RESEARCH PAPER

Shared decision-making for the treatment of proximal femoral fractures in frail institutionalised older patients: healthcare providers’ perceived barriers and facilitators

INGE SPRONK1, SVERRE A.I. LOGGERS2,3, PIETER JOOSSE2, HANNA C. WILLEMS4, ROMKE VAN BALEN5, TACO GOSENS6, KORNELIS J. PONSEN2,7, JEROEN STEENS8, C.L.P. (MARC) VAN DE REE5, RUTGER G. ZUURMOND10, MICHAEL H.J. VERHOFSTAD3, ESTHER M.M. VAN LIERSHOUT3, SUZANNE POLINDER1

1Erasmus MC, University Medical Center Rotterdam, Department of Public Health, Rotterdam, PO Box 2040, 3000 CA Rotterdam, The Netherlands
2Department of Surgery, Northwest Clinics Alkmaar, PO Box 501, 1800 AM Alkmaar, The Netherlands
3Trauma Research Unit Department of Surgery, Erasmus MC, University Medical Center Rotterdam, PO Box 2040, 3000 CA Rotterdam, The Netherlands
4Geriatrics Section, Department of Internal Medicine, Amsterdam UMC location AMC, PO Box 22660, 1100 DD Amsterdam, The Netherlands
5Department of Public Health and Primary Care, Leiden University Medical Center, Hippocratespad 21, PO Box 9600, 2300 RC Leiden, The Netherlands
6Department of Orthopaedic Surgery, Elisabeth-TweeSteden Ziekenhuis, PO Box 90151, 5000 LC Tilburg, The Netherlands
7Department of Surgery, Rode Kruis Ziekenhuis, PO Box 1074, 1940 EB Beverwijk, The Netherlands
8Department of Orthopaedic Surgery, Dijklander Ziekenhuis, PO Box 600, 1620 AR Hoorn, The Netherlands
9Department Trauma TopCare, Elisabeth-TweeSteden Ziekenhuis, PO Box 90151, 5000 LC Tilburg, The Netherlands
10Department of Orthopaedic Surgery, Isala, PO Box 10400, 8000 GK Zwolle, The Netherlands

Address correspondence to: Inge Spronk. Tel: +31 107038460. Email: i.spronk@erasusmc.nl

Abstract

Introduction: Proximal femoral fractures are common in frail institutionalised older patients. No convincing evidence exists regarding the optimal treatment strategy for those with a limited pre-fracture life expectancy, underpinning the importance of shared decision-making (SDM). This study investigated healthcare providers’ barriers to and facilitators of the implementation of SDM.

Methods: Dutch healthcare providers completed an adapted version of the Measurement Instrument for Determinants of Innovations questionnaire to identify barriers and facilitators. If ≥20% of participants responded with ‘totally disagree/disagree’, items were considered barriers and, if ≥80% responded with ‘agree/totally agree’, items were considered facilitators.

Results: A total of 271 healthcare providers participated. Five barriers and 23 facilitators were identified. Barriers included the time required to both prepare for and hold SDM conversations, in addition to the reflective period required to allow patients/relatives to make their final decision, and the number of parties required to ensure optimal SDM. Facilitators were related to patients’ values, wishes and satisfaction, the importance of SDM for patients/relatives and the fact that SDM is not considered complex by healthcare providers, is considered to be part of routine care and is believed to be associated with positive patient outcomes.
Conclusion: Awareness of identified facilitators and barriers is an important step in expanding the use of SDM. Implementation strategies should be aimed at managing time constraints. High-quality evidence on outcomes of non-operative and operative management can enhance implementation of SDM to address current concerns around the outcomes.

Keywords: hip fracture, non-operative, shared decision-making, barriers, facilitators, older people

Key Points
• Shared decision-making (SDM) for (non-)operative management of hip fractures in frail institutionalised patients is challenging.
• SDM for operative or non-operative management in frail older patients with a hip fracture is underutilised.
• The main barriers identified to SDM in frail older patients with a hip fracture were time constraints, and the number of parties that have to be involved.
• Addressing concerns regarding outcomes of frail older patients with a hip fracture can enhance further implementation of SDM.

Introduction
Proximal femoral fractures are one of the most common fractures in older persons [1]. These fractures are devastating for the prognosis and (health-related) quality of life [(HR)QoL] of frail patients [2–4]. The standard treatment is operative management (OM) which allows early mobilization, is effective in pain relief and prevents complications of immobilisation. However, surgery does not always prevent frail older patients from developing complications, and rehabilitation is often unsuccessful (∼33%) [4–6]. In addition, hospital admission for surgery can provoke cognitive impairment or delirium [6, 7].

There is an ongoing debate on whether surgery is the best treatment for these patients [6, 8]. A palliative care-focused approach may be appropriate for some. Non-operative management (NOM), focusing on comfort and pain control, could be a valid option for some patients. Due to the lack of evidence, there are no current specific treatment guidelines regarding NOM for proximal femoral fractures [9].

Surgery with rehabilitation goals is the mainstay of care [9, 10]. However, goals of care of the frailest patients often do not concern rehabilitation, but primarily focus on (HR)QoL and comfort [11, 12]. This underpins the importance of openly discussing the advantages and disadvantages of NOM and OM to reach a shared care decision.

In shared decision-making (SDM), patients and healthcare providers openly discuss treatment options, while patients are assisted in expressing their preferences and values, and become actively involved [13, 14]. SDM is an important element of high-quality care [15], as patients report feeling better informed, with better appreciation of potential risks. They also report feeling clearer about their own beliefs, and value a more active role in the decision-making process [16, 17]. Also, SDM is associated with higher satisfaction with the decision made and improved QoL [18–20].

To successfully implement SDM in patients with a proximal femoral fracture, an implementation strategy is required [21]. The first step is to determine barriers and facilitators that may influence implementation of SDM, including an understanding of its principles, attitude and skills specific to SDM, and available time and resources [22]. This ensures that the implementation strategy deals with important barriers and facilitators, and is feasible and tailored to the context [23, 24].

This study aims at gaining insights into the application of SDM for the treatment of frail institutionalised older patients with a proximal femoral fracture, and at identifying healthcare providers’ perceived barriers and facilitators.

Methods
Study design
This cross-sectional questionnaire study followed the ‘Strengthening the Reporting of Observational studies in Epidemiology’ (STROBE) guidelines. The online questionnaire was programmed in LimeSurvey (Version 2.061s) [25] and widely disseminated via the project team and FRAIL-HIP study group [26] to an extensive network of healthcare providers working in the departments of trauma surgery, orthopaedic surgery and in-hospital geriatrics, and to older people’s care physicians. Within Dutch healthcare, dedicated healthcare providers, named older people’s care physicians, in nursing homes are responsible for the care of frail older institutionalised patients. The SDM conversation was explored at the time of injury, not in the setting of advance care planning. Data were collected between 8 December 2020 and 8 March 2021.

Questionnaire
The evidence-based Measurement Instrument for Determinants of Innovations (MIDI) [22] questionnaire was used to
identify barriers and facilitators to implementation of SDM. This 29-item instrument captures common determinants in healthcare and guides design of implementation strategies. Following questionnaire regulations, items were adapted to our study context [22]. As SDM is not a new approach, not all MIDI items were relevant (Table 2). Fourteen MIDI items were included, as well as two items of the Barriers and Facilitators Assessment Instrument (BFAI) [27] and 11 items that were developed after consultation with healthcare providers (Table 2). Each item has five answer options, ranging from 1 (‘totally disagree’) to 5 (‘totally agree’). One open-ended question was added to uncover other barriers.

Five questions were included on patient communication, expected outcomes, reasons for NOM, preferred level of feedback on SDM and on patient outcomes.

Finally, healthcare providers’ characteristics, setting characteristics, application of SDM and the healthcare providers’ role in the SDM process were explored.

The questionnaire was adapted and evaluated rigorously by the FRAIL-HIP study team until consensus was reached [26]. The pre-final version was pilot tested by six healthcare providers. Their comments and suggestions were used to finalise the questionnaire.

**Statistical analyses**

Data were analysed using SPSS version 25.0 (SPSS, Chicago, IL, USA). Continuous data were reported as median (quartiles) due to non-normal distribution. Categorical data were reported as numbers (percentage). In accordance with earlier studies [28, 29], we considered positively worded statements to which ≥20% of the healthcare providers responded ‘(totally) disagree’ as barriers. Positively worded statements to which ≥80% responded ‘(totally) agree’ were considered facilitators. For negatively worded statements, if ≥80% of participants disagreed, statements were considered facilitators, whereas if ≥20% agreed, statements were considered barriers.

Mann–Whitney U-test was used to test for statistical differences in barriers and facilitators between subgroups of healthcare providers. Subgroups studied were: (i) (orthopaedic) trauma surgeons versus residents; (ii) trauma/orthopaedic department versus in-hospital geriatric department; and (iii) hospital versus nursing home setting.

**Results**

**Participants**

A total of 271 healthcare professionals participated (Table 1). All invited disciplines were represented, with a small representation from the emergency department (n = 6). Most healthcare providers were 26–35 years old (38%) and female (55%). Most healthcare professionals were clinicians (63%), and the median duration of professional work experience in their current occupation was 7 years (P25–P75 3–15). The majority of the respondents from the (trauma) surgery and orthopaedics departments were males, whereas the majority of the respondents from the other departments were females. Over half of the healthcare providers (57%) worked in a FRAIL-HIP study site.

**Application of SDM**

Many respondents (97%) had a role in the SDM process (Table 1). Most frequently the SDM conversation was led by a representative of the (trauma) surgery department (41%), including always/often members of a multidisciplinary team (41%). Respondents always (21%) or often (35%) informed patients of the option for NOM, with only 13% reporting rarely and 1% reporting never discussing NOM.

About half of the in-hospital healthcare providers were aware of their patients’ outcomes after SDM on NOM or OM (46–55%), whereas most older people’s care physicians (83%) were aware of their patients’ outcomes. The majority of participants would like to receive more feedback on patients’ well-being after SDM (67%), and on how patients felt about the SDM conversation and the decision made (62%). The most important reasons not to perform surgery were patients’ preferences, patients’ QoL and comorbidities (Figure 1). Patients’ limited mobility was less often considered important. Other reasons reported by at least five professionals were: limited life expectancy (19%); families’ wish (6%); risk of delirium/cognitive problems (4%); or complexity of the fracture or surgery (3%).

**Barriers and facilitators of implementing SDM**

Overall, healthcare providers had a positive attitude towards implementation of SDM (Table 1). Twenty-three facilitators (highlighted in blue in Table 2) and five barriers (highlighted in red in Table 2) were identified.

**SDM as a concept**

Seven facilitators and three barriers were identified; most healthcare providers (94%) welcomed the opportunity to consider patients’ values; 93% considered SDM to be part of routine care; 92% found assessing the eligibility of patients for SDM was straightforward and 86% understood their requirements; 83% reported that SDM was relevant for most patients; and 80% felt able to gain insights into patients’ and their relatives’ wishes and expectations during an SDM conversation (80%). Barriers included the efforts to conduct the SDM with a multidisciplinary team (65%), the time required to conduct the SDM conversation (36%) and the reflective period for patients and their relatives to make a decision (21%).

**User experiences with SDM**

With respect to user experiences, seven facilitators and one barrier were found. The most important facilitator was the likelihood of a positive patient outcome; almost all healthcare providers found it important to achieve satisfaction of the patient and his/her relatives with the decision made...
Table 1. Study characteristics

| Demographics             | Total (n = 271) | Hospital department (n = 166) | Nursing home (n = 105) |
|--------------------------|-----------------|------------------------------|------------------------|
|                          | Surgery (n = 97) | Geriatrics (n = 63)          | Emergency medicine (n = 6) |
|                          | Trauma (n = 68) | Orthopaedics (n = 29)        |                        |
| Sex (male)               | 122 (45.0%)     | 56 (82.4%)                   | 26 (89.7%)             | 10 (15.9%) | 3 (50.0%) | 27 (25.7%) |
| Age (years)              |                 |                              |                        |
| 18–35                    | 102 (37.6%)     | 23 (33.8%)                   | 14 (48.3%)             | 25 (38.1%) | 3 (50.0%) | 37 (35.2%) |
| 36–45                    | 60 (22.1%)      | 23 (33.8%)                   | 6 (20.7%)              | 19 (30.2%) | –          | 12 (11.4%) |
| 46–55                    | 68 (25.1%)      | 20 (29.4%)                   | 8 (27.6%)              | 9 (14.3%)  | 3 (50.0%) | 28 (26.7%) |
| >55                      | 41 (15.1%)      | 2 (2.9%)                     | 1 (3.4%)               | 10 (15.9%) | –          | 28 (26.7%) |
| Occupation               |                 |                              |                        |
| Clinician                | 171 (63.1%)     | 42 (61.8%)                   | 17 (58.6%)             | 41 (65.1%) | 4 (66.7%) | 67 (63.8%) |
| Resident                 | 71 (26.2%)      | 23 (33.8%)                   | 12 (41.4%)             | 13 (20.6%) | 2 (33.3%) | 21 (20.0%) |
| Physician assistant      | 29 (10.7%)      | 3 (4.4%)                     | –                      | 9 (14.3%)  | –          | 17 (16.2%) |
| Experience (years), median | 7.0 (3.0–15.0) | 6.0 (3.0–13.8)               | 8.0 (4.5–12.0)         | 7.0 (4.0–14.0) | 6.0 (0.8–19.3) | 8.0 (3.5–20.0) |

**Shared decision-making (SDM)**

| Role in SDM                          | Total (n = 271) | Hospital department (n = 166) | Nursing home (n = 105) |
|---------------------------------------|-----------------|------------------------------|------------------------|
| Leading conversation                  | 167 (61.6%)     | 49 (72.1%)                   | 15 (51.7%)             | 19 (30.2%) | 2 (33.3%) | 82 (78.1%) |
| Advising attending physician from own specialty | 72 (26.6%)     | 5 (7.4%)                     | 5 (17.2%)              | 40 (63.5%) | 3 (50.0%) | 19 (18.1%) |
| Supervising and attending the SDM conversation | 25 (9.2%)   | 14 (20.6%)                   | 8 (27.6%)              | 1 (1.6%)   | –          | 2 (1.9%)   |
| Not involved                          | 7 (2.6%)        | –                            | 1 (3.4%)               | 3 (4.8%)   | 1 (16.7%) | 2 (1.9%)   |

**Specialty leading SDM conversation**

| Specialty leading SDM conversation | Total (n = 271) | Hospital department (n = 166) | Nursing home (n = 105) |
|------------------------------------|-----------------|------------------------------|------------------------|
| Trauma surgery                     | 110 (40.6%)     | 62 (91.2%)                   | 1 (3.4%)               | 32 (50.8%) | 6 (100%) | 9 (8.6%) |
| Orthopaedics                       | 39 (14.4%)      | 18 (62.1%)                   | 17 (27.0%)             | –          | –         | –         |
| In-hospital clinical geriatrics     | 29 (10.7%)      | 6 (20.7%)                    | 14 (22.2%)             | –          | –         | 4 (3.8%)  |
| Emergency department               | 3 (1.1%)        | 1 (1.5%)                     | 2 (6.9%)               | –          | –         | –         |
| Elderly care physician              | 90 (33.2%)      | –                            | 2 (6.9%)               | –          | –         | 88 (83.8%) |

**Multidisciplinary involvement in SDM**

| Multidisciplinary involvement in SDM | Total (n = 271) | Hospital department (n = 166) | Nursing home (n = 105) |
|--------------------------------------|-----------------|------------------------------|------------------------|
| Always                               | 11 (4.1%)       | 2 (2.9%)                     | 2 (6.9%)               | –          | 1 (16.7%) | 6 (5.7%) |
| Often                                | 99 (36.5%)      | 28 (41.2%)                   | 16 (55.2%)             | 20 (31.7%) | 2 (33.3%) | 33 (31.4%) |
| Sometimes                            | 109 (40.2%)     | 25 (36.8%)                   | 8 (27.6%)              | 35 (55.6%) | 1 (16.7%) | 40 (38.1%) |
| Rarely                               | 43 (15.9%)      | 11 (16.2%)                   | 2 (6.9%)               | 7 (11.1%)  | 1 (16.7%) | 22 (21.0%) |
| Never                                | 9 (3.3%)        | 2 (2.9%)                     | 1 (3.4%)               | 1 (1.6%)   | 1 (16.7%) | 4 (3.8%)  |

(96%). Other facilitators included the fact that conducting SDM is part of a physician’s function (93%), that they have support of colleagues (89%), the experience that patients (87%) and relatives (87%) are usually satisfied with SDM and the decision made, and the experience that patients are usually able to engage in SDM (82%). The identified barrier was the lack of time available to organize a multidisciplinary consultation prior to an SDM conversation (34%).

**User advantages and disadvantages regarding SDM**

Nine facilitators and one barrier were identified related to user advantages and disadvantages regarding SDM. Facilitators were mainly related to the expectation of positive outcomes. Conducting an SDM conversation leads to more satisfaction about the decision made with the relatives (93%), to the best possible patients’ QoL (91%), to patients’ satisfaction about the decision made (91%), to the best possible treatment in view of a patient’s life expectancy (91%) and to healthcare professionals’ satisfaction with the decision made (89%). The potential that SDM leads to a palliative strategy distressing patients and/or their relatives was not considered a barrier by most respondents (89%). However, the possibility of increased pain by NOM was found to be a barrier (24%).

**Other potential barriers**

Sixty-six healthcare providers (30%) indicated 10 other potential barriers. Barriers mentioned by at least five healthcare providers included alternating responsible healthcare providers (n = 15), perceived lack of evidence for SDM
(n = 13), the concern that it is difficult to facilitate SDM outside normal working hours (n = 8), the difficulty of conducting SDM with an incapacitated patient without family/friends to consult (n = 7), the difficulty in managing potentially divergent opinions of the patient and family members (n = 7) and lack of early input from an older people’s care physician (n = 6).

**Barriers and facilitators in subgroups**

**Trauma/orthopaedic medical specialists versus residents**

Generally, these subgroups reported the same barriers and facilitators, though most facilitators were stronger in medical specialists (Table 3). Three significant differences were found. Awareness (93% versus 74%; P = 0.008) and cooperation with patients (90% versus 68%; P = 0.011) were facilitators for medical specialists but not for residents. Also, the opportunity to make their own consideration when treating patients was statistically different between the subgroups (P = 0.030) but was a facilitator in both groups (97% versus 84%).

**Compatibility of SDM with current working methods**

Compatibility of SDM with current working methods (98% versus 87%; P = 0.011); provision of better personalised care (98% versus 88%; P = 0.015); best possible patients’ QoL (P = 0.035); and NOM possibly leading to a palliative strategy (97% versus 87%; P = 0.034) were facilitators for both departments, though stronger for the geriatric department.

The possibility of increased pain due to the choice of NOM was perceived as a barrier by the trauma/orthopaedic but not the geriatrics department (26% versus 18%; P = 0.025). Conducting an SDM conversation with a multidisciplinary team was a stronger barrier for the trauma/orthopaedic department (69% versus 49%; P = 0.006).

**Hospital versus nursing home setting**

Some facilitators and barriers differed between the hospital and nursing home setting (Table 3). The number of parties involved in SDM was a facilitator in the nursing home but not in the hospital setting (86% versus 73%; P = 0.016), whereas conducting SDM at the emergency unit (30% versus 13%; P < 0.001) and the reflective period for patients and relatives to make a final decision were barriers for nursing home caregivers but not hospital caregivers (22% versus 19%; P = 0.018). On the other hand, colleagues who are expected but not used to conduct SDM conversations were found to be a barrier in the hospital but not the nursing home setting (21% versus 11%; P = 0.011). The belief that SDM always takes more time than expected was a barrier in both settings (44% v versus 22%; P < 0.001).

**Discussion**

This study evaluated healthcare providers’ barriers to and facilitators of the implementation of SDM for the treatment decision on NOM and OM of proximal femoral fractures.
# Table 2. Barriers and facilitators influencing the implementation of shared decision-making (SDM) for the treatment decision for proximal femoral fracture in frail institutionalised older patients (n = 271)

| No. | Origin item | Questionnaire item | Disagree/ totally disagree (%) | Neutral (%) | Agree/ totally agree (%) |
|-----|-------------|--------------------|---------------------------------|------------|--------------------------|
|     |             | Concept and intervention: SDM for proximal femoral fracture in frail institutionalized older patients |                                  |            |                          |
| 1   | M067        | Relevance for patient: SDM is suitable for frail institutionalized older patients with a proximal femoral fracture (+) | 5.9 | 10.7 | 83.4 |
| 2   | M064        | Complexity: assessing which patients are eligible for SDM for the treatment decision for proximal femoral fractures in frail institutionalized older patients is not too complex for me (+) | 2.2 | 6.3 | 91.5 |
| 3   | M063        | Completeness: I have all the information and support needed to have an SDM conversation (+) | 16.2 | 18.1 | 65.6 |
| 4   | M061        | Compatibility: Conducting an SDM conversation is compatible with my working methods (+) | 2.6 | 4.1 | 93.4 |
| 5   | B001        | SDM provides me with the opportunity to make my own consideration (+) | 1.1 | 5.2 | 93.7 |
| 6   | B002        | SDM provides me with the opportunity to include the values of the patient (+) | 1.1 | 4.4 | 94.4 |
| 7   | M071        | Knowledge: I have enough knowledge to conduct an SDM conversation with patients from this patient group (+) | 7.0 | 15.5 | 77.7 |
| 8   | M072        | Awareness: I am aware of what is expected of me in conducting an SDM conversation (+) | 4.8 | 9.2 | 86.0 |
| 9   |             | I find it difficult to gain insights into the patient’s and their relatives wishes and expectations during an SDM conversation (-) | 80.4 | 13.7 | 5.9 |
| 10  |             | The number of parties that have to attend the conversation prevents me from conducting an SDM conversation (-) | 77.9 | 15.9 | 6.3 |
| 11  |             | I feel that it is not always necessary to conduct an SDM conversation with a multidisciplinary team (-) | 22.9 | 12.5 | 64.6 |
| 12  |             | I think that an SDM conversation can be held in a calm manner at the emergency unit (+) | 19.2 | 22.1 | 58.7 |
| 13  |             | SDM always takes more time than I expected (-) | 35.1 | 29.5 | 35.5 |
| 14  |             | I think it is desirable to give patients and their relatives at least a few hours to think before making the final decision (+) | 31.0 | 27.3 | 51.6 |
|     |             | User: Experiences with SDM for the treatment decision for proximal femoral fracture in frail institutionalized older patients |                                  |            |                          |
| 15  | M073a       | Outcome: I find it important to achieve satisfaction of the patient and/or his/her relative with the decision made (+) | 1.1 | 3.0 | 95.9 |
| 16  | M073b       | Professional obligation: Conducting SDM conversation is part of my role (+) | 2.2 | 5.2 | 92.6 |
| 17  | M073c       | Satisfaction: Patients are usually satisfied with the SDM conversation and the decision made (+) | 0 | 13.3 | 86.7 |
| 18  | M073d       | Satisfaction: Relatives are usually satisfied with the SDM conversation and the decision made (+) | 0 | 12.9 | 87.1 |
| 19  | M073e       | Cooperation: Patients are usually able to have an SDM conversation and make a decision (+) | 3.3 | 14.4 | 82.1 |
| 20  | M073f       | Cooperation: Relatives are usually able to have an SDM conversation and make a decision (+) | 3.3 | 21.8 | 75.0 |
| 21  | M073g       | Support: I can count on adequate assistance from colleagues if needed (+) | 0.7 | 10.7 | 88.6 |
| 22  | M073h       | Descriptive norm: all colleagues that are expected to conduct SDM conversation actually have these conversations (+) | 17.0 | 25.1 | 58.0 |
| 23  | M073i       | Self-efficacy: I am able to conduct an SDM conversation (+) | 0.7 | 3.3 | 95.9 |
| 24  |             | A multidisciplinary consultation prior to an SDM conversation contributes to a successful SDM conversation (+) | 10.0 | 23.6 | 66.4 |
| 25  |             | Within my organization there is enough available time to conduct a multidisciplinary consultation prior to an SDM conversation (+) | 33.6 | 31.0 | 35.4 |
|     |             | User: Advantages and disadvantages of SDM for the treatment decision for proximal femoral fracture in frail institutionalized older patients |                                  |            |                          |
| 26  | M074a       | Personal benefits: conducting an SDM conversation improves my satisfaction about the decision (+) | 0.9 | 14.4 | 85.7 |
| 27  | M074b       | Personal benefits: conducting an SDM conversation supports me to provide better personalized care (+) | 0.4 | 7.0 | 92.7 |
| 28  | M074c       | Personal benefits: the time needed for an SDM conversation impedes me to conduct SDM (-) | 62.0 | 25.5 | 18.8 |
| 29  | M074d       | Personal benefits: I find it difficult that I have to provide patients/relatives a reflection period after the SDM conversation before making a final decision (-) | 56.1 | 28.4 | 15.5 |
| 30  | M074e       | Outcomes expectations: conducting an SDM conversation leads to the best possible quality of life (+) | 1.1 | 7.7 | 91.2 |
| 31  | M074f       | Outcomes expectations: conducting an SDM conversation leads to less surgeries in this patient group (+) | 10.0 | 33.2 | 56.8 |
| 32  | M074g       | Outcomes expectations: conducting an SDM conversation leads to less pain for patients (+) | 24.0 | 46.1 | 29.9 |
| 33  | M074h       | Outcomes expectations: conducting an SDM conversation leads to the best possible treatment in view of the patient’s life expectancy (+) | 2.2 | 7.0 | 90.8 |
| 34  | M074i       | Outcomes expectations: conducting an SDM conversation leads to patient’s satisfaction about the decision made (+) | 0.4 | 8.5 | 91.1 |
| 35  | M074j       | Outcomes expectations: conducting an SDM conversation leads to relatives’ satisfaction about the decision made (+) | 0 | 7.0 | 93.0 |
| 36  | M074k       | Outcomes expectations: conducting an SDM conversation leads to satisfaction for me and my colleagues about the decision made (+) | 0.7 | 10.0 | 89.3 |
| 37  | M074l       | Outcomes expectations: conducting an SDM conversation leads to decreased healthcare use and associated costs (+) | 8.1 | 32.8 | 59.0 |
| 38  |             | My own opinion about surgical versus non-surgical policy impedes me in conducting SDM (-) | 79.0 | 15.5 | 5.5 |
| 39  |             | The fact that the nonoperative management results in a redistribution of costs for hospitals and nursing homes impedes me in conducting SDM (-) | 91.9 | 5.9 | 2.2 |
| 40  |             | The fact that nonoperative management may lead to a palliative strategy and can shock patients and/or their relatives impedes me in conducting SDM (-) | 88.9 | 4.8 | 6.3 |

Note: (+) indicates positive statement; (-) indicates negative statement. Data are shown as percentages. Highlighted in red are barriers; highlighted in blue are facilitators.
| No. | Questionnaire item                                                                 | Trauma/orthopaedic department (n=59) | Department (n=97) | In-hospital clinical geriatrics (n=63) | Setting | Hospital (n=166) | Nursing home (n=105) |
|-----|-------------------------------------------------------------------------------------|-------------------------------------|-------------------|--------------------------------------|---------|-----------------|---------------------|
|     |                                                                                     | (totally) agree (%) | (totally) disagree (%) | (totally) agree (%) | (totally) disagree (%) | (totally) agree (%) | (totally) disagree (%) | (totally) agree (%) | (totally) disagree (%) | (totally) agree (%) | (totally) disagree (%) | (totally) agree (%) | (totally) disagree (%) |
| 1   | Concept: SDM for proximal femoral fracture in frail institutionalised older patients | 8.5 | 74.6 | 6.2 | 77.3 | 1.6 | 95.2 | 4.2 | 83.7 | 8.6 | 82.9 |
| 2   | Complexity: assessing which patients are eligible for SDM for the treatment decision for proximal femoral fractures in frail institutionalised older patients is not too complex for me (+) | 3.4 | 91.5 | 31 | 90.7 | 1.6 | 96.8 | 2.4 | 92.2 | 1.9 | 90.5 |
| 3   | Completeness: I have the information and support needed to have an SDM conversation (+) | 10.2 | 72.9 | 14.4 | 69.1 | 17.5 | 61.9 | 16.9 | 64.5 | 15.2 | 67.6 |
| 4   | Compatibility: conducting an SDM conversation is compatible with my working method (+) | 1.7 | 89.8 | 1.0 | 91.8 | 1.6 | 98.4 | 1.2 | 94.6 | 1.0 | 92.4 |
| 5   | SDM provides me with the opportunity to make my own consideration (+)                | 0 | 96.6 | 1.0 | 92.8 | 1.6 | 96.8 | 1.2 | 94.6 | 1.0 | 94.3 |
| 6   | SDM provides me with the opportunity to include the values of the patient (+)        | 1.7 | 94.9 | 0 | 89.5 | 1.0 | 92.8 | 1.6 | 96.8 | 1.2 | 94.6 | 1.0 | 94.3 |
| 7   | Knowledge: I have enough knowledge to conduct an SDM conversation with patients from this patient group (+) | 6.8 | 81.4 | 8.2 | 75.3 | 7.9 | 76.2 | 8.4 | 74.1 | 4.8 | 82.9 |
| 8   | Awareness: I am aware of what is expected of me in conducting an SDM conversation (+) | 1.7 | 93.2 | 4.1 | 85.6 | 6.3 | 88.9 | 5.4 | 85.5 | 3.8 | 86.7 |
| 9   | I find it difficult to gain insights into the patients’ and their relatives’ wishes and expectations during an SDM conversation (−) | 72.9 | 68.3 | 76.3 | 5.2 | 88.9 | 1.6 | 79.5 | 4.8 | 81.9 | 7.6 |
| 10  | The number of parties that have to attend the conversation prevents me from conducting an SDM conversation (−) | 69.5 | 53.1 | 66.0 | 9.3 | 88.9 | 3.2 | 72.9 | 7.2 | 85.7 | 4.8 |
| 11  | I feel that it is not always necessary to conduct an SDM conversation with a multidisciplinary team (−) | 18.6 | 72.9 | 19.6 | 69.1 | 39.7 | 49.2 | 26.5 | 61.4 | 17.1 | 69.5 |
| 12  | I think that an SDM conversation can be held in a calm manner at the emergency unit (+) | 6.8 | 81.4 | 9.3 | 75.3 | 14.3 | 71.4 | 12.7 | 72.9 | 29.5 | 36.2 |
| 13  | SDM always takes more time than I expected (−)                                       | 20.3 | 37.3 | 18.6 | 45.4 | 33.3 | 41.3 | 24.1 | 44.0 | 52.4 | 21.9 |
| 14  | I think it is desirable to give patients and their relatives at least a few hours to think before making the final decision (+) | 20.3 | 62.7 | 21.6 | 63.9 | 14.3 | 50.8 | 18.7 | 57.8 | 24.8 | 41.9 |
| 15  | Outcome: I find it important to achieve satisfaction for the patient and/or his/her relative with the decision made (+) | 1.7 | 96.6 | 2.1 | 94.8 | 1.6 | 95.2 | 1.8 | 95.2 | 0 | 97.1 |
| 16  | Professional obligation: conducting an SDM conversation is part of my role (+)       | 1.7 | 89.8 | 3.1 | 89.7 | 1.6 | 93.7 | 3.6 | 90.4 | 0 | 96.2 |
| 17  | Satisfaction: patients are usually satisfied with the SDM conversation and the decision made (+) | 0 | 88.1 | 0 | 86.6 | 0 | 88.9 | 0 | 86.1 | 0 | 87.6 |
| 18  | Satisfaction: relatives are usually satisfied with the SDM conversation and the decision made (+) | 0 | 84.7 | 0 | 82.5 | 0 | 90.5 | 0 | 84.3 | 0 | 94.3 |
### Table 3. Continued.

| No. | Questionnaire item                                                                                     | Trauma/orthopaedic department | Department | Setting                                                                 |
|-----|--------------------------------------------------------------------------------------------------------|-----------------------------|------------|-------------------------------------------------------------------------|
|     | (Clinicians (n = 59) (totally) disagree (%) (totally) agree (%))                                      | (Residents/physician assistants (n = 38) (totally) disagree (%) (totally) agree (%)) | (Trauma/orthopaedics (n = 97) (totally) disagree (%) (totally) agree (%)) | (In-hospital clinical geriatrics (n = 63) (totally) disagree (%) (totally) agree (%)) | (Hospital (n = 166) (totally) disagree (%) (totally) agree (%)) | (Nursing home (n = 105) (totally) disagree (%) (totally) agree (%)) |
| 19  | Cooperation: patients are usually able to have an SDM conversation and make a decision (+)            | 3.4                         | 89.8       | 2.6                        | 68.4                        | 3.1                     | 81.4       | 1.6                     | 88.9                        | 2.4             | 83.7       | 4.8                     | 80.0                        |
| 20  | Cooperation: relatives are usually able to have an SDM conversation and make a decision (+)           | 3.4                         | 66.1       | 2.6                        | 68.4                        | 3.1                     | 67.0       | 4.8                     | 81.0                        | 3.6             | 71.1       | 2.9                     | 81.0                        |
| 21  | Support: I can count on adequate assistance from colleagues if needed (+)                              | 1.7                         | 86.4       | 0                          | 86.8                        | 1.0                     | 86.6       | 1.6                     | 93.7                        | 1.2             | 89.2       | 0                       | 87.6                        |
| 22  | Descriptive norm: all colleagues that are expected to conduct an SDM conversation actually have these conversations (+) | 16.9                        | 59.3       | 23.7                       | 44.7                        | 19.6                    | 53.6       | 20.6                    | 54.0                        | 21.1            | 52.4       | 10.5                    | 66.7                        |
| 23  | Self efficacy: I am able to conduct an SDM conversation (+)                                            | 0                           | 100        | 0                          | 94.7                        | 0                      | 97.9       | 0                       | 96.8                        | 9.0             | 67.5       | 11.4                    | 64.8                        |
| 24  | A multidisciplinary consultation prior to an SDM conversation contributes to a successful SDM conversation (+) | 15.3                        | 54.2       | 10.5                       | 60.5                        | 13.4                    | 56.7       | 1.6                     | 85.7                        | 0.6             | 95.8       | 1.0                     | 96.2                        |
| 25  | Within my organisation there is enough available time to conduct a multidisciplinary consultation prior to an SDM conversation (+) | 22.0                        | 35.6       | 42.1                       | 28.9                        | 29.9                    | 33.0       | 44.4                    | 36.5                        | 35.5            | 33.7       | 30.5                    | 38.1                        |
| 26  | Bursal/benefits conducting an SDM conversation improves my satisfaction about the decision (+)         | 1.7                         | 88.1       | 2.6                        | 73.7                        | 1.0                     | 77.3       | 0                       | 90.5                        | 0.6             | 82.5       | 0                       | 89.5                        |
| 27  | Bursal/benefits conducting an SDM conversation supports me to provide better personalised care (+)       | 1.7                         | 88.1       | 2.6                        | 86.8                        | 1.0                     | 87.6       | 0                       | 98.4                        | 0.6             | 91.6       | 0                       | 94.3                        |
| 28  | Bursal/benefits the time needed for an SDM conversation impedes me in conducting an SDM (+)             | 10.2                        | 41.7       | 28.9                       | 54.4                        | 17.5                    | 57.5       | 1.6                     | 85.7                        | 49.4            | 18.1       | 81.9                    | 3.8                         |
| 29  | Bursal/benefits I find it difficult that I have to provide patients/relatives with a reflection period after the SDM conversation before making a final decision (+) | 55.9                        | 20.3       | 55.5                       | 21.1                        | 55.7                    | 20.6       | 66.7                    | 7.9                         | 59.0            | 16.3       | 51.4                    | 14.3                        |
| 30  | Outcomes expectations: conducting an SDM conversation leads to the best possible quality of life (+)    | 1.7                         | 86.4       | 2.6                        | 81.6                        | 2.1                     | 84.5       | 0                       | 95.2                        | 1.2             | 89.2       | 1.0                     | 94.3                        |
| 31  | Outcomes expectations: conducting an SDM conversation leads to less surgery in this patient group (+)  | 1.7                         | 66.1       | 3.5                        | 65.8                        | 5.2                     | 66.0       | 11.1                    | 44.4                        | 7.2             | 57.8       | 14.3                    | 55.2                        |
| 32  | Outcomes expectations: conducting an SDM conversation leads to less pain for patients (+)              | 22.0                        | 22.0       | 35.1                       | 15.8                        | 25.8                    | 19.6       | 17.5                    | 36.5                        | 22.9            | 26.5       | 25.7                    | 35.1                        |
| 33  | Outcomes expectations: conducting an SDM conversation leads to the best possible treatment in view of the patient’s life expectancy (+) | 1.7                         | 93.2       | 2.6                        | 89.5                        | 2.1                     | 91.8       | 3.2                     | 90.5                        | 2.4             | 91.0       | 1.9                     | 90.5                        |
| 34  | Outcomes expectations: conducting an SDM conversation leads to patients’ satisfaction about the decision made (+) | 0                           | 94.9       | 2.6                        | 84.2                        | 1.0                     | 90.7       | 0                       | 98.4                        | 0.6             | 92.8       | 0                       | 88.6                        |
| 35  | Outcomes expectations: conducting an SDM conversation leads to relatives’ satisfaction about the decision made (+) | 0                           | 96.6       | 0                          | 86.8                        | 0                      | 92.8       | 0                       | 98.4                        | 0.6             | 94.0       | 0                       | 91.4                        |
| 36  | Outcomes expectations: conducting an SDM conversation leads to satisfaction for me and my colleagues about the decision made (+) | 0                           | 89.8       | 2.6                        | 84.2                        | 1.0                     | 87.6       | 0                       | 95.2                        | 0.6             | 91.0       | 1.0                     | 86.7                        |
| 37  | Outcomes expectations: conducting an SDM conversation leads to decrease and healthcare use and associated costs (+) | 5.1                         | 61.0       | 0                          | 63.2                        | 6.2                     | 68.9       | 4.8                     | 65.1                        | 5.4             | 63.9       | 12.4                    | 51.4                        |
| 38  | My own opinion about surgical versus non-surgical policy impedes me in conducting an SDM (+)            | 76.3                        | 8.5        | 76.3                       | 7.9                         | 76.3                    | 8.2        | 77.8                    | 6.3                         | 75.9            | 7.8        | 83.8                    | 1.9                         |
| 39  | The fact that the non-operative management results in a redistribution of costs for hospitals and nursing homes impedes me in conducting an SDM (+) | 84.7                        | 5.1        | 94.7                       | 2.6                         | 88.7                    | 4.1        | 95.2                    | 0                           | 90.4            | 2.4        | 94.3                    | 1.9                         |
| 40  | The fact that non-operative management may lead to a palliative strategy and can shock patients and/or their relatives impedes me in conducting an SDM (+) | 83.1                        | 10.2       | 92.1                       | 5.3                         | 86.6                    | 8.2        | 96.8                    | 0                           | 89.2            | 6.0        | 88.6                    | 6.7                         |

Note: (+) indicates a positive statement; (−) indicates a negative statement. Data are shown as percentages. Bold figures indicate statistically significant differences between subgroups.
in frail institutionalised older patients. Facilitators were generally related to patients’ values, wishes and satisfaction with SDM, the importance of SDM for patients/relatives, the fact that SDM is not considered complex by healthcare providers, is considered part of routine care and that it is believed to be associated with positive patients’ outcomes. Barriers included the time required to hold an SDM conversation, the reflective period required to allow patients/relatives to make their final decision, the number of parties required to ensure optimal SDM and the possibility of increased pain by NOM.

No studies have previously been published on barriers and facilitators of SDM on NOM or OM of frail older patients who sustain a proximal femoral fracture. Prior studies on healthcare providers’ barriers and facilitators of SDM in other medical conditions also found that time constraints were the main barrier for SDM [30–33], whereas facilitators were the belief that SDM positively impacts patients’ outcome and the clinical process [30]. Previous research on barriers reported by patients showed that the uncertainty of lack of consensus about treatment decisions, concerns regarding adverse effects and poor healthcare provider communication were the main barriers [32]. Uncertainty is an important topic in the treatment of proximal femoral fractures, especially with regards to NOM in patients with a limited life expectancy [10]. This was also reflected in our study, as many healthcare providers indicated they would like to receive more feedback on patients’ well-being after SDM, how patients felt about the SDM conversation and the satisfaction with the decision made, which indirectly indicates a lack of transmural feedback.

Working experience, department and setting were all found to influence identified facilitators and barriers. Medical specialists reported stronger facilitators compared with residents, probably due to their difference in working experience. Facilitators were stronger in the geriatrics department than in the trauma/orthopaedic department, potentially because geriatricians are more used to engaging in SDM end-of-life discussions and might have more time available per patient compared with surgical disciplines.

The SDM process and the degree of assessment may impact the (treatment) decision made [34]. It was shown that the implementation of a comprehensive geriatric assessment (CGA) and SDM raised the rate of NOM from 2.7% to 9.1% [34], indicating the importance of SDM and openly discussing treatment options [11]. There is growing evidence that routinely engaging in end-of-life discussions with frail ‘high-risk’ patients and their proxies about the option to forgo life-sustaining therapies promotes patients’ and families’ values, improves the quality of dying and reduces relatives’ distress and bereavement [35, 36].

To further improve the uptake of SDM, implementation strategies should mainly address the time consumption aspect, as well as other identified facilitators and barriers [21, 23, 24]. The implementation strategy should be tailored to the specific context, to specific healthcare providers and their level of experience, and include the local circumstances, care pathways and culture in order to be feasible [37–39]. Identified barriers, especially time constraints and concerns around the outcomes, should be addressed. Although proximal femoral fractures are acute events, a decision on NOM or OM does not have to be made hastily [40]. Waiting time for surgery within 24–48 h is not necessarily associated with worse outcomes, as long as the patients’ condition is optimized for surgery [41–43]. Therefore, taking time to organize a multidisciplinary meeting or a reflective period after the initial conversation, instead of rushed decision-making, can only be advocated. Also, high-quality evidence of outcomes will enhance the implementation of SDM.

Knowledge of risks and outcomes provides an opportunity to inform not only healthcare providers, but also patients and their relatives, which is especially important for realistic expectation management. Risk stratification tools, such as the Clinical Frailty Scale, can help estimate the risk of mortality, thereby supporting the SDM process [44]. Together with CGA and advance care planning (ACP), SDM support tools [45–48] inform patients and their relatives on care and treatment options and support them in discussing these with their healthcare provider [47–49]. CGA, ACP and SDM tools helps patients form more stable preferences [50], and make it easier for healthcare providers to undertake SDM [45]. Developing an SDM support tool might thus be valuable to implement SDM for the treatment decision on proximal femoral fracture in frail institutionalised patients.

Strengths and limitations

The large number of participants enabled us to perform subgroup analyses so that implementation strategies can be tailored to specific healthcare providers across the continuum of care. A limitation was the web-based open link form of the survey. By using this method, we were not aware of who received the open link; only who completed the survey. We therefore have no insight into the response rate and whether responders differed from non-responders. Another limitation was that some healthcare providers (57%) also participated in a study on SDM and outcomes of frail institutionalised patients with a proximal femoral fracture [51]. Although results of this study were not available at the time of conducting this survey, this might influence the potential barriers and facilitators as compared with non-participating hospitals, as participating centres may already practise SDM more extensively for this specific group of patients. The influence of financial factors was not explored, as by law it is mandatory for residents in the Netherlands to be insured, which covers all related healthcare costs. Also prices for proximal femoral surgery are pre-defined. Financial factors might play a role in other healthcare systems.

Conclusion

This study provides important insights into healthcare providers' facilitators and barriers to SDM for the treatment of proximal femoral fractures in frail institutionalised
older patients. The results can be used to enhance further implementation of SDM. Facilitators for implementation are related to patients' values, wishes, satisfaction and perceived relevance of SDM, and the belief that it is associated with positive patient outcomes. In addition, implementation strategies should be aimed at managing time constraints and be targeted towards different healthcare providers and their level of experience. Further quality evidence on outcomes of NOM and OM can enhance further implementation of SDM as they address the current insecurities around the outcomes.

Declaration of Conflicts of Interest: This work was supported by the Netherlands Organization for Health Research and Development (ZonMW; ref. no. 843,004,120, 2018) and Osteosynthesis and Trauma Care Foundation (ref. no. 2019-PJKP, 2019) for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in the previous 3 years; no other relationships or activities that could appear to have influenced the submitted work.

Declaration of Sources of Funding: The Netherlands Organization for Health Research and Development (ZonMW; ref. no. 843,004,120) and Osteosynthesis and Trauma Care Foundation (ref. no. 2019-PJKP) funded this study but did not play a role in the design and conduct of the study; collection, management, analysis and interpretation of the data; preparation, review or approval of the manuscript; and decision to submit the manuscript for publication.

References

1. Zuckerman JD. Hip fracture. N Engl J Med 1996; 334: 1519–25.
2. Gjertsen J-E, Baste V, Fevang JM, Furnes O, Engesæter LB. Quality of life following hip fractures: results from the Norwegian hip fracture register. BMC Musculoskelet Disord 2016; 17: 265. https://doi.org/10.1186/s12891-016-1111-y.
3. Peeters CM, Visser E, Van de Ree CL, Gosens T, Den Oudsten BL, De Vries J. Quality of life after hip fracture in the elderly: a systematic literature review. Injury 2016; 47: 1369–82.
4. Neuman MD, Silber JH, Magaziner JS, Passarella MA, Mehta S, Werner RM. Survival and functional outcomes after hip fracture among nursing home residents. JAMA Intern Med 2014; 174: 1273–80.
5. Berry SD, Samelson EJ, Bordes M, Broe K, Kiel DP. Survival of aged nursing home residents with hip fracture. J Gerontol A Biol Sci Med Sci 2009; 64A: 771–7.
6. Berry SD, Rothbaum RR, Kiel DP, Lee Y, Mitchell SL. Association of clinical outcomes with surgical repair of hip fracture vs nonsurgical management in nursing home residents with advanced dementia. JAMA Intern Med 2018; 178: 774–80.
7. Nauth A, Creek AT, Zellar A et al. Fracture fixation in the operative management of hip fractures (FAITH): an international, multicentre, randomised controlled trial. Lancet 2017; 389: 1519–27.
8. Ko FC, Morrison RS. Hip fracture: a trigger for palliative care in vulnerable older adults. JAMA Intern Med 2014; 174: 1281–2.
9. National Institute for Health and Care Excellence. In: Cameron Swift, ed. Hip fracture: management. London: National Clinical Guideline Centre, 2017; https://www.nice.org.uk/guidance/cg124.
10. Murray IR, Biant LC, Clement NC, Murray SA. Should a hip fracture in a frail older person be a trigger for assessment of palliative care needs? BMJ Support Palliat Care 2011; 1: 3–4.
11. Mitchell SL, Palmer JA, Volandes AE, Hanson LC, Habtemariam D, Shaffer ML. Level of care preferences among nursing home residents with advanced dementia. J Pain Symptom Manage 2017; 54: 340–5.
12. Johnston CB, Holleran A, Ong T, McVeigh U, Ames E. Hip fracture in the setting of limited life expectancy: the importance of considering goals of care and prognosis. J Palliat Med 2018; 21: 1069–73.
13. Elwyn G, Frosch D, Thomson R et al. Shared decision making: a model for clinical practice. J Gen Intern Med 2012; 27: 1361–7.
14. Elwyn G, Laitner S, Coulter A, Walker E, Watson P, Thomson R. Implementing shared decision making in the NHS. BMJ 2010; 341: c5146. https://doi.org/10.1136/bmj.c5146.
15. Mohammed K, Nolan MB, Rajoo T et al. Creating a patient-centered health care delivery system: a systematic review of health care quality from the patient perspective. Am J Med Qual 2016; 31: 12–21.
16. Stiggelbout AM, Van der Weijden T, De Wit MP et al. Shared decision making: really putting patients at the Centre of healthcare. BMJ 2012; 344: e256. https://doi.org/10.1136/bmj.e256.
17. Boss EF, Mehta N, Nagarajan N et al. Shared decision making and choice for elective surgical care: a systematic review. Otolaryngol Head Neck Surg 2016; 154: 405–20.
18. Kashaf MS, McGill E. Does shared decision making in cancer treatment improve quality of life? A systematic literature review. Med Decis Making 2015; 35: 1037–48.
19. Stacey D, Légaré F, Lewis K et al. Decision aids for people facing health treatment or screening decisions. Cochrane Database Syst Rev 2017; 2017: 1–287.
20. Kane HL, Halpern MT, Squiers LB, Treiman KA, McCormack LA. Implementing and evaluating shared decision making in oncology practice. CA Cancer J Clin 2014; 64: 377–88.
21. Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. Implement Sci 2013; 8: 139. https://doi.org/10.1186/1748-5908-8-139.
22. Fleuren MA, Paulussen TG, Van Dommelen P, Van Buuren S. Towards a measurement instrument for determinants of innovations. Int J Qual Health Care 2014; 26: 501–10.
23. Baker R, Camosso-Stefinovic J, Gillies C et al. Tailored interventions to address determinants of practice. Cochrane Database Syst Rev 2015; 4: 1–114.
24. Kok G, Gottlieb NH, Peters G-JY et al. A taxonomy of behaviour change methods: an intervention mapping approach. Health Psychol Rev 2016; 10: 297–312.
Barriers and facilitators of shared decision-making for treatment of femoral fractures

25. LimeSurvey GmbH. Turn questions into answers. 2021; https://www.limesurvey.org/.

26. Joosse P, Loggers SA, Van de Ree CM et al. The value of non-operative versus operative treatment of frail institutionalized elderly patients with a proximal femoral fracture in the shade of life (FRAIL-HIP): protocol for a multicenter observational cohort study. BMC Geriatr 2019; 19: 1–12.

27. Harmsen M, Peters M, Wensing M. Barriers and facilitators assessment instrument: Introduction, instructions and instrument. Scientific Institute for Quality of Healthcare, Nijmegen: IQ healthcare, Radboud University Medical Center Nijmegen, 2005.

28. Schepers SA, Sint Nicolaas SM, Haverman L et al. Real-world implementation of electronic patient-reported outcomes in outpatient pediatric cancer care. Psychooncology 2017; 26: 951–9.

29. Verberne LM, Kars MC, Schepers SA, Schouten van MeeterenAY, Grootenhuis MA, van Delden JJ. Barriers and facilitators to the implementation of a paediatric palliative care team. BMC Palliat Care 2018; 17: 1–8.

30. Légaré F, Ratté 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: 526–35.

31. 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: 291–309.

32. Convey JR, Kamal KM, Gorse EE et al. Barriers and facilitators to shared decision-making in oncology: a systematic review of the literature. Support Care Cancer 2019; 27: 1613–37.

33. Yahanda AT, Mozersky J. What’s the role of time in shared decision making? AMA J Ethics 2020; 22: E416–22.

34. van der Zwaard BC, Stein CE, Bootsma JE, van Geffen HJ, Douw CM, Keijzers CJ. Fewer patients undergo surgery when adding a comprehensive geriatric assessment in older patients with a hip fracture. Arch Orthop Trauma Surg 2020; 140: 487–92.

35. Choosing wisely. Critical Care Societies Collaborative – Critical Care. 2021; https://www.choosingwisely.org/clinician-lists/critical-care-societies-collaborative-life-support-for-patients-at-high-risk-for-death-or-severely-impaired-function-recovery/. (23 July 2021, date last accessed).

36. Kleinpell R, Sessler CN, Wiececk C, Moss M. Choosing wisely in critical care: results of a national survey from the critical care societies collaborative. Crit Care Med 2019; 47: 331–6.

37. Légaré F, Adekpédjrou R, Stacey D et al. Interventions for increasing the use of shared decision making by healthcare professionals. Cochrane Database Syst Rev 2018; 2018: 1–385.

38. Joseph-Williams N, Lloyd A, Edwards A et al. Implementing shared decision making in the NHS: lessons from the MAGIC programme. BMJ 2017; 357: j1744. https://doi.org/10.1136/bmj.j1744.

39. Elwyn G, Frosch DL, Koblin S. Implementing shared decision-making: consider all the consequences. Implement Sci 2015; 11: 1–10.

40. De Mil S, Subbenrouch F, Balm R, Ubink D. Systematic review of shared decision-making in surgery. Br J Surg 2018; 105: 1721–30.

41. Borges FK, Bhandari M, Guerra-Farfan E et al. Accelerated surgery versus standard care in HIP fracture (HIP ATTACK): an international, randomised, controlled trial. Lancet 2020; 395: 698–708.

42. Leer-Salvesen S, Engesæter LB, Dybvik E, Furnes O, Kristensen TB, Gjertsen J-E. Does time from fracture to surgery affect mortality and intraoperative medical complications for hip fracture patients? An observational study of 73 557 patients reported to the Norwegian hip fracture register. Bone Joint J 2019; 101-B: 1129–37.

43. Greve K, Modig K, Talbäck M, Bartha E, Hedström M. No association between waiting time to surgery and mortality for healthier patients with hip fracture: a nationwide Swedish cohort of 59,675 patients. Acta Orthop 2020; 91: 396–400.

44. Narula S, Lawless A, D’Alessandro P, Jones CW, Yates P, Seymour H. Clinical frailty scale is a good predictor of mortality after proximal femur fracture: a cohort study of 30-day and one-year mortality. Bone Jt Open 2020; 1: 443–9.

45. Elwyn G, Lloyd A, Joseph-Williams N et al. Option grids: shared decision making made easier. Patient Educ Couns 2013; 90: 207–12.

46. Sprok I, Meijers MC, Heins MJ et al. Availability and effectiveness of decision aids for supporting shared decision making in patients with advanced colorectal and lung cancer: results from a systematic review. Eur J Cancer Care 2019; 28: e13079. https://doi.org/10.1111/ecc.13079.

47. van Weert JC, Van Munster BC, Sanders R, Spijker R, Hoof L, Jansen J. Decision aids to help older people make health decisions: a systematic review and meta-analysis. BMC Med Inform Decis Mak 2016; 16: 1–20.

48. Hargraves IG, Fournier AK, Montori VM, Bierman AS. Generalized shared decision making approaches and patient problems. Adapting AHRQ’s SHARE approach for purposeful SDM. Patient Educ Couns 2020; 103: 2192–9.

49. Sprok I, Burgers JS, Schellevis FG, van Vliet LM, Korevaa JC. The availability and effectiveness of tools supporting shared decision making in metastatic breast cancer care: a review. BMC Palliat Care 2018; 17: 1–8.

50. Pieterse AH, Henselmaai de Haes HC, Koning CC, Geijser ED, Smets EM. Shared decision making: prostate cancer patients’ appraisal of treatment alternatives and oncologists’ eliciting and responding behavior, an explorative study. Patient Educ Couns 2011; 85: e251–9.

51. Loggers SA, Willems HC, Van Balen R et al. Evaluation of quality of life after nonoperative or operative management of proximal femoral fractures in frail institutionalized patients: the FRAIL-HIP study. JAMA Surg 2022; 157: 424–34.

Received 6 October 2021; editorial decision 7 June 2022