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Associations between physicians' SDM behaviour and participation of older patients and family members in triadic decision-making: An observational study

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ABSTRACT

Background: Medical consultations with older patients often include triadic conversations and decision-making processes involving physicians, patients, and family members. The presence of family members may change the communication dynamics and therefore increase the complexity of the consultation and decision-making process.

Objective: This study explored associations between physicians' shared decision-making (SDM) behaviour and patients' and family members' participation in the decision-making process.

Methods: Using an observational design, we analysed 95 recorded consultations between medical specialists, patients aged ≥ 65 years, and accompanying family members at a Dutch hospital. The OPTION^{MCC} was used to assess the physicians' SDM behaviour and patients' and family members' levels of involvement in SDM.

Results: We found a strong positive correlation between physicians' behaviour and patients' and family members' participation in SDM (0.68 and 0.64, respectively, $p < .01$). Family members were more involved in SDM for patients aged 80 and older.

Conclusion: While not asserting causation, our study suggests physicians potentially play a facilitating role in shaping the SDM process together with proactive contributions from patients and family members.

Innovation: The results offer new insights into triadic SDM and provide suggestions for refining the OPTION^{MCC}. Further research is recommended into participants' mutual directional influences in triadic SDM.

1. Introduction

As with numerous Western countries, the Netherlands is experiencing an increase in its older population, with projections suggesting particularly accelerated growth in the number of individuals aged 80 and over [1,2]. This demographic shift is contributing to a growing group of older patients with various health issues and increasing frailty. Older patients often depend significantly on family members for both emotional and practical care and support, a reliance that intensifies with advancing age and frailty [3,4].

This increasing reliance on family members is also evident in outpatient clinics, where most older patients have one or more family members, typically spouses or adult children, accompanying them to medical consultations [4]. As a result, many consultations include triadic conversation and decision-making processes that involve not only the physician and patient but also the accompanying family members [4,5].

Treatment decisions for older patients can be challenging because of the complex interplay of factors such as poor health conditions, diminished functional capacity, cognitive impairment, communication

Abbreviations: SDM, Shared decision-making; OPTION, Observer Patient Involvement Scale; MCC, Multiple chronic conditions.

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limitations, susceptibility to adverse treatment outcomes, and considerations related to quality of life and limited life expectancy [6]. Given the diversity within the older population, adopting a person-centred approach, including a process of shared decision making (SDM), becomes essential when facing complex treatment decisions. Discussing a patient's desired role regarding decision making and clarifying personal values, goals, and preferences are important enablers of the SDM process [6-8]. Several studies have highlighted that, as patients age and frailty increases, family members play a more substantial role in shaping the decision-making process, underscoring their potential to support a person-centred approach in SDM [3-5,9]. However, while family members have the potential to facilitate SDM, their involvement can also introduce challenges [4,10,11]. Such challenges may occur, for instance, when family members have treatment preferences that differ from the patient's or when they dominate the conversation [11].

Despite the importance of family member involvement in SDM, the current focus of most SDM models is the dyadic decision-making process between physicians and patients [12-15]. The underlying assumption rests on the pivotal role of physicians in guiding SDM discussions. Physicians' SDM behaviour is expected to lead to heightened engagement from patients. Although these models describe how physicians should engage patients in various SDM phases, practical strategies for involving family members in SDM processes are lacking [8]. When family members are integrated into the SDM process, the communication paradigm shifts from dyadic to triadic. In triadic conversations involving physicians, patients, and family members, a dynamic interplay of mutual influence occurs, with each party helping to shape the communication and decision-making process [15,16]. Balancing the involvement of family members while prioritising the patient's best interests is crucial and requires careful consideration of varied perspectives in the decision process [11,15,17].

Several studies have investigated physicians' SDM behaviour in clinical practice, but comprehensive observational studies on how physicians, patients, and family members relate to each other during SDM conversations are scarce [13,18]. Further research is essential to gain a deeper understanding of the relation between physicians' SDM behaviour and the participation of patients and family members in SDM. Therefore, this study aims to explore associations among the behaviours of physicians, older patients, and family members in the decision-making process at hospital outpatient clinics. We are specifically interested in the relationship between physicians' behaviour and SDM involvement levels for both patients and family members. Exploring the impact of a patient's age on family participation in SDM, we specifically investigate variations between patients aged 65-79 and those aged 80 and older.

2. Methods

2.1. Design

In this observational study, we analysed recordings of outpatient consultations for older patients accompanied by one or more family members during their visit to a medical specialist. The recordings were sourced from an observational study by Driever et al. (2022) focusing on SDM at Isala, a large general teaching hospital in the Netherlands. In Driever et al.'s (2022) study, 727 consultations involving 41 medical specialists were video recorded at the outpatient clinic. Participants were selected without regard to specific characteristics such as comorbidities, and consultations ranged from follow-up sessions to those intended for treatment decisions. Patients with dementia were not included. The recordings utilised a single camera with a fixed focus solely on the physician, while the conversations between physicians, patients, and family members were captured on audio. The sample of recorded consultations was obtained between November 2018 and April 2019 [19].

2.2. Participants

From the original sample of 727 consultations [19], 171 consultations involved patients 65 years of age or older who were accompanied by one or more family members (i.e., individuals who were considered by the patient to be part of their family, including partners, adult children, and occasionally other close relatives or friends). All 31 medical specialists involved in these 171 consultations were asked by e-mail for permission to use the recorded consultations for a secondary analysis, and 16 of these provided written informed consent. Overall, 95 consultations with 95 patients and their family members were included in the present analysis.

2.3. Ethical approval and informed consent

Isala Hospital's Ethical Review Board approved the original study (file number 180706) by Driever et al., and all participating medical specialists and patients provided written informed consent for the original study. In 2023, Isala Hospital's Ethical Review Board approved the request to use the anonymised data for our study, with the condition of renewed informed consent from the included medical specialists, which we obtained. Patients and family members were not visible on the recordings. All recordings started after the initial welcome, to decrease the likelihood that names or other identifying information was captured on video. All data were stored according to regulations.

2.4. Main measures

Baseline data, such as gender and age, were derived from the original study [19]. Driever et al. identified the main decision made for each consultation, which served as the focal point for evaluating SDM. The main decision was defined as the decision that was directly related to the patient's chief complaint and classified into two categories "treatment" and "diagnostic or follow up" [19].

2.5. OPTION^{MCC}

For each consultation, the physician's decision-making behaviour and patient's and family member's involvement were assessed using the Observer Patient Involvement Scale for Patients with Multiple Chronic Conditions (OPTION^{MCC}). This scale was developed for assessing triadic SDM in populations of older patients with MCC [13]. The OPTION^{MCC} is based on the dynamic model of SDM in frail older patients [20] and the widely used OPTION-5 scale [21-23].

The OPTION^{MCC} scale includes seven items representing seven SDM phases, with an explanation of physician's behaviour for each phase (Table 1). The seven phases encompass the original five phases of the OPTION-5 scale, along with two supplementary SDM phases that focus on "discussing patients' goals and values" and "evaluating the decision process".

The OPTION^{MCC} measures physicians' SDM behaviour using a five-point Likert scale. Physicians' total scores range from 0 (minimum) to 28 (maximum), which correspond with transformed scores from 0 to 100. These transformed scores are specifically recommended for comparison with other studies that exclusively assess physician's scores using the OPTION-5 tool [13,21]. Higher scores are given when physicians show more effort to involve the patient in the SDM phases, varying from 0 when behaviour is not observed to 4 when behaviour is executed to a very high standard. Additionally, the OPTION^{MCC} scale provides scores for assessing patients' and family members' level of participation in each of these seven SDM phases using a three-point Likert scale. Levels of participation for patients and family members are defined as follows: 0 - No or minimal participation - "saying only yes or no"; 1 - Responsive participation - "answering questions but not asking or actively contributing to the conversation"; and 2 - Active participation - "answering questions, asking questions, contributing own ideas, and

Table 1
Seven SDM phases and physician's behaviour as explained in the OPTION^{MCC} scoresheet.

SDM phases items of the OPTION ^{MCC} tool	Physician's behaviour
1. Goal talk	The clinician: <i>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.</i> <i>Engages the patient in a dialogue to clarify several important general topics that require clarification before choices can be made regarding the current problem.</i> <i>Identifies discussion partner: Does this patient have sufficient decision-making capacity? 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)</i> <i>Identifies patient values: What are important values in the patients' life?</i> <i>Elicits goals of care</i>
2. Option talk	<i>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.</i>
3. Team talk	<i>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.</i>
4. Option talk	<i>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.</i>
5. Decision talk	<i>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.</i>
6. Decision talk	<i>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.</i>
7. Evaluation	<i>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.</i>

sharing perceptions". Total scores for patients and family members range from 0 (minimum) to 14 (maximum), with higher scores indicating higher levels of involvement in SDM conversations.

2.6. Data analysis

One experienced researcher (BD) and two student researchers in the final phase of their Bachelor of Nursing Studies (MB, SZ) used the Observer OPTION^{MCC} to score physicians', patients', and family members' behaviours regarding their level of participation in SDM.

If two or more family members were present, their participation in the SDM conversation was collectively scored as a single entity. Scoring of SDM behaviours relied solely on verbal cues and did not encompass non-verbal behaviours. The scoring process included taking detailed notes of participants' quotes to provide explanations for the scores, thereby contributing to the overall reliability of the study. To ensure interrater reliability, the first four recordings were scored and discussed among the three researchers to establish agreement. Subsequently, ten recordings were scored independently by the three researchers (BD, MB, SZ), resulting in good intraclass correlation coefficients for the total scores of the physicians (0.83), patients (0.63), and family members (0.93) [21,24] (Table 2). The following 44 recordings were randomly distributed among the three researchers. Each investigator scored 15

Table 2
Intra class coefficients and inter rater correlations for 10 consultations.

Inter Item Correlation for 10 Physicians' total scores & Intra Class Coefficient			
	Rater 1	Rater 2	Rater 3
Rater 1	1000	,700	,623
Rater 2	,700	1000	,888
Rater 3	,623	,888	1000
ICC Average measures	,827		

Inter Item Correlation for 10 Patients' total scores & Intra Class Coefficient			
	Rater 1	Rater 2	Rater 3
Rater 1	1000	,767	,435
Rater 2	,767	1000	,730
Rater 3	,435	,730	1000
ICC Average measures	,628		

Inter Item Correlation for 10 Family members' total scores & Intra Class Coefficient			
	Rater 1	Rater 2	Rater 3
Rater 1	1000	,859	,751
Rater 2	,859	1000	,875
Rater 3	,751	,875	1000
ICC Average measures	,927		

recordings independently, with every fifth recording discussed with the other two investigators to ensure interrater reliability. The remaining 36 recordings were scored by one researcher (BD).

The data were analysed by means of descriptive and testing statistics using the statistical computer program SPSS (version 28). Since the total OPTION^{MCC} scores were not normally distributed, Spearman's rank correlation coefficient was used to examine associations between the total OPTION^{MCC} scores of the physicians, patients and family members. To facilitate comparisons with other studies using the OPTION instrument, we used means and SDs to describe the distribution of these scores in the present study [13,19,22]. A cross-table analysis was conducted to provide further insight into the relationship between patient and family member involvement. To explore the influence of the patients' age, the Mann-Witney U test was used to compare the OPTION^{MCC} scores between consultations with patients between 65 and 79 years old and those with patients 80 years and older. These two age groups were chosen based on the categories defined by the Dutch Central Statistical Office [1]. In the initial study, the type of decision (treatment versus diagnostic or follow-up) was identified as significantly influencing physicians' levels of SDM [19]. Consequently, we conducted a Mann-Whitney U test to examine whether this factor also significantly influences the total OPTION^{MCC} scores of patients and family members, alongside physicians scores.

3. Results

3.1. Participant and consultation characteristics

The participating physicians included 13 men and three women from 11 medical disciplines, with a mean age of 48 years (SD 8.34) (Table 3). Of the 95 patients, 53 were male (55.8%), and 42 were female (44.2%), with a mean age of 75.3 years (SD 6.50). No specific information was collected regarding the accompanying family members. The average duration of the recorded consultations was 16 min (SD 8.13). Thirty-two consultations (33.6%) involved new patients, while 63 were follow-up consultations (66.3%). In 73 consultations (76.8%), treatment decisions were discussed, and in 22 consultations (23.2%), the main decision was classified as diagnostic or follow-up (Table 3). Examples of decisions categorized as diagnostic or follow-up include opting for additional diagnostic investigation, such as a CT scan, for a patient

Table 3
Characteristics of the 16 physicians.

Physicians		N = 16
Gender	male	13
	female	3
Age	35–40	2
	41–50	7
	51–60	6
	missing	1
	Mean	48.3
	SD	8.3
Medical discipline	pulmonary medicine	1
	neurology	1
	gastroenterology	2
	otorhinolaryngology	2
	urology	2
	internal medicine	1
	orthopaedics	1
	cardiology	1
	rheumatology	2
	radiotherapy	2
	anaesthesiology	1

presenting with abdominal complaints; or scheduling a follow-up consultation for a patient in the early stages of Parkinson's disease. Treatment decisions encompass a range of options, including for example maintaining the current medication regimen for a patient experiencing bronchial issues; electing for surgical intervention to remove gallbladder stones; initiating radiotherapy for a patient with cancer; and commencing medication for a patient experiencing constipation.

3.2. OPTION^{MCC} scores: physicians', patients', and family members' SDM participation

The Observer OPTION^{MCC} scores of the physicians are in Table 4, and patients' and family members' scores are presented in Table 6.

The overall physicians' OPTION^{MCC} mean score was 6.92 (SD 5.19), corresponding with a transformed mean score of 24.71 (SD 18.54). The mean total scores of patients and family members were 4.03 (SD 3.02) and 4.09 (SD = 3.67), respectively.

Among physicians, the highest mean item score was observed for item 7, "Evaluation talk" (mean = 1.67), which included evaluation of the decision process and explanation of the treatment plan. The lowest scores were recorded for item 3, "Team talk" (mean = 0.54), which

Table 4
Characteristics of the 95 patients and consultations.

Patients		N = 95 (%)
Gender	male	53 (55.8%)
	female	42 (44.2%)
Age	65–70 year	16 (16.8%)
	70–75 year	36 (37.9%)
	75–80 year	15 (15.8%)
	80–85 year	17 (17.9%)
	85 year and older	11 (11.6%)
	Mean (year)	75.3
	SD	6.5
Consultations		
Type of visit	new consultation	32 (33.7%)
	follow up consultation	63 (66.3%)
Duration	0–10 min	25 (26.3%)
	11–20 min	49 (51.6%)
	21–30 min	17 (17.9%)
	31–40 min	2 (2.1%)
	41–50 min	2 (2.1%)
	51–60 min	0 (0%)
	Mean (minutes)	16.3
	SD	8.13
Type of main decision	treatment	73 (76.8%)
	diagnostic and follow-up	22 (23.2%)

involved expressing support to the patient in the deliberation process. The second-highest scores for physicians were associated with item 1, "Goal talk" (mean = 1.06), involving the identification of patients' values and goals for care, followed by item 4, "Option talk" (mean = 1.05), encompassing the explanation of various treatment options (Table 5).

In the patient group, the highest mean item score was found for item 7, "Evaluation talk" (mean = 1.08), while the lowest scores were observed for item 3, "Team talk" (mean = 0.19). The second-highest scores for patients were linked to item 4, "Option talk" (mean = 0.66), focusing on becoming informed about various treatment options, and item 5, "Decision talk, eliciting preferences" (mean = 0.68), involving clarification of the patient's treatment preferences (Table 6).

Among family members, the highest mean scores were also obtained for item 7, "Evaluation talk," involving reflecting on the decision-making process, the decision taken, and next steps in the treatment plan (mean = 1.04). The second-highest score for family members was associated with item 4, "Option talk", asking questions about treatment options (mean = 0.80) (Table 6).

3.3. Associations between physicians', patients', and family members' OPTION^{MCC} scores

We found a consistent positive association between physicians' SDM behaviour and patients' and family members' involvement in the SDM process (Table 7). Statistically significant correlations were found between the total scores of the physicians and patients (Spearman's rho, 0.68; $p < .001$) and those of the physicians and family members (Spearman's rho, 0.64; $p < .001$) [19]. The results also showed a moderate positive correlation between the total scores of patients and family members (Spearman's rho, 0.53, $p < .001$) (Table 7). The cross-table analysis indicated that across the majority of consultations ($n = 65$), patients and family members demonstrated similar levels of involvement (Table 8). In most cases, patients and family members exhibited moderate levels of involvement ($n = 37$). This was followed by a substantial number of consultations ($n = 27$) where both patients and family members showed passive involvement levels. Only in one consultation did it occur that a family member was actively involved while the patient showed a passive level of involvement.

Family member involvement in SDM was significantly higher in consultations with the focus on treatment decisions compared to diagnostic or follow-up decisions (mean total rank, 30.6 vs. mean total rank, 53.24; $p < .001$). Although the scores of physicians and patients were also higher for treatment decisions than for other type of decisions, the Mann Whitney U test showed no significant differences (physicians' mean total rank, 31.8 vs 52.9; $p = .002$ and patients' mean total rank 33.6 vs 52.4; $p = .005$).

3.4. Patients' age

Family members accompanying patients >80 years of age were significantly more engaged in the process of SDM than those accompanying patients 65 to 80 years of age (mean total rank, 48.8 vs. mean total rank, 63.8; $p < .001$). No significant relationship was found between these age groups and the total OPTION^{MCC} scores of physicians and patients ($p = .16$ and 0.92, respectively).

4. Discussion and conclusion

To our knowledge, this study was the first to explore the associations between physicians' behaviour and patients' and family members' involvement in the decision-making process in an outpatient clinic setting. We found a consistent statistically significant positive correlation between physicians' SDM behaviour and the level of involvement exhibited by patients and family members in the SDM process. Family members were even more involved for patients 80 years of age and

Table 5
OPTION^{MCC} item response physicians.

OPTION ^{MCC} Item	Item score (0–4) (%)						Mean OPTIONMCC score (0–4)		Mean transformed OPTIONMCC score (0–100)	
	0	1	2	3	4	Total	mean	sd	mean	sd
1. Goal talk Identifying patients values and goals of care	36.8	31.6	21.1	9.5	1.1	100%	1.06	1.03	3.79	3.68
2. Option talk 1 Explaining there are more options	37.9	41.1	12.6	7.4	1.1	100%	0.93	0.95	3.32	3.39
3. Team talk Support deliberation/ forming partnership	64.2	23.2	7.4	5.3	0	100%	0.54	0.85	1.93	3.04
4. Option talk 2 Information about options	34.7	33.7	24.2	6.3	1.1	100%	1.05	0.97	3.75	3.46
5. Decision talk 1 Eliciting preferences	49.5	27.4	12.6	9.5	1.1	100%	0.85	1.04	3.04	3.71
6. Decision talk 2 Integrating preferences	52.6	24.2	14.7	8.4	0	100%	0.79	0.99	2.82	3.54
7. Evaluation talk Evaluating the SDM process - preparing treatment plan	7.4	36.8	37.9	16.8	1.1	100%	1.67	0.88	5.96	3.14
TOTAL OPTION^{MCC}							6.92	5.19	24.71	18.54

Table 6
OPTION^{MCC} item response patients and family members.

OPTION ^{MCC} Item	Patients item score (0–2) (%)						Family members item score (0–2) (%)					
	0	1	2	Total	Mean	SD	0	1	2	Total	Mean	SD
1. Goal talk Identifying patients values and goals of care	60.0	24.2	15.8	100%	0.56	0.75	64.2	14.7	21.1	100%	0.57	0.82
2. Option talk 1 Explaining there are more options	72.6	14.7	12.6	100%	0.40	0.71	68.4	15.8	15.8	100%	0.47	0.76
3. Team talk Support deliberation/ forming partnership	84.2	12.6	3.2	100%	0.19	0.47	77.9	12.6	9.5	100%	0.32	0.64
4. Option talk 2 Information about options	54.7	22.1	23.2	100%	0.68	0.83	53.7	12.6	33.7	100%	0.80	0.92
5. Decision talk 1 Eliciting preferences	50.5	32.6	16.8	100%	0.66	0.75	67.4	13.7	18.9	100%	0.52	0.80
6. Decision talk 2 Integrating preferences	60.0	31.6	8.4	100%	0.48	0.65	68.4	25.3	6.3	100%	0.38	0.61
7. Evaluation talk Evaluating the SDM process - preparing treatment plan	24.2	43.2	32.6	100%	1.08	0.75	38.9	17.9	43.2	100%	1.04	0.91
TOTAL OPTION^{MCC}					4.03	3.02					4.09	3.67

Table 7
Correlations between physicians', patients' and family members OPTION^{MCC} scores.

Correlations			Physicians	Patients	Family members
	Mean Option score	Correlation Coefficient	Mean Option score	Mean Option score	Mean Option score
Spearman's rho	Physicians	1000			
	Mean		,682***	,644**	
	Option score				
	Patients		1000	,528**	
	Mean				
	Option score				
	Family members			1000	
	Mean				
	Option score				

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

Table 8
Cross table Patients' and family members' levels of involvement in SDM.

	family members' level of involvement n (%)			Total
	passive involvement (score 0–2)	moderate involvement (score 3–9)	active involvement (score 10–14)	
Patients' level of involvement n (%)				
passive involvement (score 0–2)	27 (28%)	10 (11%)	1 (1%)	38 (40%)
moderate involvement (score 3–9)	12 (13%)	37 (39%)	6 (6%)	55 (58%)
active involvement (score 10–14)	0 (0%)	1 (1%)	1 (1%)	2 (2%)
Total	39 (41%)	48 (51%)	8 (8%)	95 (100%)

older.

Comparing physicians' scores with the results from other studies using different versions of OPTION tools showed similar total mean scores for physicians [19,22]. These scores are considered rather low, indicating room for improvement in physicians' SDM competencies [19]. In our study, these relatively low scores also seem to be linked to reduced levels of patient and family involvement.

While our study identified a positive correlation between physicians' behaviour and the involvement of patients and family members in SDM, it is crucial to emphasise that correlation does not imply causation. Therefore, caution is needed in concluding that changes in physicians' behaviour directly result in alterations in patients' and family members' participation levels.

While perspectives on SDM differ, with some emphasising healthcare professionals' competencies and others recognising the collaborative nature of SDM and the importance of patients' competencies, there is a consensus on physicians' pivotal role in leading medical conversations and shaping SDM discussions [25,26]. Combining these insights with the results of our study, we suggest that physicians can facilitate effective triadic decision-making, potentially impacting the involvement of both patients and family members in the SDM process.

The OPTION^{MCC} scores for two age groups, 65–79 years and 80 years and older, showed significantly higher levels of family involvement for patients 80 years and older. This finding highlights the increased role of family members for patients of 80 years and older in SDM processes. Despite the significant differences in the level of family involvement, we did not find significant differences in the physicians' behaviour or the patients' level of involvement in SDM. These results align with the findings of Driever et al., who found no significant correlation between physicians' total SDM scores and patients' age [19]. The observed higher levels of family involvement in SDM for patients 80 years and older can be attributed to the unique characteristics of both the patient and the family member, independent of the physicians' SDM competencies [3]. As patients become increasingly vulnerable, family members tend to become more involved in the decision-making process [8].

While our study did not include patient's frailty levels, it is plausible that in this context, age functions not solely as a chronological marker but rather as a comprehensive indicator of overall health and cognitive functionality.

Additionally, older patients above 80 are often accompanied by adult children instead of or alongside a partner. Research suggests that adult children tend to be more proactive in seeking information, less hesitant to ask questions, and more supportive in sharing details about the patient's health condition compared to partners [9].

The higher levels of family involvement observed in treatment decisions, surpassing the increase in patient involvement, may be attributed to the proactive supportive role adopted by family members when treatment decisions significantly impact patients. The highest degree of family involvement as assessed by the OPTION^{MCC} item scores was found in the phases in which treatment options were discussed (item 4: Option talk), as well as those in which the next steps of the treatment plan were explained (item 7: Evaluation talk). During these phases, family members were more likely to pose questions, a behaviour attributed to their supportive family caregiver role. Offering comprehensive information to family members during these phases is important to help them effectively manage their expectations and better cope with the patient's illness [27].

4.1. Strengths and weaknesses

A major strength of our study was the observational design based on recorded consultations, which provided insights into real-life triadic processes among physicians, older patients, and their family members in an outpatient clinic. Note taking and frequent calibration between the raters improved the inter-rater reliability. Since only 16 physicians from one medical centre were included, caution is required when generalising these results to other populations and settings. The imbalanced gender distribution among physicians likely resulted from the initial dataset, which consisted of 68% male participants. This disproportion was further exacerbated by a higher rate of consent from men in our study, leading to 81% of participants being male.

The OPTION^{MCC}, which was developed for older patients with multiple chronic conditions, appeared useful for assessing triadic decision-

making. In addition to assessing the level of SDM steps performed by physicians, a notable strength lies in its ability to identify levels of patient and family member involvement on a descriptive level. While the OPTION^{MCC} is an extended version of the well-established and widely used OPTION-5 scale, its validity claim is somewhat tempered by the limited research involving 10 geriatricians and 108 consultations [13]. Since the instrument was not tailored explicitly to explore correlations between physicians' behaviour and the involvement levels of patients and family members, our findings should be viewed as exploratory. Consequently, attributing causality between predictor and outcome variables is not feasible. Our study did not account for confounding variables known to potentially influence levels of SDM, such as consultation duration and the specific nature of the decision being made [19].

A limitation associated with the OPTION^{MCC} observational tool relates to the descriptions of the "Goal talk" and "Evaluation talk" items. The instruction for scoring physicians' behaviour in these two phases include multiple aspects and therefore allow for variation in interpretations among raters. Moreover, the instrument lacks detailed instructions for scoring patient and family member involvement in the different phases, which became most obvious in the "Team talk" phase. We recommend improving both the instrument and its user instructions and recommend further research to enhance the reliability and validity of the OPTION^{MCC} tool.

4.2. Innovation

As the population of older patients, particularly those aged 80 and above, continues to grow, ensuring that the healthcare system is well-prepared for their needs is critical. Enhanced participation of older patients in decision-making processes can be achieved by amplifying the role of their family members [7,9]. Healthcare professionals should be well-informed about strategies aimed at fostering family involvement in decision-making processes with older patients. These strategies include responsiveness to family questions, rapport building, invitation of questions, and validation of the family's role [28]. Recognising the challenges posed by triadic communication and family participation, which can lead to ethical and legal dilemmas [17], we suggest integrating family members' roles into training curricula designed to enhance physicians' communication and SDM competencies. Based on our findings and SDM's collaborative nature, we recommend that physician training focus on raising awareness of the facilitating role of family members, triadic communication skills, and the importance of implementing strategies that involve family members while addressing challenging situations.

SDM and triadic decision-making not only require competencies from physicians but also imply changing roles for patients and family members. To prepare patients for SDM, multiple types of interventions have been developed, ranging from coaching interventions to information-based interventions and campaigns [29]. In addition to improving their information comprehension and option clarification, patients may need help in areas such as formulating and daring to communicate their needs, questions, and values; understanding the importance of their self-knowledge and opinions; managing family involvement; and coping with emotional distress [29]. Interventions focused on preparing family members for participation in SDM are scarce or focus only on patients with cognitive impairment and dementia. In contrast, interventions based on a family systems approach that focus on both patients and family members might support open communication between family members about sensitive issues that can arise after diagnosis and with different treatment options [16]. Additional research into family members' perspectives and the family dynamics that influence SDM processes is recommended. Furthermore, exploring the collaborative aspect of SDM and the reciprocal influences among physicians, patients, and family members in triadic SDM is encouraged for a deeper comprehension.

4.3. Conclusion

Our study has demonstrated a positive association between physicians' SDM behaviour and increased patient and family member participation in SDM conversations, however this does not automatically imply causation. These findings underscore the collaborative nature of SDM, emphasising the facilitating role of physicians in shaping the decision-making processes, along with the significant impact of both patients' and family members' proactive contributions. In the context of patients aged 80 years and above, family members' proactive engagement takes on greater significance. Overall, recognising the potential benefits and complexities of family involvement in SDM is part of the development towards patient- and family-centred care. Family members' becoming partners in care and collaborating with healthcare professionals are considered essential for enhancing healthcare in an ageing population.

Declaration of generative AI in scientific writing

During the preparation of this work the author(s) used ChatGPT in order to improve the English language. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

CRediT authorship contribution statement

Bea L. Dijkman: Writing – original draft, Methodology, Formal analysis, Conceptualization. **Marie Louise Luttik:** Writing – review & editing, Methodology, Conceptualization. **Wolter Paans:** Writing – review & editing, Methodology, Conceptualization. **Ellen M. Driever:** Writing – review & editing, Resources. **Hanneke van der Wal-Huisman:** Writing – review & editing, Conceptualization. **Paul L.P. Brand:** Writing – review & editing, Resources. **Barbara.L. Van Leeuwen:** Supervision, Conceptualization.

Declaration of competing interest

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

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