**Barriers and facilitators to shared decision-making for frail and elderly patients within the perioperative setting:**

**A scoping review protocol**

Amyn Vogel1, [Amyn.vogel@fu-berlin.de](mailto:Amyn.vogel@fu-berlin.de)

Camille Guinemer2, [Camille.guinemer@bih-charite.de](mailto:Camille.guinemer@bih-charite.de)

Daniel Fürstenau2,3, [dfu.digi@cbs.dk](mailto:dfu.digi@cbs.dk)

1 Freie Universität Berlin, School of Business & Economics

2Charité - Universitätsmedizin Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany

3Copenhagen Business School, Department of Digitalization

**Correspondance:**

Amyn Vogel, PhD Candidate

Garystraße 21

14195 Berlin

Phone: +49(0) 176 973 962 70

E-Mail: [amyn.vogel@fu-berlin.de](mailto:amyn.vogel@fu-berlin.de)

# Abstract

**BACKGROUND**: Shared decision-making (SDM) is an approach to enable patient-centeredness and tailored treatment pathways, within the perioperative setting. This could benefit frail and elderly patients, who suffer from multiple health issues and increased surgical vulnerability and postoperative complications, requiring individualized healthcare. However, little is known about facilitators and barriers to implementing SDM into clinical practice for the specific requirements of frail and elderly patients.

The objective is to gain a comprehensive overview of original studies on facilitators and barriers to SDM perceived by clinical healthcare personnel and patients to SDM within the perioperative setting. Our aim is twofold: First, we aim at collecting and understanding facilitators and barriers regarding SDM addressed by elderly and frail patients and clinical healthcare personnel. Second, we aim at understanding the underlying approaches and methods employed in respective studies.

**METHODS**: We conduct a scoping literature review, based on the databases MEDLINE, Embase, CINAHL, and Web of Science and report results with PRISMA-ScR. We follow the methodological framework developed by Arksey and O'Malley and the recommendations by the Joanna Briggs Institute. Restrictions relate to language: only English, French, and German language articles are considered. We developed a data charting template to organize the data extraction. We decided to conduct a scoping review to better understand key concepts and the implementation of SDM and to identify the evidence for barriers and facilitators of SDM as perceived by patients and clinical healthcare personnel.

**DISCUSSION**: To our knowledge, this is the first scoping review to address SDM for elderly and frail patients within the perioperative setting. A preliminary search has been conducted. After removing all duplicates, we found 984 results. We assessed that a sufficient body of literature exists to conduct this scoping review.

The scoping review will provide a map of the research on facilitators and barriers perceived by clinical healthcare personnel and patients regarding SDM for perioperative care. The results are meant to support researchers and clinical healthcare personnel, in determining further research initiatives and the implementation of SDM within perioperative care for elderly and frail patients. Research gaps and future directions will be addressed in the forthcoming review.

Keywords: Shared decision-making, perioperative care, elderly and frail patients, clinical personnel

Registration: <https://osf.io/8fjnb/>

# 1. Background

As a practice of organizing joint decisions between healthcare professionals and patients, shared decision-making (SDM) is considered to be an approach to promoting patient involvement and patient-centeredness in healthcare treatment and should improve clinical practice [1–7]. SDM is also at the center of many debates on patient-centeredness and tailored clinical pathways in healthcare for specific patient groups. Recent studies indicate that the frailty syndrome, concerning elderly patients, aggravates the health condition and treatment while demanding alternative treatment pathways [8,9]. Frail patients are considered vulnerable, and their care requires an individualized approach and tailoring [10–14].

The implementation of SDM for elderly and frail patients within the perioperative setting is at the heart of this scoping review. In light of this, facilitators and barriers to implementing SDM for clinical practice for the specific requirements of frail and elderly patients are to be reviewed.

## 1.1 Facilitators and barriers to SDM in hospital settings

The literature on SDM suggests that SDM should become integrated into the clinical setting [2–4,15] in particular for perioperative measures and surgery-related decisions [16–19]. Our understanding of SDM is guided by the four pillars set forth by Charles et al. [2,3] and Coulters’ approach [20]. The requirements for SDM concern the participation of at least one patient and one healthcare personnel (I), that information from both is being shared (II), and readiness for consensus employed (III), to achieve an agreement on the treatment to which the concerned parties adhere (IV) [2,3]. This involves the acknowledgment of the legitimacy of both, patient requirements and needs and healthcare personnel’s understanding and assessment of the patients’ health condition and required treatment options [20].

For this research, we build on previous reviews [21–24]. These systematic reviews discuss facilitators and barriers to the implementation of SDM. The review by Joseph-Williams et al. [21] concerns patient perceptions, whereby facilitators and barriers were inductively derived and assigned to the stakeholders healthcare system and organizational factors, decision-making interaction factors, and patient factors. The review by Gravel et al. [24] concerns health professionals’ perceptions, whereby facilitators and barriers were assigned to the categories of knowledge, attitudes, and behavior.

We screened these systematic reviews addressing facilitators and barriers for SDM within hospital settings [21–24] and summarized the results into five categories and further subcategories. We further summarized the stakeholders into four groups: Patients, healthcare professionals, decision-making interaction, and healthcare system and organization (summarized version see table 1; full table see appendix 1: Collated Categories and Subcategories of Prior Reviews).

**Table 1: Categories, Subcategories, and Stakeholders**

|  |  |  |
| --- | --- | --- |
| **Category** | **Subcategories** | **Main stakeholders** |
| Attitude and Behavior | Personal characteristics of patients and healthcare professionals  Motivation and objectives  Emotion  Perception of social role  Social influences  Attitude towards sharing information and decision  Perceived needs and expectations | Patients  Healthcare professional |
| Trust and Power | Power (im)balance in the patient-clinician relationship  Perceived influence on decision-making encounter | Patients  Healthcare professional  Decision-making interaction |
| Knowledge and Communication | Knowledge about SDM  Beliefs about and skills for conducting SDM  Knowledge about personal values and preferences  Decision characteristics  Communication style and terminology employed | Patients  Healthcare professional  Decision-making interaction  Healthcare system and organization |
| Health and Age | Memory and attention  Health condition | Patients |
| Treatment Organization and Risk | Characteristics of healthcare setting (i.e., conditions, privacy)  Resources (i.e., time)  Workflow  Continuity of care  Reinforcement and financial incentives | Healthcare professional  Healthcare system and organization |

Regarding the categories and subcategories of table 1, we view the issues concerning trust and power, knowledge and communication, and health and age as particularly valuable for our purpose. Individual patient and clinician characteristics, in particular regarding trust and power imbalances are at the center of barriers and facilitators for SDM [21–24]. Knowledge and perceived lack of decisional power constitute the major factors relating to patients [21,23]. Key barrier issues concern patients’ health, in that they are overstrained (in the cognitive, physical, and psychological sense) by SDM processes, making it difficult to participate actively [21]. Health and age-related factors, relating to the memory and attention of patients are of complementary value and relevant for this scoping review [22]. Further, lack of resources, support, and time are considered critical for SDM [21,23].

## 1.2 Scope and purpose of this scoping review

These systematic reviews [21-24] provide a substantial base and initial overview of facilitators and barriers to SDM. However, these are not specific to the scope of this review: SDM for elderly and frail patients in the setting of perioperative decision-making. The purpose of this research is to review original studies on facilitators and barriers to SDM perceived by clinical healthcare personnel and patients to SDM within the perioperative setting for frail and elderly patients. Our scoping review differs from previous systematic reviews in that we exclusively consider the perioperative setting, therefore concerning surgery-related decision-making. Further, we consider frail patients, which implies conceptual overlaps to multiple chronic diseases but differs in symptoms, treatment, and impact on patient health, notably increased vulnerability [25,26]. Lastly, we conduct a qualitative analysis of the facilitators and barriers for SDM and the employed methodological approaches. The aim is to map the content and the nature of the facilitators and barriers and the underlying methodological approaches.

## 1.3 Frailty in elderly patients

Frailty is defined as a “clinically recognizable state of increased vulnerability”[27] affecting middle-aged and old patients [28–30]. A recent European survey on 60,816 patients aged ≥ 50 found the frail and pre-frailty status to be 7.7 and 42.9%, respectively [31]. There is an age-related decline in physical abilities and functions in a range of physiological systems. The ability to cope with daily or acute physical aggravation and pain is thereby impaired [27,28,30]. Fried et al. define frailty according to the fulfillment of three out of five criteria: Unintentional weight loss, low grip strength, low energy, slow walking, and low physical activity [30]. In addition, meeting two of these criteria is considered pre-frail. This group of people faces a high risk of progression to frailty.

Although these criteria are widely accepted and applied [28,32,33], the methodological assessment of the frailty status in patients remains partly vague, especially when it comes to the assessment of the pre-frailty status. One issue concerns the distinction between frailty, disability, and multimorbidity - these coexist and interact, but need to be evaluated and assessed separately [34]. Moreover, these approaches are based on questionnaires with the concerned patients and physiological examinations. While questionnaires are considered subjective, physiological examinations may not include kinematic aspects, although these are relevant for the identification of frailty. Walston et al. state that a “frequent lack of agreement between frailty instruments has slowed broad implementation of these tools” [33]. With this in mind, we decided to conduct this scoping review on frail and elderly patients.

In the clinical setting, such patients are particularly at risk of postoperative complications [35,36]. Studies indicate increased mortality, prolonged length of stay functional decline, and lower quality of life after surgery [37,38]. A literature review on the relationship between frailty and delirium of 20 articles summarized a significant association between frailty and postoperative delirium [39]. This illustrates the complexity and risks of clinical interventions for frail patients, representing a major challenge to patient health and healthcare costs [40]. It is possible to delay and possibly reverse frailty, provided that individual preparatory measures are implemented [41]. Patient-centeredness constitutes a key concept to address this. The indication and subsequently the therapeutic recommendation take possible postoperative complications into account and concerns the involvement of other disciplines, such as surgeons, anesthesiologists, geriatricians, physiotherapists as well as the patients. Thereby, SDM, as a practice of organizing joint decisions between healthcare professionals and patients is considered to be an approach to promoting patient involvement and patient-centeredness in healthcare treatment and should improve clinical practice [1–3,5–7].

## 1.4 SDM for perioperative decision-making of elective surgery

The decision-making between patients and clinical healthcare personnel in the perioperative setting assumes a distinct role within the landscape of medical decisions [2–4,6]. It is therefore not equivalent to other settings, such as SDM with primary care physicians, and must be explored independently.

SDM requires an element of choice and therefore does not concern all perioperative decisions, particularly not emergency decisions. The primary condition of elective surgery is that it is subject to choice, whereby the choice of the time of the surgery is a common characteristic of the elective element [42]. Further, it might entail a range of different treatment options or perioperative measures, to individually prepare for surgery. This aspect will be addressed in this scoping review.

As frail patients are at risk of postoperative complications, implying a complex and uncertain nature of the patients’ condition and the impact of surgery, patient participation in perioperative decision-making for elective surgery is critical, for defining patient-tailored treatment pathways [37,38]. Especially in these cases, it is important to actively enable participation in decision-making processes, instead of assuming patient needs [4].

# 2. Method

In this review, we follow the methodological framework developed by Arksey and O'Malley [43] and the recommendations by the Joanna Briggs Institute [44]. The following stages are employed here: (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data, and (5) collating, summarizing, and reporting the result.

We also searched for reviews with the same scope that have been already conducted or are being planned. For this, we also searched registered reviews at the Open Science Framework (osf.io). Our protocol was drafted using the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping Reviews (see Appendix 2: PRISMA-ScR). The review protocol was pre-registered on the Open Science Framework (https://osf.io/8fjnb/).

AV is an organization and sociologic doctoral researcher, specializing in the field of medical sociology and conducting conceptual and empirical research on shared decision-making in the clinical setting. CG is a researcher with a background in health economics, with a focus on a healthcare organization. DF is a senior researcher working in the field of medical informatics and healthcare organization and innovation.

## 2.1 Stage 1: Identifying the research question

This scoping review aims to identify perceived facilitators and barriers to shared decision-making within the perioperative setting by elderly and frail patients and clinical healthcare personnel. Further, we aim at reviewing the methodological approaches employed within the selected studies. For this, the following research questions are formulated: (RQ1) *What are facilitators and barriers perceived by older and frail patients and clinicians for shared decision-making in the perioperative setting?* (RQ2) *What are the conceptual approaches and methods used in analyzing facilitators and barriers to the introduction of shared decision-making in the perioperative setting as perceived by older and frail patients and clinicians?*

## 2.2 Stage 2: Identifying relevant studies

This stage aims to identify studies that are appropriate to the research questions. Studies are to be selected that concern original research on the implementation, facilitators, and barriers to SDM by elderly and frail patients and clinical healthcare personnel within the perioperative setting. To achieve this, we have established a defined process with criteria that apply to both the initial search process and the selection of the articles retrieved. Several databases were included for this scoping review: MEDLINE, CINAHL, Embase, and Web of Science (see Appendix 3: Full search query). Restrictions on the initial search process relate to language: only English, French, and German language articles were selected. We record each stage using the PRISMA flow diagram [45].

The search terms are broadly defined to have a large initial selection of articles. Following the search term identification strategy by Phelps et al. [46] we first identified three search term subjects: shared decision-making, the field of SDM employment, and patient group (see table 2). Before the search, the list of search terms and potential databases were independently discussed with several specialists in anesthesiology and intensive care medicine, experienced in SDM to avoid crucial omissions.

|  |  |
| --- | --- |
| **Table 2. Overview of the search terms** |  |
| Topic | Search terms |
| Shared decision-making |  |
|  | shared decision making OR |
|  | shared decision-making OR |
|  | sdm |
|  |  |
| AND |  |
|  |  |
| Field of SDM employment |  |
|  | perioperative OR |
|  | peri-operative OR |
|  | preoperative OR |
|  | pre-operative OR |
|  | surgical OR |
|  | surgery OR |
|  | clinic |
|  |  |
| AND |  |
|  |  |
| Patient group |  |
|  | frailty OR |
|  | frail OR |
|  | elderly OR |
|  | elder OR |
|  | older OR |
|  | aged |

The formatting of the search strings was adapted to the requirements of the databases. These search strings were applied to the title and abstract. The articles found will be retrieved and imported into a reference management software, for which we chose Citavi version 6 (Swiss Academic Software). To test the search strings and analysis process we piloted this procedure on a random selection of 100 articles and screened the titles and abstracts.

## 2.3 Stage 3: Study selection (SPIDER)

Following the initial sample of articles, it is necessary to define distinct inclusion and exclusion criteria. Included articles must meet both the research question and the criteria described in 1.2 -1.4. To meet this requirement, we draw on the SPIDER [47] categories in the selection of articles (see table 3).

**Table 3: Inclusion and exclusion criteria**

|  |  |  |
| --- | --- | --- |
| **SPIDER** | **Inclusion Criteria** | **Exclusion Criteria** |
| Sample | Elderly patients (≥65) | Evidence on older patients (≥65) cannot be isolated |
|  | Frail patients |  |
|  | Clinical healthcare personnel |  |
| Phenomenon of interest | Original studies on the implementation of SDM within the perioperative setting | SDM is not the primary subject  Only reporting on SDM implementation specifications (i.e., decision-making support tools)  Only reporting on the health effects of SDM |
|  |  |  |
| Design | Studies reporting facilitators and barriers to SDM in the perioperative setting  Peer-reviewed journals | No proper description of the procedure (i.e., number of patients or physicians; characteristics of patients; specialty/ perioperative setting...)  Editorials  Non-peer reviewed studies  Reviews |
| Evaluation | Patients’ and clinical healthcare personnel’s perceptions of facilitators and barriers | Only effectiveness of SDM implementation  Only health-related effects of SDM |
| Research Type | Qualitative, quantitative, or mixed-methods |  |

For the selection of articles, we follow Levac et al. [48]. AV and CG will independently perform the full article analysis and individually decide whether to select the articles or not. Each decision will be disclosed only subsequently to avoid bias among the researchers. If there are disagreements, DF will be involved in the decision process to render the final decision.

## 2.4 Stage 4: Data charting process / Data extraction

We developed a data charting template to organize the data extraction, based on SPIDER [47], added by article information. The relevant criteria of all articles meeting the search strategy are to be organized accordingly.

We further added the columns: Stakeholder, barriers/facilitators, category, subcategory, and setting/contextual information (see table 4). These are supplemented for extracting the data relevant to the research questions.

|  |  |
| --- | --- |
| **Table 4: Data extraction template** | |
| Article information | Formal information on the articles, including authors, year of publication, and country |
| Sample | Number of studied population and characteristics |
| Phenomenon of interest | The objective of the empirical study |
| Design | Description of study, methods, and procedures |
| Evaluation | Reporting items |
| Research Type | Employed research types (qualitative, quantitative, or mixed-methods) |
| Setting and contextual information | Information on SDM implementation, time of the study (i.e., before SDM or post SDM), patient status at the time of the study (i.e., preoperative or postoperative), and prior experiences with SDM of patients and clinical healthcare personnel |
| Stakeholder | Concerned stakeholders: Patients, clinical healthcare personnel, decision-making interaction, and healthcare system and organization |
| Barrier/Facilitator | Indication if category and subcategories are classified as barriers or facilitators for SDM |
| Category | Extracted facilitator or barrier categories (i.e., Power and trust), inductively developed, informed by prior reviews [21–24] |
| Subcategory | Extracted facilitators or barriers (i.e., Perceived influence on the decision-making process), inductively developed, informed by prior reviews [21–24] |

AV and CG will initially independently perform the data extraction and charting process to pilot the taxonomy and extraction table. This is based on a random selection of articles to assess the conformance and consistency of the extraction table. Following this independent piloting, the results will be compared. If necessary, the framework and extraction table will be adjusted. This modification requires the consensus of AV and CG. If no consensus is reached, DF will be involved.

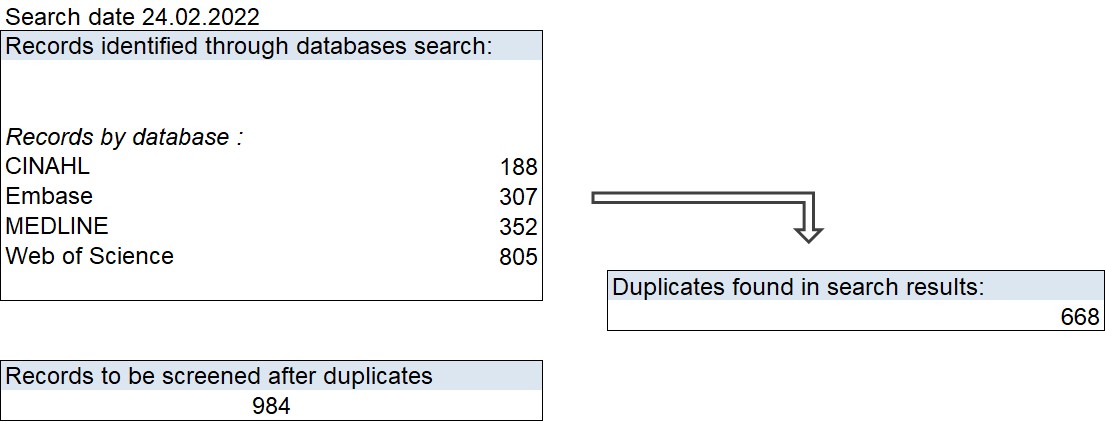
## 2.5 Stage 5: Collating, summarizing, and reporting the results

In summarizing the results, this section will present the results narratively concerning the research questions. This summary will include the characteristics of the selected studies and will be based on the extraction table of stage 4. This will provide a narrative and qualitative comparison of the selected studies regarding the setting of the studies, identified barriers and facilitators and the methodological approaches that will be followed, and existing research gaps.

For this narrative synthesis, we will group the evidence by facilitators and barriers and by patient characteristics. This results in a narrative summary of the evidence, responding to each research question. It is aimed at providing a comprehensive information base for healthcare researchers and practitioners.

# 3. Discussion

**Preliminary findings**

To pilot the search strategy, inclusion and exclusion criteria, and the taxonomy, the query was performed. The search was carried out in February 2022. The databases searched were CINAHL, MEDLINE, Embase, and Web of Science. Initially, 1,652 articles were found that matched the criteria, leading to 984 without duplicates (see figure 1). We completed the pilot screening for this research project. We assessed that a sufficient body of literature matches our criteria to conduct this scoping review. The remaining phases will be carried out in spring of 2022.

**Limitations**

Some limitations can be identified. First, in this scoping review we do not restrict on the employed research type, potentially leading to heterogeneous methodological approaches. This might entail limitations for synthesizing the evidence and drawing general conclusions from this review. Second, the search terms and study choices described in this protocol were made based on the research teams’ expertise in patient participation, healthcare, intensive care medicine, evidence research, and the existing literature. Accordingly, this may represent a bias, which needs to be considered in the course of examining the results of the scoping review.

**Conclusions**

To our knowledge, this is the first scoping review to address shared decision-making for elderly and frail patients within the perioperative setting.

We will outline the landscape on facilitators and barriers to SDM perceived by clinical healthcare personnel and patients to SDM within the perioperative setting to consolidate key findings. This scoping review is aimed to enable healthcare practitioners within the clinical setting to base their SDM strategies and methods for elderly and frail patients on solid empirical evidence. Likewise, this study provides an understanding of the variation in patient needs about SDM and a basis for further empirical research. This scoping review is part of an empirical research project on barriers and facilitators for elderly and frail patients within the perioperative setting. The results are meant to support and inform this research initiative.

We will also identify the methodological approaches employed, to provide a basis for future research. This will allow identifying not only knowledge gaps but also methodological gaps to support future studies in their methodological decision making.

# Ethics and dissemination

This scoping review does not require ethical approval since it draws exclusively on articles that have already been published. Any alterations, deviating from this protocol, will be reported in the subsequent scoping review publication. Furthermore, the results will be communicated in the research field, for example through conference participation.

**Abbreviations**

SDM: Shared decision-making

**Ethics approval and consent to participate**

Not applicable.

**Consent for publication**

Not applicable.

**Availability of data and materials**

Data sharing does not apply to this article as no datasets were generated or analyzed during the current study.

**Competing interests**

The authors declare that they have no competing interests.

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**Authors’ contributions**

DF and AV conceptualized the study. AV outlined the research proposal, aim, and questions. AV and CG will perform the review. AV and CG developed the extraction framework. AV drafted the protocol. All authors contributed to the design of the protocol, the aim of the study, research questions, and search strategy. All authors edited and approved the final version of the manuscript.

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