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**A Qualitative Study**

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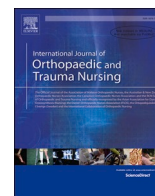
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# Older patients' experiences of shared decision-making when choosing treatment for their distal radius fracture; A qualitative study

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## ABSTRACT

**Objective:** This study aims to understand how older patients experience shared decision-making (SDM) when making decisions about the treatment of their distal radius fracture (DRF).

**Methods:** An exploratory qualitative study was designed using individual in-person and telephone interviews. Twelve DRF patients were recruited during their first follow-up visit to a Danish outpatient clinic, with ten of them participating in interviews. Data was analysed using content analysis.

**Results:** Three themes emerged: 1) An acute situation, 2) Considerations influencing the treatment choice and 3) The treatment decision.

**Conclusion:** In conclusion, our study represents a pioneering effort in reporting the use of Shared Decision Making in fracture management. The sudden onset of DRF proved to be highly distressing for the patients. Providing SDM material to patients in the Emergency department (ED) aimed to empower them and prepare them for their subsequent outpatient clinic visit. However, its effectiveness varied. The demeanour of doctors played a crucial role in shaping patient experiences.

## 1. Introduction

A distal radius fracture (DRF) is a common upper extremity injury and is the most common fracture in women >60 years old (Quadbauer et al., 2020). The most common cause of this injury in older people is low-energy accidents, such as falling from own height (Quadbauer et al., 2020). Over a 22-year period, the usage of surgical treatment for dislocated DRF has increased markedly, even among the group of older (aged 65 or older) patients (Viberg et al., 2023).

The advantage of surgery is the ability to restore the angulation of the wrist and reposition the fractured bone into anatomic conditions. The stability created by a locking plate allows the patient to start rehabilitation after two weeks, but three months after treatment with either surgery or casting, clinical outcomes such as range of motion, grip strength, quality of life and reoperation rate are all comparable (Oldrini et al., 2022). When patients self-reported their upper-extremity disability and symptoms after DRF using the Disabilities of the Arm,

Shoulder, and Hand (DASH) outcome instrument, their scores were statistically better three months after surgery; however, no clinical differences were found 12 months after treatment (Oldrini et al., 2022). Overall, these findings suggest that operative treatment may be more suitable for individuals with higher functional demands who require a faster recovery, while a conservative approach may benefit those with lower demands (Oldrini et al., 2022). This also applies to patients aged 65 or older (Hassellund et al., 2021).

Casting is a treatment option with complications limited to fracture dislocation and poor hygiene. Perioperative complications following surgery includes a risk of infection, nerve damage, extension, tendon rupture and poor wound healing (Hassellund et al., 2021). Furthermore, the locking plate needs removal in 9 % of the patients, due to soft tissue pain (Selles et al., 2021). The equality of outcome after both treatment options, suggests that a more personal approach to the treatment may be appropriate.

Fracturing the wrist is highly debilitating for older patients (Collis

**Abbreviations:** DRF, Distal radius fracture; DASH, The Disabilities of the Arm, Shoulder, and Hand; SDM, Shared Decision Making; ED, Emergency department.

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et al., 2022), with their primary concern being the restoration of function (Moos et al., 2024; Nasser et al., 2018). Additionally, older patients with DRF seem to prioritize factors associated with recovery over the final outcome (Nasser et al., 2018). Moreover, older DRF patients prefer a shared decision-making (SDM) approach when determining treatment options (Huetteman et al., 2018). While they place strong trust in the doctor's technical expertise, they also wish to be involved in decisions affecting outcomes or functionality (Huetteman et al., 2018).

From the literature, we know that involvement in the SDM process can lead to high treatment satisfaction among patients (Crijns et al., 2023). Nevertheless, barriers like ineffective communication, inappropriate language choices, and a lack of empathy from healthcare providers have been identified when using SDM with chronically ill patients. (Pel-Littel et al., 2021).

In 2022, a Department of Orthopaedic Surgery and Traumatology in Denmark introduced SDM as part of their DRF guideline for patients aged 65 or older. To our knowledge, no previous study has reported the use of SDM in fracture treatment, nor older patients' experiences with SDM in acute situations.

Therefore, this study aims to understand how older patients experience shared decision-making when making decisions about the treatment of their distal radius fracture.

## 2. Method

### 2.1. Design

An exploratory, qualitative study using individual interviews was designed. This study is reported using the CASP checklist (Public Health Resource Unit, 2003).

### 2.2. Setting

In Denmark, the *Centre for Shared Decision Making* facilitated the process of creating a Decision Aid. After two days of training and certification by the *Centre*, focusing on the SDM process (Steffensen et al., 2018), the team – which included a traumatology surgeon, a hand surgeon, a SDM-responsible surgeon - conducted a literature review and a patient workshop with patients previously treated for DRF. In collaboration with a consultant from the *Centre*, a decision aid was developed according to IPDAS, pilot-tested, redesigned and introduced in the outpatient clinic in November 2022. The DRF decision aid comprises cards outlining the advantages and disadvantages of both operative and non-operative treatments, along with a card explaining the timeline of both treatments and a card illustrating complication risks for both treatments. The decision aid consists of both text and pictograms, and clarifies that there is a choice with equal clinical outcome. During the outpatient clinic visit, both treatment options are reviewed and discussed, patient preferences are explored and acknowledged, and patients are encouraged to participate in a shared decision-making process regarding operative or non-operative DRF treatment.

Patients entering the Emergency Department (ED) with a dislocated DRF have their fracture reduced and a cast is applied to stabilize the fracture. If the fracture post-reduction is in an acceptable position defined as maximum 12° dorsal angulation from the anatomical position and the patient is 65 years or old, they are offered SDM at their visit in the outpatient clinic five to seven days later. Before leaving the ED, older patients are provided with an SDM envelope containing the DRF Decision Aid to help them prepare for the upcoming visit and are asked to bring the Decision Aid with them for use during their outpatient clinic visit.

The non-operative treatment (cast) will last for five weeks. When choosing the operative DRF treatment, the surgery will be performed between five and fourteen days after the injury and the post-surgery regime is casting for two weeks and orthosis for an additional two weeks.

Patients may not be seen by the same doctor who treated them in the

ED for their SDM consultation at their first outpatient clinic visit.

### 2.3. Sampling and informants

A convenient purposive sampling approach was used to ensure a sample of nuanced patient perspectives (Coyne, 1997).

We planned to interview 10–15 patients with dislocated DRF or until data saturation (Malterud et al., 2016). To get a variety of perspectives we hoped to recruit both men and women, above 65 years old and age preferably spread over several decades.

The patients were recruited by the first author (LMN) when they entered the outpatient clinic for their first follow-up and before their conversation with the doctor. When the first author approached the patients, they were informed that the interview would be regarding their conversation with the doctor and not specifically about the SDM, as to not guide them in a specific direction.

Twelve patients were recruited, however, two patients declined after their follow-up visit as they felt too overwhelmed. All the patients were women aged between 57 and 87 years old. For more details on patient and treatment characteristics, as well as interview methods, please see Table 1.

### 2.4. Interview method

Data was collected through ten semi-structured interviews (Leavy, 2020). Initially, all patients were given the option of in-person interviews right after the consultation. If the patients declined, they were offered a telephone interview within the first days ensuring that the experience would be fresh in their memory. Three patients wanted to participate in an in-person interview straight after the follow-up, and seven patients preferred to be interviewed by telephone (see Table 1). If the patients would like to have their relatives present during the interview that was also possible. Two relatives each accompanied a patient.

The interviews were conducted by the first author (LMN). LMN was not involved in the choice of treatment of any patients. LMN participated in the doctors' training on SDM and observed an SDM consultation before conducting this study, to gain a deeper understanding of SDM.

An interview guide was developed based on the doctors' training on SDM, experiences from the SDM consultation and the content of the decision aid. The questions aimed to elucidate patients' comprehension of the material, their perception of the doctor and their experience of participating in decision-making (Table 2).

All interviews were audio-recorded. On average, the interviews were 13 min long.

### 2.5. Data processing and analysis

All interviews were transcribed by LMN using a secure computer at the hospital.

The interviews were analysed using Erlingsson et al.'s content

**Table 1**  
Characteristics of the patients, DRF treatment and interview methods.

ID	Sex	Age	Treatment	AO classification <sup>a</sup>	Interviews methods
PT_01	Woman	67	Surgery	C3	By telephone
PT_02	Woman	73	Cast	B2	By telephone
PT_03	Woman	82	Surgery	C2	By telephone
PT_04	Woman	57	Cast	B2	By telephone
PT_05	Woman	69	Cast	C3	In-person
PT_06	Woman	77	Cast	B2	By telephone
PT_07	Woman	75	Cast	B2	By telephone
PT_08	Woman	76	Surgery	C3	In-person
PT_09	Woman	87	Cast	B2	In-person
PT_10	Woman	74	Cast	C2	By telephone

<sup>a</sup> (Kellam et al., 2018).

**Table 2**  
Example from the interview guide.

1.	What was the purpose of your visit to the outpatient clinic today?
2.	How did you feel about receiving the material/decision helper in the emergency room? - Did you review the decision helper prior to today's appointment? - How did you understand the use of the material? - How did you feel about reviewing written material with the doctor?
3.	What are your thoughts on the information provided in the decision helper?
4.	Did you finalize your treatment decision before today's appointment?
5.	How did you feel to participate in the decision-making process regarding your treatment?
6.	How did you experience the conversation with the doctor?
7.	How did your conversation with the doctor influence your treatment decision?
8.	Is there any additional information you believe is crucial for us to address?
9.	What treatment option did you choose and what were the reasons behind your choice?

analysis (2017). First, the interviews were read and then re-read to get an overall understanding of the interviews. The interviews were then divided into smaller parts, meaning units. These meaning units were then condensed and given a code. The codes were used to develop categories and then themes (Erlingsson and Brysiewicz, 2017). Two researchers without clinical attachment conducted the analysis; LMN, a novice in the field of qualitative studies, and CA, an experienced qualitative researcher and registered nurse. Please, see an example of the analysis in Table 3.

2.6. Ethics

In compliance with the World Medical Association Helsinki Declaration, patients were informed orally and in writing, about the project in connection with their first follow-up in the outpatient clinic. Patients were informed that the interviews were confidential, that participation was voluntary and that they could withdraw at any time without consequences. They signed a statement of consent and were given a copy before going home from the follow-up visit. The study was registered with the Record of Data Process of the Registry of Southern Denmark (Journal no. 24/28,738). Data was stored on a secure server only available to the researchers. According to Danish legislation, no further approval was needed.

3. Results

When the interviews were analysed three themes emerged. These themes were derived from eight sub-themes (see Table 4).

3.1. An acute situation

Patients described fracturing their wrist, as a brief yet considerable interruption to their everyday lives. After the fall, they spent a few hours in the ED before being discharged into an unfamiliar and unprepared situation.

3.1.1. Timing of the information

Patients elaborated that they felt very confused upon entering the ED and were given a large amount of information in a short period.

**Table 3**  
Example from the analysis.

Meaning unit	Condensed meaning units	Code	Category	Theme
"I am not a doctor or a medical professional or a healthcare professional in any way ..."	I am not a medical professional	Lack of fracture/treatment knowledge	The patient's not feeling knowledgeable	Shared responsibility and decision-making

**Table 4**  
Themes and sub-themes.

Themes	Sub-themes
An acute situation	Timing of the information The value of a decision aid
Considerations influencing the treatment choice	Advantages, disadvantages and risks Personal factors
The treatment decision	Reasons for choosing surgery or cast Determined or undetermined in advance The doctor's demeanour Shared responsibility and decision-making

"I must admit I was deeply upset when, I broke my arm for the first time in my life. In that moment, she could have told me anything and I don't think I would have fully understood." (PT\_04)

"There was a lot of information that day in the emergency room" (PT\_08)

Patients found it difficult to comprehend the information on shared decision-making. However, further explanations from health care professionals in the ED, along with additional time to review the material at home, enhanced their understanding of shared decision-making.

"I was confused that night, but the next day I had nothing to do but sit and read it [the decision aid]" (PT\_05)

"... [if only] there had been 5 minutes to quietly explain what the various papers were." (PT\_04)

Experiencing an acute DRF fracture along with a three to 4-h stay in the ED, affects individuals both mentally and physically. The volume of information regarding symptoms, pain relief, follow up care and shared decision-making can be overwhelming. However, the week leading up to the follow-up visit provided valuable time for patients to prepare.

3.1.2. The value of a decision aid

Patients expressed that the decision aid helped them feel better prepared:

"I think it [the decision aid] is well made and looks good. It provides a good overview, with all the different colours and highlights the advantages and the disadvantages of surgery and so on" (PT\_06)

However, not all patients had opened the envelope or understood the purpose of the decision aid, even after reading the accompanying letter. Since they did not receive further explanation in the ED, other than being instructed to bring the decision aid to their first outpatient clinic visit, some found it unhelpful.

"Well, there isn't very much that tells me anything" (PT\_07)

"I don't know how much it actually helped me. I am not sure how much wiser I was after bringing it [decision aid] home" (PT\_01)

The decision aid was intended to enhance patients' readiness for shared decision-making consultations and to support their treatment decisions. While patients had the option to take the decision aid home before their outpatient visit to help them feel more prepared, not all perceived it this way. Some patients might have benefited more from receiving the decision aid during their outpatient clinic visit rather than

in the ED.

### 3.2. Considerations influencing the treatment choice

When choosing their preferred treatment, patients considered various factors, including both treatment-specific and personal considerations.

#### 3.2.1. Advantages, disadvantages and risk

Some patients expressed complete indifference towards the advantages and disadvantages of the various treatments.

“So I didn’t care if the treatment would take two or three weeks longer than the other treatment” (PT\_01)

“But we really didn’t care about that .... What the advantages and disadvantages were. We just wanted the operation .... to speed up the healing” (PT\_08 and her daughter)

Conversely, some patients were influenced by the risk of complications when deciding on a treatment.

“When you see that the risk of complications requiring surgery is much higher compared to cast treatment, you might arbitrarily decide - I choose the easy solution [cast treatment]” (PT\_09)

Thus, the treatment-specific reasons behind the decisions varied.

#### 3.2.2. Personal factors

Almost every patient emphasised the importance of being active with their hands and expressed how essential it was for them to maintain their lifestyle.

“So, for me, it’s not important how my arm looks. What matters is that I can knit because that’s how I survive. If you were in the labour market, it would be a different situation.” (PT\_04)

“I live alone and have to manage everything myself, and I’ll need to continue doing that in the future. I have to look after the house and garden on my own” (PT\_01)

#### 3.2.3. Reasons for choosing surgery or cast

When patients chose surgery, it was often for similar reasons - they felt it was the only viable and time-sensitive option for them.

“... I think it was my only option - to have a chance if the operation goes well - there is hope ahead.” (PT\_03)

“I just need surgery so we can get it over with.” (PT\_08)

In contrast, patients who chose cast cited various reasons for their decision:

“... I’m not panicked, but almost ... terrified at the thought of having surgery because each of the three times I’ve had surgery I ended up with a staph infection” (PT\_02)

“I now know that surgery is probably not ideal for someone with osteoporosis. No.” (PT\_10)

Overall, the treatment choices were based on both preferences and opt-outs—some of which were not necessarily addressed in the decision aid.

### 3.3. The treatment decision

Patients discussed their preferred role in the decision-making process, as well as the doctor’s demeanour during the SDM consultation and its impact on their decision – even if they had a clear decision or were initially undecided.

#### 3.3.1. Determined or undetermined in advance

Some patients arrived at their follow-up visit fully decided on their preferred treatment option.

“I have done that [read the decision aid] and made a decision” (PT\_05 - cast)

“The decision has been made and I would like to have the operation as soon as possible.” (PT\_08 - surgery)

However, other patients remained uncertain even after speaking with the doctor and struggled to choose a treatment.

“And you know what, I have no idea about stuff like that. I just want the best treatment, right.” (PT\_10 - cast)

#### 3.3.2. The doctor’s demeanour

When patients were entering the SDM consultation, the doctor’s demeanour impacted their decision-making. Some patients felt that the doctor listened attentively and gently guided them toward a decision based on what mattered to them.

“Yes, [the doctor] explained .... and listened to me and so on. So, I think that was good.” (PT\_06)

“The kind doctor looked at me and said that she thought, in my case, that maybe we should not operate .... so that’s what we’ve decided” (PT\_02)

Conversely, some patients felt that the doctor did not ask about or understand what was important to them or considered factors that could affect their situation, such as functional limitations or other chronic diseases.

“I’m not sure if she’s even aware of how many problems I already have with my right side .....” (PT\_03)

Additionally, when doctors remained overly neutral, refraining from sharing their thoughts or stating that the choice was solely the patient’s, this sometimes led to doubts.

“... so, I would have liked him to be a bit clearer in his speech ... He was perhaps just a little too cautious and neutral” (PT\_01)

“She said it was up to me to decide and that it wasn’t her, my children, or anyone else. It was me ... and that was perfectly fine. But still, it seemed a bit like she wanted me to say no to surgery.” (PT\_03)

Thus, the doctor’s demeanour had a strong influence on patients’ preferences and their confidence in deciding on a treatment. When patients wanted guidance, but did not receive it, they often felt uncertain and burdened by the responsibility of the decision.

#### 3.3.3. Shared responsibility and decision making

Some patients expressed a preference for the doctor to make the choice for them.

“... and then he should have told me what it looked like, of course, and what he thought was best for me.” (PT\_01 - surgery)

“There must be competent doctors for that ... that they can say what the best treatment is for you. Yes” (PT\_10 - cast)

Some preferred to listen to the doctor’s thoughts and advice, as they did not feel knowledgeable enough to decide for themselves.

“... and there I acknowledge the medical knowledge because I think it is also important ....., After all, we are lay people and there I acknowledge the medical knowledge when I say, it is the doctor who speaks - thank you for that.” (PT\_09)

“I’m not a doctor or a medical professional in any way ... so deciding what to do next, whether to have surgery or just continue with a cast, I find that really, really difficult” (PT\_01)

Others preferred to consult with their relatives before deciding on their preferred treatment.

“I’ve talked to my children about it .... but I think it was difficult to decide”(PT\_03)

“ .... they [the family] haven’t had any experience, but they all supported me and said they thought it was okay what I decided” (PT\_05)

Thus, older DRF patients expressed a desire for guidance - not only from the doctor but also from their families - providing both the medical and personal perspectives to aid their decision-making. This underscores that treatment decisions are challenging, especially when faced alone.

#### 4. Discussion

To our knowledge, we are the first to report on the use of SDM in fracture management.

The sudden occurrence of a DRF fracture was extremely overwhelming for patients, even before arriving at the ED. During their three to 4-h stay, they underwent multiple examinations, encountered various healthcare professionals, and received extensive information about the fracture, initial treatment, and follow-up.

Our study, along with existing literature, shows that DRF patients often prefer a shared decision-making approach when determining treatment options (Huetteman et al., 2018). Despite the busy nature of ED visit, SDM materials were provided to help patients feel prepared for their outpatient clinic visit five to seven days later. Some patients arrived feeling confident in their treatment choice, while others hadn’t opened the envelope or still felt uncertain, even with the SDM information.

When reading the SDM material at home, many patients struggled to understand the purpose of the decision aid, even after reading the accompanying letter. This suggests that information about the Decision Aid’s purpose, provided in the ED and/or the letter, may be too vague.

Some patients found it very challenging to decide on their treatment choice, even after discussions with the doctor. Consisting with findings from previous studies (Huetteman et al., 2018; Moos et al., 2024), most DRF patients in our study wanted to be heard and to be actively involved in treatment decisions. However, some preferred that the doctor made the decision or at least provided clear recommendations. Patients felt frustrated and questioned the doctor’s credibility when they did not feel understood, or when the doctor remained overly neutral. This highlights the critical role of the doctor’s demeanour in shaping the patient’s experience, a point also supported by a systematic review on SDM in older patients with multiple chronic conditions (Pel-Littel et al., 2021).

Some patients also discussed their treatment choices with family and friends. This collaborative approach helped them make more informed decisions, aligning with findings from a previous study that showed such discussions provided reassurance in their treatment choices (Moos et al., 2024).

Finally, we found that the advantages and disadvantages presented for each treatment did not solely influence the decisions of older patients. For many, considerations regarding their functional level and the impact on their everyday lives were paramount. Supporting our findings, Collis et al. (2022) also observed that older patients with DRF tend to prioritize factors related to recovery over final outcome. Additionally, patients factored in their experiences with surgery, chronic diseases such as osteoporosis or other functional challenges, when making their decisions. Notably, these individual considerations were absent from the Decision Aid.

This study underscores the diverse needs and preferences of patients in the Shared Decision Making process.

#### 4.1. Strengths and limitations

Although ten interviews might miss some experiences, we achieved data saturation, as no new information emerged in the last two. The study included only women, so men’s perspectives were absent.

Seeking consent before the SDM consultation may have influenced the patients’ behaviour, possibly making them more self-aware. However, we minimized this by recruiting them based on their conversation with the doctor, without focusing specifically on SDM.

Despite the interviewer’s inexperience in qualitative research, an experienced researcher supervised the interview guide, and both researchers analysed the data, bringing diverse medical and nursing perspectives. The interviewer’s lack of knowledge about the patient’s history and separation from the treatment team served as a strength, as it helped patients to speak freely.

Conducting interviews soon after follow-ups ensured fresh memories and reduced recall bias. Initially planned as in-person interviews, the timing of the interviews prompted some patients to opt for telephone interviews instead. Telephone interviews have been demonstrated as a viable alternative without compromising quality (Novick, 2008).

Had we not allowed interviews to be conducted over the phone, a large amount of valuable data would have been lost. The high number of patients opting for phone interviews suggests that participating in SDM may require considerable effort from patients. That SDM was demanding for the patients could also be why our interviews were not that long.

#### 5. Conclusion

In conclusion, our study represents a pioneering effort to report on the use of shared decision-making in fracture management. The sudden onset of these fractures was highly distressing for patients. Providing SDM material to patients in the ED aimed to prepare them for their subsequent outpatient clinic visits. However, its effectiveness varied. The demeanour of doctors played a crucial role in shaping patient experiences, influencing their confidence and trust in the treatment process. While SDM shows promise in fracture management, refining communication strategies and tailoring educational resources are essential for enhancing patient-centred care in orthopaedic settings.

#### CRediT authorship contribution statement

**Louise Marie Nøhr:** Writing – review & editing, Writing – original draft, Visualization, Validation, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Charlotte Abrahamsen:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Methodology, Investigation, Formal analysis, Conceptualization. **Ane Simony:** Writing – review & editing, Visualization, Project administration, Data curation, Conceptualization.

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#### 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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