rater ICC , summarized by Cronbach's α, for the total Observer OPTION^{MCC} score was .96, .96, .95 (resp. geriatricians, patients, informal caregivers), with values ranging from .60 to .95 for individual items (see Supplementary Table S2), which showed good levels of agreement.

Table 4. OPTION^{MCC} item response geriatricians (n= 10), patients (n=108) and informal caregivers (n= 68)

	OPTION^{MCC} item response geriatricians									
	Item score (0 - 4) (%)						Mean OPTION^{MCC} score (0-4)		Mean transformed OPTION^{MCC} score (0 = min, 100 = max)	
OPTION^{MCC} item	0	1	2	3	4	Total	mean	sd	mean	Sd
1 Goal talk: - Identify discussion partner - Identify patient values and goals of care	12.6	37.9	30.1	13.6	5.8	100%	1.62	1.06	40.5	26.5
2 Option Talk: - Explaining there are more options	8.7	25.2	45.6	17.5	2.9	100%	1.81	.93	45.1	23.2
3 Team Talk: - Support deliberation / forming a partnership	39.8	26.2	17.5	10.7	5.8	100%	1.17	1.23	29.1	30.7
4 Option Talk: - Information about options	11.7	35.9	33.0	18.4	1.0	100%	1.61	.95	40.3	23.8
5 Decision Talk: - Eliciting preferences	17.5	27.2	28.2	13.6	13.6	100%	1.79	1.27	44.7	31.8
6 Decision Talk: - Integrating preferences	20.4	28.2	25.2	20.4	5.8	100%	1.63	1.19	40.8	29.7
7 Evaluation talk - Evaluating the SDM process - Preparing treatment plan	18.4	44.7	19.4	16.5	1.0	100%	1.37	1.00	34.2	24.9
Total OPTION^{MCC}							1.57	.86	39.3	21.4 (range 3.6-82.1)

Table 4. Continued

OPTION^{MCC} item response patients and informal caregivers		Item score (0 - 2) (%)			Mean OPTION^{MCC} score (0-2)	
		0	1	2	mean	Sd
	Patients	13.6	53.4	33.0	1.19	.7
	Informal caregivers	20.5	51.3	28.2	1.08	.7
	Patients	14.6	59.2	26.2	1.12	.6
	Informal caregivers	15.4	53.8	30.8	1.15	.7
3 Team Talk: - Support deliberation / forming a partnership	Patients	36.9	40.8	22.3	.85	.8
	Informal caregivers	33.3	42.3	24.4	.91	.8
4 Option Talk: - Information about options	Patients	20.4	53.4	26.2	1.06	.68
	Informal caregivers	19.2	55.1	25.6	1.06	.67
5 Decision Talk: - Eliciting preferences	Patients	21.4	42.7	35.9	1.15	.75
	Informal caregivers	16.7	51.3	32.1	1.15	.67
6 Decision Talk: - Integrating preferences	Patients	21.4	48.5	30.1	1.09	.72
	Informal caregivers	20.8	53.2	26.0	1.05	.69
7 Evaluation talk: - Evaluating the SDM proces - Preparing treatment plan	Patients	27.2	53.4	19.4	.92	.68
	Informal caregivers	28.2	59.0	12.8	.85	.63
Total OPTION^{MCC}	Patients				1.05	.54
	Informal caregivers				1.04	.50

Factor analysis

The scree plot showed the presence of one factor, the distribution of questions to this factor revealed a Cronbach's α of .893 (geriatricians), Cronbach's α of .890 (patients) and Cronbach's α of .851 (informal caregivers) respectively. The 7-item single factor solution explained 62.76% of the variability for geriatricians, 61.60% of the variability for patients and 54.32% of the variability for informal caregivers.

The Observer OPTION^{MCC} item response

The Observer OPTION^{MCC} item response is depicted in Table 4. The overall mean Observer OPTION^{MCC} score (0 = min, 4 = max) for the geriatricians was 1.57 (SD .86), the mean transformed Observer OPTION^{MCC} score (0=min, 100 = max)[24] was 39.3 (SD 21.4, range 3.6 - 82.1). The overall mean score (0=min, 2=max) for the patients was 1.05 (SD .54). The overall mean score (0=min, 2=max) for the informal caregivers was 1.04 (SD .50). There were no significant differences between consultations with and without informal caregivers on the OPTION^{MCC} score for geriatricians (p=.194 resp. patients (p=.372).

Discussion and Conclusion

Principal findings

Factor analysis confirms that it is acceptable to regard the scale as a single construct. We conclude that the Observer OPTION^{MCC} is sufficiently valid and reliable to be used in populations of older adults with MCC. Since the scale showed to be one dimensional through the factor analysis, the internal consistency could be assessed by Cronbach's alpha. The Cronbach's alpha was in all cases > .8 indicating a good internal consistency of the scale. The reliability of the Observer OPTION^{MCC} was established by calculating the ICC, which turned out to be very high (>.95), although the ICC on some individual items was lower, however still moderate (range .60 - .95). The face and content validity of the Observer OPTION^{MCC} was established by building on the proven valid and reliable OPTION-scale, and the concept of the 'Dynamic model for SDM in frail older patients'. This study shows that with the Observer OPTION^{MCC} the constructs of the 'Dynamic model for SDM in frail older patients' are measured and can be used in further research on this model in other empirical studies.

The overall observed OPTION^{MCC} score for geriatricians (39.3, range 0 - 100) is high compared to the mean observed OPTION scores found in other studies: the mean OPTION score of 33 studies in the review of Couet et al. (2015) was 23 (range 0-100)[4]. However, the average duration of the consultations in this study was much longer (40.3 min) compared to other studies; Couet et al. (2015) reported a median length of consultation from 13 minutes. Several other studies confirm that there is more patient participation in longer visits[39]. Also, most studies in the review of Couet at al. reported on other disciplines, mostly general practitioners, and involved a younger population.

We observed a responsive participation of both patients and informal caregivers in SDM (resp. 1.05 and 1.04, range 0 - 2). To our knowledge, this is the first study that systematically integrates *observed* participation of older patients and informal caregivers during clinical consultations with an OPTION scale.

Phillipe et al. (2016) state in a systematic review that there are few reliable and valid observer-completed tool for patient participation related to SDM[40]; all still in pilot stage and/or measuring patients' perspective but not actual participation in SDM, which makes it not possible to compare our findings to other measures.

Although we found no quantitative data on the observed participation of informal caregivers, the literature subcribes the importance of involving informal caregivers in SDM. Many studies describe that informal caregivers often play an important role in SDM, either because they represent the patient by providing information or because they have their own interests in the decision due to extensive frailty and increasing dependence of their relatives[10, 14, 17, 18, 28]. Other studies report that the presence of an informal caregiver at the medical consultation is more common among older adults with MCC compared to a general population, and their role becomes more substantial when the older adult is less able to participate in the consultation[20, 41, 42]. For example, when patients become more cognitively impaired, the caregiver plays a more active role in the decision-making process[19]. Since (mild) cognitive impairment was reported as the main diagnosis in the study population, it seems very relevant that we observed the participation of informal caregivers. We found very similar scores for patient and informal caregiver participation, which is not in line with findings in the literature describing that when patients are accompanied by a third person, their share in the conversation decreases[43]. An explanation for this could be that geriatricians are trained in triadic conversations; e.g. it is very common that an informal caregiver is present at the consultation.

The observer OPTION^{MCC} includes two new items compared to the observer OPTION-5: Goal talk (item 1) and Evaluation talk (item 7). The scores indicated that the patients participated most in the Goal talk, although geriatricians and informal caregivers scored only moderate participation on Goal talk. Evaluation talk scored of all items for all three parties the lowest. These results indicate that in training (geriatricians) and empowerment (patients and informal caregivers) more attention is needed towards forming a partnership and reflecting on the decision making process.

Strengths and weaknesses

The major strength in this study was the chosen methodology of observation based on videotaping real life consultations; which gave us an unique insight in the daily communication processes between geriatricians, older adults and their informal caregivers. An advantage of videotapes compared to audiotapes is that the researchers were able to distinguish between the contributions of older adults and their informal caregivers. Furthermore, the researchers were not present during the consultation, thus minimizing the influence on the behaviour of the participants. However, we cannot discount there could have been some influence of the presence of a video camera on geriatricians, patients and informal caregivers. The continuous calibrating between the raters was beneficial to the inter-rater-reliability of this study, and suggests that in order to get such a high ICC, continuous calibrating is necessary. Finally, in contrast to existing Observer OPTION instruments, the OPTION^{MCC} measures the discussion of patients' personal goals as a first step in the SDM process, thus guiding the options that are relevant to those goals. In other versions of the OPTION 'goal talking'

deals with issues from the clinicians' perspective, but doesn't explore patients' or informal caregivers' reasons to consult the clinician and their personal goals. According to the 'Dynamic model for SDM in frail older patients' those personal goals should be the starting point in decision making, which we accommodated by adding 'goal talk' as an explicit step in the beginning of the consultation and assessing the contributions of all three parties.

This study has also some limitations. The participants were informed about the purpose to study communication during consultation, although SDM was not mentioned, which might have influenced their behaviour. The subscales for patients and informal caregivers are ranked on a three-point scale (no/minimal, responsive and active participation)[44]. Although this was based on the literature and reflected much of the levels of participation we observed in daily practice, this impedes a comparison with the subscale for the geriatricians, which is a five-point scale. Finally, only 63% of the patients were accompanied by an informal caregiver, 37% of the older adults came alone to the consultation. A sub-group analysis on differences between consultations with and without an informal caregiver revealed no significant differences on the Observer OPTION^{MCC} items of geriatricians and patients nor on the total mean score. Thus, in cases where the patients visits the geriatrician alone, the Observer OPTION^{MCC} can be used as a dyadic instrument, taking the perspectives of the geriatricians and patients into account.

Conclusion

We conclude that Observer OPTION^{MCC} is sufficiently valid and reliable to be used for the assessment of triadic SDM in populations of older patients with MCC. Since decisions about diagnosis, treatment and care should be made in close cooperation with older adults and their informal caregivers, the Observer OPTION^{MCC} adds value to former Observer OPTION's by also measuring the patients' and informal caregivers' participation in SDM.

Practice Implications

The Observer OPTION^{MCC} can be used to measure triadic SDM in daily practice. Furthermore, it provides insight in how the different steps in SDM can be operationalised based on a dynamic model. Results from the current study indicate that improved SDM skills are needed for professionals, focusing on discussing personal goals and preferences, forming partnerships and reflecting on the decision making process. Since the instrument shows how and in which parts of the SDM process the participation of patient and informal caregivers manifests, the Observer OPTION^{MCC} can be used to tailor trainings interventions to professionals and to develop empowerment interventions for patients and informal caregivers.

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Supplementary Table S1 Original and adapted OPTION, based on SDM OLD model

Competences 'Dynamic model for SDM in frail older patients'	Observer Items OPTION[5]	Proposed Observer Items OPTION[MCC]
1 Preparation History: did the patient previously discuss or document anything with regard to treatment in general or on specific issues e.g. resuscitation, advance care planning? (As a starting point for the conversation or as indicator in situations where the patient is incompetent) Problem analysis: functional assessment of all current problems.(Extensiveness of the analysis depends on the situation. Other caregivers can contribute. The comprehensive geriatric assessment (CGA) is a useful tool. Prioritise problems in consultation with the patient)		(Preparation is not included in this observational instrument, since this usually takes place before the actual conversation between geriatricians and patients)
2 Goal talk Explain to the patient that a new (or exacerbation of a current) problem/disease has occurred and state that choices need to be made. Explain that every patient is unique and has his own preferences and priorities. Engage the patient in a dialogue to clarify several important general topics that require clarification before choices can be made regarding the current problem. Identify discussion partner: Has this patient sufficient decision-making capacity (cognitive, emotional)? If not, who is (by law) assigned to take the decisions? Does the patient want to take decisions? If not, who does the patient designate		**1 Goal talk** The clinician: -explains to the patient that a new (or exacerbation of a current) problem/disease has occurred and state that choices need to be made. Explains that every patient is unique and has his own preferences and priorities. -engages the patient in a dialogue to clarify several important general topics that require clarification before choices can be made regarding the current problem. -identifies discussion partner: Has this patient sufficient decision-making capacity (cognitive, emotional)? If not, who is (by law) assigned to take the decisions? Does the patient want to take

(proxy decision maker)?
Identify patient values and goals of care (what is the role of his/her important values regarding decisions):What are important values in the patients' life? (Roles of outlook on life, perceptions, spirituality/ religion, culture?)
Elicits goals of care. (Prolongation of life, functional autonomy, visit grandchildren, comfort, etc.)

3 Choice talk
Summarise the preceding steps (the actual problem and the identified values and goals of care) and verify if your recapitulation is correct. Explain that there are several treatment possibilities and offer choice. Invite the patient (or proxy decision maker) to formulate their treatment aims and support the patient: Convey that whilst the health professional is the medical expert, only the patient can be the expert on treatment aims, priorities and preferences. (Cure, quality of life, no treatment, no pain, comfort, etc.) Check if the patient (or proxy decision maker) has understood everything and summarise again if necessary. Continue to engage the patient in a dialogue

1 Option talk: alternate Options
For the health issue being discussed, the clinician draws attention to or confirms that alternate treatment or management options exist or that the need for a decision exists. If the patient rather than the clinician draws attention to the availability of options, the clinician responds by agreeing that the options need

2 Team Talk: support deliberation / forming a partnership
The clinician reassures the patient or re-affirms that the clinician will support the patient to become informed or deliberate about the options. If the patient states that they have sought or obtained

decisions? If not, who does the patient designate (proxy decision maker)?
-identifies patient values and goals of care (what is the role of his/her important values regarding decisions):What are important values in the patients' life? (Roles of outlook on life, perceptions, spirituality/ religion, culture?)
-elicits goals of care. (Prolongation of life, functional autonomy, visit grandchildren, comfort, etc.)

Participation of patient:
Participation of informal caregiver

2 Option talk: alternate Options
For the health issue being discussed, the clinician draws attention to or confirms that alternate treatment or management options exist or that the need for a decision exists. If the patient rather than the clinician draws attention to the availability of options, the clinician responds by agreeing that the options need.

Participation of patient
Participation of informal caregiver

3 Team Talk: support deliberation / forming a partnership
The clinician reassures the patient or re-affirms that the clinician will support the patient to become informed or deliberate about the options. If the patient states that they have sought or obtained

	information prior to the encounter, the clinician supports such a deliberation process.	information prior to the encounter, the clinician supports such a deliberation process. Participation of patient: not / responsive / active Participation of informal caregiver: not / responsive / active
4 Option talk List personalized treatment options (according to the identified values, goals of care and treatment aims). Discuss risks, benefits and side effects of every treatment option. Check which risks and side effects the patient is willing to take (opportunity/ cost). Observe how the patient reacts and continue to engage the patient (and/or representative). If possible use decision aids. (visual support options can be helpful)	**3 Option Talk: information about options** The clinician gives information or checks understanding about the options that are considered reasonable (this can include taking no action), to support the patient in comparing alternatives. If the patient requests clarification, the clinician supports the process.	**4 Option Talk: information about options** The clinician gives information or checks understanding about the options that are considered reasonable (this can include taking no action), to support the patient in comparing alternatives. If the patient requests clarification, the clinician supports the process. Participation of patient: not / responsive / active Participation of informal caregiver: not / responsive / active
5 Decision talk Inquire if the patient (or proxy decision maker) is ready to make a decision. If not, go back to the preceding steps. Focus on engaging a dialogue. Focus on the preferences of the patient and make a decision with the patient (and/or proxy decision maker). If the patient wants the doctor to decide: discuss this explicitly and connect to the identified patient values, goals of care and treatment aims.	**4 Decision Talk: eliciting 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. **5 Decision Talk: integrating preferences** The clinician makes an effort to integrate the patient's elicited preferences as decisions are made. If the patient indicates how best to integrate their preferences as decisions are made, the clinician makes an effort to do so.	**5 Decision Talk: eliciting 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. Participation of patient: not / responsive / active Participation of informal caregiver: not / responsive / active **6 Decision Talk: integrating preferences** The clinician makes an effort to integrate the patient's elicited preferences as decisions are made. If the patient indicates how best to integrate their preferences as decisions are made, the

6 Evaluation talk
Discuss the decision-making process. Is everybody satisfied with the decision?
If not, enquire about the dissatisfaction and go back to a preceding step.
If yes: prepare a treatment plan based on the decision.

clinician makes an effort to do so.

Participation of patient: not / responsive / active
Participation of informal caregiver: not / responsive / active

7 Evaluation talk
The clinician discusses the decision-making process. Is everybody satisfied with the decision?
If not, enquires about the dissatisfaction and go back to a preceding step.
If yes: prepares a treatment plan based on the decision.

Participation of patient: not / responsive / active
Participation of informal caregiver: not / responsive / active

Supplementary Table S2 Intraclass Correlation Coefficient scores

OPTION^{MCC} item	Clinician	Patient	Informal caregiver
1	.60	.74	.72
2	.90	.81	.52
3	.93	.86	.77
4	.95	.86	.73
5	.93	.76	.75
6	.90	.77	.76
7	.79	.60	.94
total	.96	.96	.95

Supplementary File S3 Observer Option^{mcc} Score Sheet

This score sheet is based on:

Measuring triadic decision making in older patients with multiple chronic conditions: Observer OPTION^{MCC}.

Pel-Littel RE, Buurman BM, van de Pol MH, Yilmaz NG, Tulner LR, Minkman MM, Scholte Op Reimer WJM, Elwyn G, van Weert JCM. Patient Educ Couns. 2019 Nov;102(11):1969-1976

Scale scoring guidance

Amsterdam UMC Vilans ASCoR Amsterdam School of Communication Research

Clinicians

0 The behavior* is not observed
1 A minimal attempt is made to exhibit the behavior
2 The behavior is observed and a minimum skill achieved
3 The behavior is exhibited to a good standard
4 The behavior is executed to a very high standard

Patiënts

0 No or minimal participation, e.g. only yes or no
1 Responsive participation, answers on questions but does not ask or actively contribute in the conversation
2 Active participation, answers questions and asks questions, brings in own ideas and shares perceptions

Informal Caregivers

0 No or minimal participation, e.g. only yes or no
1 Responsive participation, answers on questions but does not ask or contribute in the conversation
2 Active participation, answers questions and asks questions, brings in own ideas and shares perceptions

Scoresheet

1 Goal talk

Clinician:					Patient			Informal caregiver		
0	1	2	3	4	0	1	2	0	1	2
○	○	○	○	○	○	○	○	○	○	○

Clinician:

- **The clinician explains to the patient that** a new (or exacerbation of a current) problem/disease has occurred and states **that choices need to be made**. Explains that every patient is unique and has his own preferences and priorities.
- **The clinician engages the patient in a dialogue to clarify several important general topics** that require clarification before choices can be made regarding the current problem:
- **The clinician identifies discussion partner:** Does this patient has sufficient decision-making capacity (cognitive, emotional) ? If not, who is (by law) assigned to make the decisions? Does the patient want to make decisions? If not, who does the patient designate? (proxy decision maker)
- **The clinician identifies patient values** (what is the role of his/her important values regarding decisions): What are important values in the patients' life? (Roles of outlook on life, perceptions, spirituality/religion, culture?)
- **The clinician elicits goals of care** (Prolongation of life, functional autonomy, visit grandchildren, comfort, etc.)

2 Option talk: alternate options

Clinician:					Patient			Informal caregiver		
0	1	2	3	4	0	1	2	0	1	2
○	○	○	○	○	○	○	○	○	○	○

Clinician:

- For the health issue being discussed, **the clinician draws attention to or confirms that alternate treatment or management options exist or that the need for a decision exists.** If the patient rather than the clinician draws attention to the availability of options, the clinician responds by agreeing that the options need deliberation.

3 Team talk: support deliberation/forming a partnership

Clinician:	Patient	Informal caregiver
0 1 2 3 4	0 1 2	0 1 2

Clinician:

- The clinician reassures the patient or re-affirms that **the clinician will support the patient to become informed or deliberate** about the options. If the patient states that they have sought or obtained information prior to the encounter, the clinician supports such a deliberation process.

4 Option talk: information about options

Clinician:	Patient	Informal caregiver
0 1 2 3 4	0 1 2	0 1 2

Clinician:

- **The clinician gives information or checks understanding about the options** that are considered reasonable (this can include taking no action), to support the patient in comparing alternatives. If the patient requests clarification, the clinician supports the process.

5 Decision talk: eliciting preferences

Clinician:	Patient	Informal caregiver
0 1 2 3 4	0 1 2	0 1 2

Clinician:

- **The clinician gives information or checks understanding about the options** that are considered reasonable (this can include taking no action), to support the patient in comparing alternatives. If the patient requests clarification, the clinician supports the process.

6 Decision Talk: integrating preferences

Clinician:	Patient	Informal caregiver
0 1 2 3 4	0 1 2	0 1 2

Clinician:

- **The clinician makes an effort to integrate the patient's elicited preferences** as decisions are made. If the patient indicates how best to integrate their preferences as decisions are made, the clinician makes an effort to do so.

7 Evaluation talk

Clinician:	Patient	Informal caregiver
0 1 2 3 4	0 1 2	0 1 2

Clinician:

- **The clinician discusses the decision-making process.** Is everybody satisfied with the decision? If not, enquires about the dissatisfaction and goes back to a preceding step. If yes: prepares a treatment plan based on the decision.

Calculation of score

- **Clinician score:** Sum of all items, divide by 7 (range 0-4).
  For the transformed OPTION score (range 0-100): multiply by 25
- **Patient and informal caregivers score:** Sum of all items, divide by 7 (range 0-2)

Additional information

For rater manuals see:

Observer OPTION 5 Manual 2018

- OPTION Rater Manual
- Measuring shared decision making by assessing recordings or transcripts of encounters from clinical settings
- Glyn Elwyn, Stuart W Grande, Paul Barr
- The Dartmouth Institute for Health Policy and Clinical Practice
- http://www.glynelwyn.com/collaborate.html

Observer OPTION 12 Manual 2005

- OPTION Rater Manual 2005
- Observing patient involvement Evaluating the extent that clinicians involve patients in decisions
- Glyn Elwyn, Adrian Edwards, Michel Wensing and Richard Grol
- http://www.glynelwyn.com/collaborate.html