

Expert interviews: Interview guide

Telemedicine in rheumatology

Entry

1. Personal introduction and presentation of the context
 - Study funding by Novartis Pharma GmbH: free research, no influence on content
2. Content
 - Rheumatologic care; process of care; potential integration of telemedicine concepts into rheumatologic care.
 - Time frame: Approximately 1 to 1.5 hours; break/ termination possible at any time
3. Audio recording, anonymization, consent sheet

Table S1: Qualitative Interviews: Interview guide - translated from German

	Guiding question / narrative impulse	Check aspects	Concretizing questions	Questions to maintain the conversation
1.	How could rheumatology care be improved?	<ul style="list-style-type: none"> - Rheumatology care - Patient-doctor relationship - Communication with the patients - Communication with other service providers - Decision making - Patient preferences - Optimization potentials - Quality of supply - Waiting times 	<ul style="list-style-type: none"> - Do you see any challenges in rheumatology care? - What would impede the care process? - Has anything changed in care over the last five years? <ul style="list-style-type: none"> o Challenges / improvements - What is your assessment of the patient perspective on rheumatology care? - Is rheumatology care already cut to the patient's wishes? - What could make care more patient-centred? - How could health care provider exchanges be improved? - How could communication with patients be improved? - How are care-related decisions made? - What would make your job easier? - Can you think of alternatives to your current care? What would they look like? - What constitutes good rheumatology care for you? 	<p>Could you please give an example of this?</p> <p>Can you please elaborate on that?</p> <p>How do you see it?</p> <p>In what way does this become clear?</p> <p>How do you experience this?</p>

Table S1: Qualitative Interviews: Interview guide - translated from German

	Guiding question / narrative impulse	Check aspects	Concretizing questions	Questions to maintain the conversation
2.	<p>What do you understand by telemedicine?</p> <p>Could you please describe?</p> <p>There is no right and no wrong!</p>	<ul style="list-style-type: none"> - Potentials of telemedicine - TM risks - TM experience - Integration into RMD care - Information - Implementation of telemedicine 	<ul style="list-style-type: none"> - Have you already gained experience with telemedicine approaches? - <i>Narrowly speaking, calling a colleague can already be referred to as "telemedicine"</i> - What did these approaches involve? - Do you think telemedicine can contribute to improved rheumatology care? If so, how? - Where could it be used? - What are risks of telemedicine? - What are the barriers of telemedicine use? - Where do you inform yourself about telemedicine approaches? - How do you assess the role of telemedicine approaches in standard rheumatology care <u>today</u>? - How do you assess the role of telemedicine approaches in standard rheumatology care in the <u>future</u>? 	<p>Could you please give an example of this?</p> <p>Can you please elaborate on that?</p> <p>How do you see it?</p> <p>In what way does this become clear?</p> <p>How do you experience this?</p>

Table S1: Qualitative Interviews: Interview guide - translated from German

Conclusion

- Inform the interviewee that the interview is about to end, or use this section if the interviewee signals that the interview is ending.
- If request for anonymization: Demographic data (see below).
- Re-emphasize privacy, assure that all information will be kept confidential if needed
- Express gratitude and appreciation for the time, effort, and burden resulting from the conversation
- Point out to contact details on the information sheet for possible questions

Demographics:

Age:	Gender:
Role:	Date:
Have you ever used telemedicine?	

Table S2. Survey sample characteristics

Table. Survey Sample Characteristics

	Total
Gender	708
Female	507 (71.6%)
Male	201 (28.4%)
Age	734
<20 years	35 (4.8%)
20-40 years	104 (14.2%)
50-60 years	275 (37.5%)
60-80	290 (39.5%)
>80 years	30 (4.1%)
RMD-Diagnosis (selection)	734
Rheumatoid Arthritis	318 (46.4%)
Osteoarthritis	163 (23.8%)
Psoriasis Arthritis	94 (13.7%)
Osteoporosis	81 (11.8%)
Fibromyalgia	47 (6.9%)
Spondylarthritis	43 (6.3%)
Collagenosis and vasculitis	20 (2.9%)
Other Disease (free form)	95 (13.9%)
Health Status	696
Very good	12 (1.7%)
Good	43 (6.2%)
Okay	316 (45.4%)
Bad	275 (39.5%)
Very Bad	50 (7.2%)
Place of residence	691
City	141 (20.4%)
Town	143 (20.7%)
Provincial town	170 (24.6%)
Rural area	237 (34.3%)
Distance to Rheumatology Practice	715
> 10 km	247 (34.6%)
10-20 km	145 (20.3%)
20-30 km	110 (15.4%)
30-40 km	92 (12.9%)
40-50 km	39 (5.5%)
50-60km	27 (3.8%)
< 60 km	55 (7.7%)
Distance to GP Practice	715
> 5 km	501 (69.1%)
5-10 km	120 (16.6%)
10-15 km	54 (7.5%)
15-20 km	23 (3.2%)

Table S2. Survey sample characteristics

20-25 km	10 (1.4%)
25-30 km	9 (1.2%)
< 30 km	8 (1.1%)
Personal Devices	727
Telephone	628 (86.4%)
Personal Computer	461 (63.4%)
Smartphone	412 (56.7%)
Mobile Phone	410 (56.4%)
Tablet	254 (34.9%)
Fax Machine	100 (13.8%)
Activity Tracker (bracelet)	90 (12.4%)
Smartwatch	40 (5.5%)
None	1 (0.14%)
Internet Access at home	729
Yes	613 (84.1%)
No	116 (15.9%)

Table S3. Technology use in health care**Table.** Technology use in health care.

	Total
“Which of the devices have you previously used to contact your doctor?”	714
Telephone	566 (79.3%)
E-Mail	166 (23.2%)
None so far	132 (18.5%)
Fax machine	49 (6.9%)
Chat	30 (4.2%)
SMS	15 (2.1%)
Video consultation	2 (0.3%)
“Have you ever searched for information about your rheumatic disease on the Internet?”	721
Yes	467 (65.6%)
No	254 (35.7%)
“How satisfied were you with the information provided?”	538
1 (Very satisfied)	83 (15.4%)
2	166 (30.9%)
3	173 (32.2%)
4	65 (12.1%)
5	39 (7.2%)
6 (Not satisfied at all)	12 (2.2%)
“Did you ever visit the website of your rheumatology practice?”	708
Yes	177 (25.0%)
No	505 (71.3%)
My rheumatology practice has no website	26 (3.7%)

Table S4. Recommendations to overcome barriers to telemedicine implementation in rheumatology

Table. Recommendations to overcome barriers to telemedicine implementation in rheumatology

	Recommendations to overcome barriers to telemedicine implementation in rheumatology
Macro level Politics / legislation	<ul style="list-style-type: none"> - Expansion of digital infrastructure (e.g., in Germany: Broadband expansion, enhanced network coverage) - Promotion and funding of digital transformation in medical practices and hospitals: especially training and further education as well as infrastructure and technical equipment
Meso level Healthcare system / IT sector	<ul style="list-style-type: none"> - Information and education offers for patients as well as health care professionals - Promoting interoperability / standardization of interfaces - Adequate remuneration arrangements - Well-balanced and transparent data security concepts (incl. low-threshold information for users) - (Dissemination and circulation of) Guidelines for low threshold implementation of telemedicine - Training and involvement of dedicated telemedicine specialists
Micro level Patient / physician	<ul style="list-style-type: none"> - Implementation of hybrid concepts for virtual/on-site care - Feedback loops during telemedicine care: via chat, phone, email / dedicated and trained health professionals or automated systems, as appropriate - One does not fit all: Implementation of triage mechanisms in order to offer personalised and need adapted telemedicine approaches - Actual realization of further education and training by health care practitioners