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Telephone consultations: the future of follow-up care?
Patients' and clinicians' experiences during the COVID-19 pandemic.

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ABSTRACT

Objective: To evaluate the perceived quality of follow-up telephone consultations (TCs) from the perspective of patients and health care professionals (HCPs) of multiple medical disciplines during the COVID-19 pandemic.

Design: A qualitative study using semi-structured interviews and reflexive thematic analysis.

Setting: Seven medical disciplines (general dermatology, dermato-oncology, head and neck oncology, internal medicine, medical oncology, gynaecological oncology and surgical oncology) at a large university hospital in the Netherlands.

Participants: Patients who received and HCPs who were forced to provide TCs as a substitute for outpatient follow-up appointments during the COVID-19 pandemic.

Results: Eighty-two patients and fifty-eight HCPs were interviewed. Predominantly, patients and HCPs were satisfied with the provided care by TCs. They regarded TCs as efficient, accessible and of acceptable quality, provided there was an established patient-physician relationship, medical complaints were absent and physical examination was not indicated. Without nonverbal communication and physical examination, patients were however worried about the accuracy of their health assessment. Both patients and HCPs wish to use TCs in the future alternatively with face-to-face consultations.

Conclusion: This study concludes that TCs seem valuable to partially replace face-to-face consultations. TCs can and should be performed in stable, chronic patients with whom a doctor-patient relationship has already been established. Face-to-face consultations should be specifically reserved in the case of new patients, bad news conversations and when clinically relevant physical examination is indicated. TCs should be used with an individually customized approach based on patient- and disease-specifics, in which shared decision making plays a major role. Before major implementation is considered, sufficient data on the safety, regarding missed diagnoses or cancer recurrences should first be assembled.

STRENGTHS AND LIMITATIONS

- This is the first large scale multidisciplinary study to qualitatively investigate the experienced quality of telephone consultations in follow-up care, from the perspective of patients and health care professionals.
- The involuntary character of this experiment provides maximum variation sample.
- Use of validated quality and implementation concepts ensure the relevance and applicability of the data.
- Maximum variation sampling of participants and maximum reflexivity due to a diverse research group reveals empirical and general insights into the participants' perspective.
- The exceptional COVID 19 circumstances could have influenced the participants opinions and could limit the extrapolation of this data.

INTRODUCTION

The COVID-19 pandemic required hospital organizations to reduce physical contact between physicians and patients and to reorganize public health care immensely. Regarding chronic and non-life-saving care, a difficult trade-off had to be made between the risk of exposure to COVID-19 and the necessity for a physical hospital visit to assure adequate patient follow-up care. This drove innovation in ways in which follow-up care was provided. One of these ways was by means of telephone consultations (TCs).

Studies have shown that costs of healthcare rise due to an increasing frequency in outpatient appointments.[1] Telemedicine has been suggested to improve the efficiency of outpatient follow-up and also appeared to be a suitable tool for follow-up outpatient care in various chronic and oncological conditions.[2–4] In patient surveys, the possibility of fair communication,[5] high patient satisfaction and confidence in its quality were reported.[6,7] The absence of travel costs and benefits of time saving for patients have consistently been identified as predominantly important benefits compared to FtFCs.[4,8,9]

Although TCs were increasingly utilized for low-risk conditions in the primary care setting, TCs were never harnessed on a large scale in secondary and tertiary care.[10] Concerns about ensuring patient safety by negotiations of clinical risk, uncertainty of diagnosis without performing physical examination (PE),[11] impact on workload faced by health care professionals (HCPs),[12] lack of financial compensation for HCPs and finally legal restrictions and insurance issues[13,14] impeded implementation. Therefore, evidence on the quality and safety of TCs remained narrow. Studies replacing FtFCs with TCs are considered ethically questionable because of the fear of negative outcome on survival. The COVID-19 pandemic resulted in the abrupt replacement of nearly all FtF follow-up care and naturally realized this experiment.

Statistics about TC-associated efficiency and cost-effectiveness grow. However, there is a gap in knowledge surrounding the patients and HCPs' perceived quality of care of TC for outpatient follow-up. The mandatory increase of the use of TC since the COVID-19 pandemic has offered a unique opportunity to take a critical look at the current structure of care. Not only now, but especially in the post-corona era in which regular follow-up care will be scaled up again, the results of this study can contribute to a guideline for implementation of TC in which, to our knowledge, for the first time, multidisciplinary quality objectives are involved.

The objective of this qualitative study is therefore to evaluate the perceived quality of follow-up through TC by patients and HCPs from multiple medical disciplines in the hospital during the COVID-19 pandemic.

METHODS

Design & setting

This qualitative phenomenological study was conducted at a large University hospital in the Netherlands using semi-structured interviews with patients and HCPs from seven medical disciplines: general dermatology, dermato-oncology, head and neck oncology, internal medicine, medical oncology, gynaecological oncology and surgical oncology.

Data collection occurred during the COVID-19 pandemic, over the period of May to August 2020. The Consolidated Criteria for Reporting Qualitative Research were used for reporting this study's characteristics.[15]

Researchers

Data were gathered by 14 student researchers (4 male, 10 female) in the masters' phase of medical school, supervised by physicians from the corresponding discipline. Student researchers had no prior experience with qualitative research interviews and were trained by a supervisor with extensive experience in interviewing and qualitative research. Training included taking at least two trial-interviews with peer feedback using an interview guideline.[16] No previous relationship between researchers and interviewees was established. Data were merged and analysed by six of the student researchers, under supervision of four senior researchers: two professors (one in Internal Medicine and one in Gynaecological Oncology), one Epidemiologist experienced in qualitative research and one expert in qualitative research/policy making.

Participants

Inclusion criteria for patients consisted of 1) follow-up care received via a TC instead of FtFC 2) were able to understand and participate in verbal conversations 3) were at least 18 years old 4) Dutch speaking. Patients were preselected by treating physicians. With deductive purposive sampling, maximum variation was aimed with respect to age, gender, clinical diagnosis and follow-up interval. Selected patients were contacted via (e)mail and telephone.

The inclusion criterion for HCPs was having conducted a TC as a replacement of a FtFC. Maximum diversity was attempted to be achieved and was based on gender, age and occupation (i.e. nurse, nurse practitioner, resident or medical specialist). HCPs were contacted via email.

Data collection

During the semi-structured interviews, open-ended questions were asked using a topic list.

Topic lists consisted of similar subjects for both groups and were based on the six domains of health care quality: safe, effective, timely, patient-centered, efficient and equitable validated by the Institute of Medicine.[17] In addition, aspects relevant for implementation of TCs in the future were explored, using the validated Tailored Implementation in Chronic Diseases Checklist.[18] Examples of questions for patients were: 'What is for you the goal of follow-up' and 'Was this goal achieved by TC?' Questions for HCP's were for example: 'How did you determine the health status of the patient?' and 'When and for which patient is TC a suitable follow-up tool?' Topic lists were pilot tested and evaluated in weekly online research meetings. Adjustments were made accordingly. One on one interviews were held in Dutch and lasted between 25 and 60 minutes. Patient interviews were held via telephone and HCPs' interviews with Microsoft Teams®, audio only. Written consent was obtained from all participants prior to the interviews and reaffirmed verbally at the beginning of each interview. All interviews were audio recorded, transcribed verbatim and anonymized. Once transcribed, the recordings were deleted. Member checking was used for a proportion of the data.

Data Analysis

The reflexive thematic analysis (RTA) framework by Braun and Clarke (2006, 2019), a method for systematically identifying, organizing, and capturing patterns of meaning across narratives, was used as an analytic guide for this study.[19] Analysis was performed with the aid of Atlas Ti®, an electronic coding software.

RTA was completed in two cycles. In the first cycle the codes were individually applied by the 14 student researchers and the first themes were deductively established based on the quality domains. Through a shared codebook (per perspective), inter-coder agreement was

attempted. This codebook provided the base for the 2nd cycle of analysis. After merging the data, six student researchers (three per perspective) systematically recoded the data in 4 steps, as shown in Figure 1. New codes, adjustments of codes and ambiguous codes and quotations were frequently discussed within the research group. Finally, the applied codes were randomly checked by the senior researchers to ensure inter-coder agreement and quality of codes and to examine the influence of the student researchers on the collection of the data and the interpretation of the themes. Through presenting summaries, visualizing relations and discussions within the research group the deductive themes based on the quality domains, evolved into new inductive themes. These inductive themes overarched related quality domains, presented newly risen issues and were categorized based on their interconnection.

Ethical Approval

This study was approved by the institutions ethical board (REB: 202000355). Written consent was obtained from all participants.

Patient and Public Involvement

Patients or the public were not involved in the design, conduct, reporting or dissemination plans of our research.

RESULTS

Study population

A total of 82 patients and 58 HCPs, of which 44 physicians and 14 nurse practitioners were interviewed. Inclusion was discontinued when data saturation was reached per subgroup. No dropout interviews were reported. Of the patients, 44 (54%) were female and age ranged from 26 to 84 years (mean: 59,1, SD:14,7) and they lived at a distance from the hospital between 0,3 km and 267 km (mean: 40,9 km, SD: 42,4). Almost all patients (93%) had finished postsecondary education. Patients were diagnosed with a broad variety of diseases,

see Table 1. HCPs' age ranged from 25 to 65 years (mean: 43,1 SD: 11,7) and 35 (60%) were female. Years of work experience ranged from 0,5 to 35 years (mean:12,2 SD: 10,2), HCPs occupation is presented in table 1.

Disciplines	**Patients: Diseases (n)**	**Health Care Professionals occupation (n)**
General dermatology	Eczema (6) Psoriasis (4)	Medical Specialist (1) Resident (3) Research Physician (1) Nurse practitioner (3)
Dermato-oncology	Basal cell carcinoma (2) Squamous cell carcinoma (3) Melanoma (6) Verruca Seborrhoica (1) Skin tumor, unspecified (3)	Medical Specialist (1) Resident (7)
Head and Neck oncology	Laryngeal cancers (4) Pharyngeal cancers (8)	Medical Specialist (3) Resident (5)
Internal medicine	Diabetes Mellitus type 1 (6) Diabetes Mellitus type 2 (5)	Medical Specialist (4) Resident (1) Nurse practitioner (7)
Medical oncology	Mamma carcinoma (6) Neuro-endocrine tumor (6)	Medical Specialist (6) Nurse practitioner (2)
Gynecological oncology	Vulvar carcinomas (2) Cervical carcinomas (2) Ovarian carcinomas (2) Endometrial carcinomas (3) Preventive therapy (BRCA1 carrier) (1) Granulosa cell carcinoma (1)	Medical Specialist (5)
Oncological surgery	Sarcomas (5) Melanoma (2) Thyroid carcinomas (2) Merkel cell carcinoma (1) Mamma Carcinoma (1)	Medical Specialist (7) Physician Assistant (1) Supervising nurse (1)

Table 1. Representation of diseases in the patient population. n = number of patients.

Themes

The experiences regarding the quality of TCs were classified within three interconnected themes: (1) individual (2) inter-personal and (3) contextual. A fourth theme: Future implementation was considered a separate category. (Sub)Themes will be discussed per category and highlighted with translated quotes.

Individual

Subthemes within 'individual' concern aspects of TC in relation to the individual patient or HCP. Within this category four sub-themes were identified: assessment of health status, wellbeing at the time of a TC, time management and job satisfaction. An overview and explanatory quotes are presented in Table 2.

Theme: Individual		
Subtheme (description)	**Patients**	**Health Care Professionals**
Assessment of health status: *Experience and belief about the adequacy of health assessment trough TC.*	"Compared to a live conversation, there is less reassurance [than in a TC]. For example, the doctor can ask 'how is your wound?' I might then say 'yes, it looks alright' but what if I, as a layman, think it's fine, but for them [HCPs] it might not be" (medical oncology, mid 60s)	"You cannot see them [the patients] walking in. It is in their posture, and how fast they walk. Are they out of breath? Can you see whether they are nervous? The tears in their eyes, or how tense they are; these signs reveal everything. How is their hygiene, do they neglect this or not?" (surgical oncology, mid 50s)
	They just have to feel it [lymph nodes]. So, it doesn't help to discuss it, like... "Do you feel anything?" I mean, I also didn't feel anything when I was primarily diagnosed" (gynaecological oncology, early 30s)	"And most of the time, as doctors, we need to be honest and admit that the sensitivity of physical examinations is rather limited. Most of the time, if there is something to feel, it will be the patients themselves who first discover it." (surgical oncology, mid 60s),
Time efficiency: *Experience concerning time efficiency with the use of TCs*	"As a patient you view that [saving travel time] differently; if you think it is necessary and important, you just go to the hospital. Therefore, as a patient, I think that travel time is a less important factor." (medical oncology, mid 70s)	"At a distance I can selectively invite patients for live consultations, and therefore can efficiently divide my time between patients; who requires attention and who does not? (internal medicine, mid 50s)

	"Over the phone was fine for me. It saves me a lot of travelling time" (general dermatology, late 20s)	"And it has a big impact, especially on people with a family, or people who work, or also on people that need to fix transport to come here. If you do not need all that, it saves a lot of hassle and stress for patients." (medical oncology, mid 30s)
Wellbeing at time of a TC: *Influence of the patients' wellbeing and the presence/absence of complaints at the time of the TC*	"At the moment everything is going well, so in this case calling [the HCP] is fine. However, if you're feeling distressed, it may not at all be fine to call. If there is a problem then you might just have to be seen by the doctor!" (medical oncology, late 50s)	"Follow-up patients who actually are doing quite well. Or [patients] who you expect that will react reasonably well to the treatment that you prescribed. As far as I am concerned those patients you don't have to see 'live'.'' (general dermatology, late 20s)
	"Sometimes you [patient] have to wait in the hospital just for a five-minute appointment for test results. I think that is nonsense" (head and neck oncology, early 60s)	''If all is well, [with the patient], telephone contact is brief. When patients experience complaints, they usually find it pleasant to physically visit the clinic.'' (surgical oncology, early 30s)
Job Satisfaction *Influence of performing TCs on the feeling of fulfilment or enjoyment the HCPs derive from their job*	X	"I didn't become a physician to work in a call centre." (HCP, dermato-oncology, early 30s)
		"Until now, I'm not really a fan of it [telephone consultations] yet. Also, because I really like the contact with people, it is just such a big part of my job." (internal medicine, mid 50s)

Table 2: Interconnected theme: individual with explanatory quotes
Telephone consultation (TC)
Health care professional (HCP)

Assessment of health status

For adequate health assessment, PE was believed to be essential by most patients and HCPs. Patients were concerned about the validity of HCP's health assessment via TC and subsequently some were insecure about their health status. To some patients, receiving a PE was the main purpose of their follow-up appointment which made a TC not sufficiently effective for them. This was especially the case for oncological patients, who felt more vulnerable due to the life-threatening aspect of their disease. Not being able to perform PE resulted for some HCPs in a feeling of uncertainty about potentially missed diagnoses or complications. The absence of non-verbal communication contributed to these concerns. Additionally, HCP felt distressed because evidence on the safety of TCs had not yet been

scientifically established and they felt a responsibility to deliver healthcare equivalent in quality and safety to a FtFC.

The necessity of PE was highly dependent on the medical discipline. Disciplines such as internal medicine and surgical oncology were able to rely on lab results and radiographic imagery for disease assessment. On the contrary, oncological dermatologists expressed not being able to perform any adequate assessments with TCs because of the visual character of their profession. The use of photographs partially compensated for the absence of PE but was impaired due to poor quality of photos. Patients however felt more assured, because the photograph functioned as an alternative to PE for them. Some HCPs also considered PE to be overrated and mainly performed for the patients' assurance. Oncological surgeons for example highlighted that breast lumps are most often discovered by patients themselves and gynaecological oncologists expressed that performing PE to diagnose recurrent disease that cannot be treated curatively is pointless.

Without a PE, and nonverbal communication, HCPs felt they needed to put more emphasis on the verbal component of their consultations and actively engage patients in the conversation. Active questioning, however, did not always lead to sufficient information for the HCPs. Some patients reported they felt a greater responsibility to verbally describe their medical state or perform self-examination with TCs than with FtFCs. Patients who were experienced with self-examination (e.g. those with a melanoma or mamma carcinoma) felt competent to recognize abnormal symptoms. However, other patients did not feel competent in this, valuing PE by a HCP significantly and were subsequently not fully satisfied with a TC. HCPs said that if they felt any uncertainty about the disease status or if the patient said he/she did not feel reassured, patients were invited for a FtFC.

Time-Management

Patients referred to several time saving benefits of TCs: not having to travel to the hospital, not having to spend time in the waiting room, not having to take time off work and not needing to ask family members to accompany them. These benefits did not always outweigh being able to have a face-to-face conversation with their HCP. This contradicts the assumption of HCPs that patients would favor a TC because of these benefits and considered TCs to be more patient centered because of this. HCPs experienced more flexibility and easier time management using TCs. Most HCPs expressed that a TC consumed less time than a FtFC because of the absence of a PE and being able to multitask. Some HCPs experienced the overall efficiency as less because of secondary FtFCs, when a TC was not sufficient.

Wellbeing at the moment of a TC

Various patients who were asymptomatic at the time of TC said that if they were to experience complaints at the time of a TC, they would not have been happy with a TC instead of a FtFC. This was mainly due to their desire for a PE and the need of face-to-face reassurance. By relatively healthy patients who had regular uncomplicated follow-up consultations, TC was mostly experienced as sufficient: they saw little added value of FtFCs in that circumstance. Additionally, several HCPs expressed that FtFC follow-up appointments of patients without complaints are of little clinical relevance.

Job satisfaction (HCP)

Several HCPs expressed lower job satisfaction with performing TCs. This was mainly due to the lack of face-to-face interaction with TCs, which was a large motivation for them to become a HCP.

Inter-personal		
Subtheme (description)	**Patients**	**Health Care professionals**
Mutual Knowledge and Trust: *Importance of a previous established relationship between patient and HCP during a TC.*	"It is important to be in contact with someone you trust, especially if you have a telephone consultation. It is more difficult to go through the entire process of introductions through the phone, than a physical consultation, which you may have had already. In the latter case, you have already established a connection with the doctor." (internal medicine, mid 50s)	"As a result of knowing my patients for a longer period of time, I know what type of person they are. If they are feeling a little disappointed, saddened or had hoped for a different outcome, I can manage it perfectly through the phone." (internal medicine, mid 50s)
	"If he [the HCP]asks me what my weight is, then I can say 50 kilograms, you tend to round the numbers down a little, but if I stand next to them on the scale, there isn't the possibility to lie. Over the phone it is easier to fool someone." (internal medicine, early 70s)	"There are patients that perhaps might trivialise [their situation] and if you already know that of a patient, it is not sensible to have a conversation on the phone, because you cannot trust that one-hundred percent. Through the telephone it is harder to catch than on the outpatient clinic.'' (medical oncology, mid 30s)
Connection *The experienced emotional closeness between patient and HCP during TCs*	"And when you do go see a doctor, after leaving you are a little more at ease. I can't explain exactly how that works." (gynecological oncology, mid 70s)	"If you sit opposite of each other, you can use non-verbal communication to comfort patients or at least show some empathy. Through the phone that is all a bit harder of course.'' (general dermatology, late 20s)
	"I think talking on the phone might make it easier to communicate, because you don't have to look them [the doctors] in the eyes, that is the difference I think." (internal medicine, early 60s)	"I think that [in the case of] bad news, non-verbal communication and how you react to what the patient says, contributes to how the patient experiences it. And maybe also how [the patient] will deal with the news. (surgical oncology, early 30s)
Transmission of information: *Reliability of and ability to exchange information during TC*	"If you go there [to the hospital] together, you both pick up on something [in the conversation]. When you talk about it [consultation] again afterwards, you have the feeling you remembered more. That is less the case with the telephone". (medical oncology, early 60s)	"You can't draw a picture that you can use to clarify yourself. You cannot go through a scan with a patient because they cannot see them or share them. (gynacological oncology, early 60s)
	"It is good that when another scan is done, we can look at the images together [patient and health care professional]. And that I can also get an impression of where the tumour is and if it corresponds to my complaints, for example?" (medical oncology, early 60s)	"When several people are talking and you don't know who is who on the line ... it makes it more difficult to understand a patient or whether they understand you. (surgical oncology, early 30s)

Table 3: Interconnected theme: inter-personal with explanatory quotes
Telephone consultation (TC)
Health care professional (HCP)

Interpersonal

Subthemes regarding the interaction and communication between patients and HCP during a TC were categorized as inter-personal. Three sub-themes were identified: mutual knowledge and trust, connection and transmission of information. An overview and explanatory quotes are presented in Table 3.

Mutual knowledge and trust

A previously established patient-HCP relationship was regarded as an absolute precondition for reliable communication during a TC, by both patients and HCPs. HCPs found that managing patients who they had spoken to in person previously was easier because they could better assess the patient specific needs and determine the reliability of the patients' answers. Some HCPs however still doubted the reliability of the patients' verbal information which they could not objectify with a PE or a hetero anamnesis as they would do during a regular FtFC. HCPs worried that some patients (intentionally or unintentionally) downgraded symptoms or withheld certain complaints/information. This was confirmed by some patients (see table 3 for explanatory quote). Patients expressed that having met the HCP in a previous FtFC made them more confident and reassured about the received health care during the TC. Trust in the HCP and the provided health care was reinforced when HCPs mentioned to patients that in case of need or uncertainty, they would be welcome at the outpatient clinic.

Connection

Almost all patients felt they could express their concerns and did not feel a difference in the HCPs empathetic ability over the phone. When looking closely to verbal expressions in

communication during the interviews, TCs were described as more distant or business like, while FtFCs were referred to as easier and more reassuring. The feeling of reassurance was greatly influenced by the connection between patient and HCP. Lack of non-verbal communication seemed one of the most explanatory factors for these differences. HCPs considered the relevance of this connection dependent on the nature of the consultation; especially bad news conversations were considered inappropriate to be performed through TC. Some patients were more hesitant to talk about life and death and sexuality during a TC than in FtFCs. Other patients however preferred a TC for speaking about these subjects (see Table 3 for explanatory quote).

Transmission of information

TCs were usually held one-on-one between patient and HCP. Including family or friends in the conversation through speakerphone was experienced as chaotic by HCPs and it impaired the communication with the patient. Another limiting factor in the transmission of information was the inability for HCPs to show scans or to draw pictures in explaining disease patterns and handing out information brochures. This was highly missed by the HCPs.

Contextual: COVID 19

Both patients and HCPs were relieved that during the pandemic, consultations could be continued in the form of TCs. Some patients were anxious for a COVID-19 infection and wished to stay away from the hospital, which they considered a particular place of risk. Thus the change to TCs was understood and accepted by the majority of the patients. Some patients expressed that they would prefer a FtFC in a non-pandemic situation. Other patients felt that after using TCs multiple times they would get used to it and appreciate it more.

HCPs could accomplish more with TCs than they had initially expected. TCs forced HCPs to critically and individually prioritize care. HCPs identified the COVID-19 pandemic as a catalyst to re-evaluate follow-up care.

Implementation: Customized care

Most HCPs were positive about the use of TCs within follow-up care. They considered TCs to be patient-centered and an accessible way of delivering care. However, HCPs and patients felt there would always be a need for face-to-face interaction between patients and HCPs and thus both groups said they did not wish to solely use TCs in follow-up care. In all specialties, both HCPs and patients preferred a combination of FtFCs and TCs in follow-up care. Patients highly valued being engaged by the HCP in deciding upon a TC or a FtFC for the next consultation, to express their own wishes.

Most HCPs felt that when selecting patients based on patient and disease characteristics, the nature of the consultation, interval of follow-up appointments, the relevance of PE, and other disease monitoring possibilities (such as symptoms or lab results) quality and efficiency of TCs could be better ensured. Some HCPs felt that with profound selection, full-fledged care could be delivered. Figure 2 shows an overview of characteristics as a basis for the selection of patients. HCPs commented that these circumstances should not count as static facts, but that they are multifactorial and an individual decision is necessary.

"The decision as to whether a telephone consultation takes place depends on the patient themselves, their treatment, situation, residence and network surrounding them. There are too many factors that must be taken into account in order to be able to say: yes, this patient surely has to be on the outpatient clinic, or whether the problem can be solved through a

telephone consultation. At least not in my opinion, there isn't a recipe saying: "following these criteria, this must happen." (HCP, medical oncology, early 60s)

DISCUSSION

The insurmountable switch from face-to-face consultations (FtFCs) to telephone consultations (TCs) for follow-up care during the COVID-19 pandemic presented a unique opportunity to evaluate the perceived quality of this method of interaction between patients and health care professionals (HCPs). Predominantly, patients and HCPs were satisfied with the provided care by TC. The main outcome of our study is that TCs can be performed in stable, chronic patients with whom a doctor-patient relationship has already been established, and in those for whom travel is a major barrier, as eluded from 140 interviews with patients and HCPs from a variety of medical disciplines. Additionally, FtFCs should be specifically reserved in the case of new patients, bad news conversations and when clinically relevant physical examination (PE) is required.

Stating the obvious and as described in previous research, the absence of a PE led to a lower perceived quality of care by most patients and HCP, making patients feel anxious about the proper assessment of their clinical status.[20] What stands out are the differing opinions: while for example interviewed dermatologists plea they cannot execute their jobs without PE, other doctors state that they can easily go without PE as long as other ways to monitor the clinical status are available, as shown by previous studies.[2,21,22] The role of PE to reassure patients in follow-up care has been discussed by Zaman et al.[23], who concluded it to be a patient centered and an intimate ritual of positive attribution to the patient-physician relationship. In a survey study by Kadakia et al.[24], patients with cancer appraise both the pragmatic and symbolic aspects of PE, which confirms our findings that especially oncological patients highly value PE: a decreased sense of reassurance is directly associated

with reduced perceived quality of care. For this specific group, the benefits of TCs did not outweigh the value of being able to physically attend a follow-up appointment, shining a new light on the literature thus far. In addition, some HCPs in our study mentioned using PE to reassure patients rather than for diagnostics. The role of PE therefore seems ambiguous for both doctor and patient. Nevertheless, reassurance seems to play a crucial role and yet seems to be better accomplished face-to-face. We discovered that purely the option for a FtFC after a TC contributes to the reassurance of both patient and HCP.

Although TCs have been shown to be shorter in time per consultation in other studies,[25,26] HCPs in our study stated that efficiency can be compromised when patients come to the hospital for an additional FtFC after an unsatisfactory TC. Since, in the first place, the demand for TC in high-income countries partly arose from the aim to drive up efficiency and lower healthcare costs,[27,28] it is questionable if these goals can be achieved at present. To ensure efficiency, proper and adequate selection of patients in whom a TC is most likely to be successful, is therefore crucial.

Until this day, virtual care is predominantly researched through satisfaction questionnaires in order to achieve a form of quantification.[29] Most studies show promising results when it comes to the future of TCs: higher levels of patient satisfaction have been reported for TCs compared to FtFCs.[30] Byravan et al.[31] found by questionnaire that 23.5% of patients would have preferred FtFCs, but 43% of patients would not mind conducting all future appointments by TC. In our study however, many patients and HCPs preferred FtFCs, and provided reasons and explanations which amplified the complementary value of a qualitative approach. Harris[32] empathizes that consensus and consistency statistics are generally weak between these two research methods. Qualitative research enables a deeper, more layered,

analysis that addresses topics that would be missed, never addressed or underestimated by questionnaire exploration. An example of this depth are patients mentioning to feel a greater responsibility to appear better verbally in a TC. Also, the fundamental expression of lower job satisfaction with performing TCs by several HCPs and the lack of human-to-human interaction during TCs demonstrates the added value of this study's approach.

Strengths and Limitations

This is the first large-scale qualitative studies within this subject with a multidisciplinary approach executed by a diverse research group to establish maximum reflexivity. The use of validated concepts for the qualitative analysis ensured that discussed subjects were relevant to patients and HCPs. An important other strength of our study is the fact that it was an involuntary experiment. Many patients admitted that after an initial hesitation or resistance they eventually concluded to be convinced of TC. For example, Beaver et al.[30] noticed a preference for clinical examination and FtFCs as reasons for refusal of participating in their study, leading to a highly selected population biased towards patients favouring TCs. This might explain the difference with our results and highlights our added value compared to previous studies. The rapid setup provided in-depth information about the participants' first experiences, but also presented limitations: participants were aware that TCs were performed for their own safety and were therefore possibly more accepting than in non-pandemic times. In addition, interviews were conducted by inexperienced interviewers, which, despite interview training sessions and using a shared topic list, could have resulted in varying interview quality. However, with our large and diverse population, we feel that it is unlikely that this has led to missing relevant information. Lastly, it is important to mention that safety

has not been investigated in this study, at best the *perceived* feeling of safety has been explored.

Implications

TC and FtFC should be seen as two different forms of consultation, both unique in nature and irreplaceable by the other without compromising on experienced quality. TCs will provide a limited, nonetheless valuable part of care. The transformation to this hybrid form of outpatient consultation brings challenges that can be overcome with thorough research and attentive implementation. When considering follow-up care to be performed through TC, the optimal form of care should be based on patient and disease specific issues and should be chosen together with patients. It seems important not to overlook the fact that shared decision-making concerns not only the content (e.g. what is the *value* of PE for this specific patient) but also the manner of the follow-up (can TCs be alternatingly used with FtFCs and which frequency suits this patient best?). This hybrid form can be flexibly used to provide tailored care for the individual. One could consider the use of TC as a low-threshold screening instrument. For some patients, this 'screening TC' may lead to an additional FtFC to still perform PE. In others, efficiency is increased for both patient and HCP as TC appears to be sufficient and FtFC can be postponed.

Informing patients about the effectivity and safety of this new follow-up manner is essential in performing successful consultation and implementation. Thus future research should specifically focus on the safety of TCs using quantitive research methods. Additionally, future research could focus on asking HCPs before and after whether the consultation could have been virtual or not. This might give an indication of the potentials of TC, but also how

well this can be estimated in advance. The interviews with HCPs suggest that this can be challenging.

In our interviews, many patients showed curiosity towards implementation of video consultations (VC) to possibly alleviate the lack of non-verbal communication. Whether VCs will replace TCs in the future, is still indecisive. Barsom[7] found that, according to previous studies, almost half of the patients preferred VCs over TCs to communicate with their surgeon because of the benefits of providing visual feedback. Since in comparative studies between VCs and TCs conclusions are mostly based on questionnaires, the exact in-depth motivations why *the other half* of the participants still prefer TCs, remains to be explored. As described by Barsom et al., hesitation to use technology, VC not offering added value or expecting a short call without unforeseen news might play a role in the potential irreplaceability of TCs by VCs.

Conclusion

With the rise of the digital age also the healthcare industry is increasingly exploring alternative methods aiming to deliver more patient-centered and efficient care. This presents the idea of a health care system in which remote consultation is expected to become the norm. According to the experiences of our participants, transition to solely remote care by TCs is undesirable because the need for face-to-face interaction will continually persist. These conclusions are based upon the perceived quality of care, while the actual safety of TCs has not been established yet but remains the paramount goal of care. Nevertheless, TCs have also shown promising beneficial elements. Thereby, used with a customized approach

and alternating with FtFCs, TCs were considered a valuable additive to current follow-up care.

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AUTHOR CONTRIBUTIONS

MM, GW, GH, BL, ER, AR, BM and HZ contributed to the design and conception of the study protocol. FM, MP, EB, MH, SO analysed the interview data. Themes and concepts were settled on by discussion with HZ, GW, MM and BM. FM, MP, EB and CG drafted the manuscript which was revised by all other authors (MH, SO, MM, GW, GB, BL, ER, AR, BM and HZ) All authors approved it for publication.

Legends figures:

Figure 1. Four steps by which the data was systematically reviewed and recoded.

Figure 2, Spectrum of suitability for telephone consultations in follow-up care. Telephone consultation (TC)
** quoted by health care professionals (HCP)*
*** quoted by patients*
**** quoted by both health care professionals as patients*.

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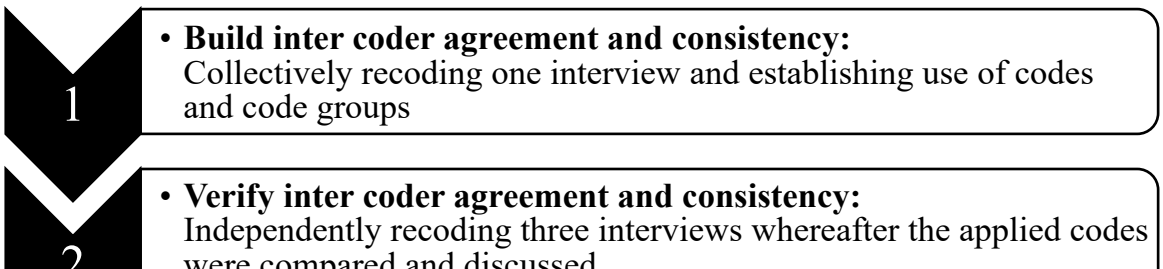

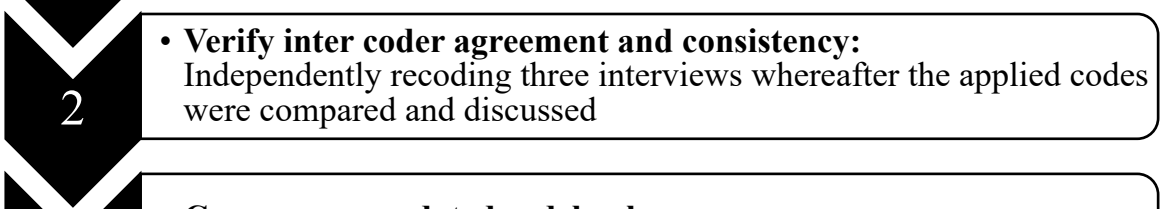

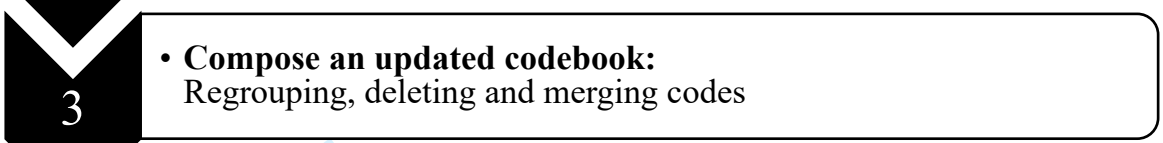

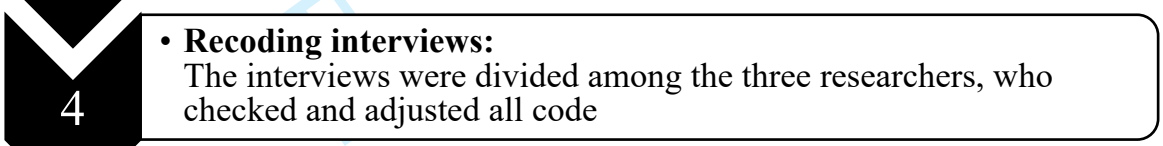

	Less suitable for TC	More suitable for TC
Patient factors	Hearing disability* Language barrier* Patients with psychiatric/ cognitive disorder* Poor health literacy* High risk patients *	Travelling to the hospital is suboptimal* High health literacy*
Nature of consultation	Breaking bad news*** Assessment of new complaints*** New patients***	Regular follow-up consultation, without indication of complications*** Test results (exception of bad news)***
Condition monitoring	Physical examination* essential*	Symptoms* Bloodwork* Self-limiting parameters* (weight, length) Radiology Imaging*
Phase of condition	Early follow-up (first 2 years of oncology follow-up, high risk)*	When follow-up frequency is high**

COREQ Checklist

No. Item	Guide questions/description	Answer	In article?	Page
Domain 1: Research team and reflexivity				
Personal Characteristics				
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	The 14 research students	Yes	6
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Research students in masters phase of medical education, senior researchers, all either professor or PhD	Yes	6
3. Occupation	What was their occupation at the time of the study?	Students, clinicians, and senior researchers	Yes	6
4. Gender	Was the researcher male or female?	Mixed (4 male, 10 female)	Yes	6
5. Experience and training	What experience or training did the researcher have?	No experience, but were trained by experienced interviewers and performed practice interviews	Yes	6
Relationship with participants				
6. Relationship established	Was a relationship established prior to study commencement?	No previous relationship established	Yes	6
7. Participant knowledge of the interviewer	What did the participants know about the researcher? E.g., personal goals, reasons for doing the research	Nothing personals, but they were fully informed about the goals and reasons for the research.	Yes, mentioned that informed consent was obtained.	7,8
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? E.g., Bias, assumptions, reasons and interests in the research topic	Their profession, phase of school for student researchers	Yes, although not completely	6
Domain 2: study design				

Theoretical framework				
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Phenomenology	Yes	5
Participant selection				
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposive.	Yes	6
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Telephone, mail (patients) Email: HCP	Yes, both	6
12. Sample size	How many participants were in the study?	82 patients, 58 HCPs	Yes	8,9
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Refusal was not retrievable with large group of includers. There were no drop-outs.	Yes	8
Setting				
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	The interviews were held by phone or via Microsoft Teams	Yes	7
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No-one beside interviewer and participant were present, except for the practice interview when one other research student was present feedback	Yes	7
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Yes, in table and text.	Yes	8,9
Data collection				
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Yes, there were guides and they were pilot tested (for example	Yes	6,7

		Flottorp).		
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No	-	
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Audio recorded	Yes	7
20. Field notes	Were field notes made during and/or after the interview or focus group?	Personal interview notes by some research students, not incorporated in overview research	No	-
21. Duration	What was the duration of the inter views or focus group?	30-60 minutes	Yes	7
22. Data saturation	Was data saturation discussed?	Yes, within the subgoups	Yes	8
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	All participants were given the opportunity to get the transcripts, some patients wanted this.	Yes	7
Domain 3: analysis and findings				
Data analysis				
24. Number of data coders	How many data coders coded the data?	14 in the first phase, 3 in the second phase	Yes	7,8
25. Description of the coding tree	Did authors provide a description of the coding tree?	Through to intensive collaboration a shared codebook was made	Available upon request	-
26. Derivation of themes	Were themes identified in advance or derived from the data?	First deductive then after second cycle of analysis inductive	Yes	8
27. Software	What software, if applicable, was used to manage the data?	Atlas Ti.	Yes	7
28. Participant checking	Did participants provide feedback on the findings?	All participants had the possibility.	No	-
Reporting				
29. Quotations presented	Were participant quotations presented to illustrate the	Yes,	Yes	10,11,14,17

	themes/findings? Was each quotation identified? e.g. participant number			
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes, due to intensive collaboration	Yes	-
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes, with table and intro	Yes	Results: 9-17
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes, with table and intro	Yes	Results: 9-17

Reference:

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Experiences of patients and health care professionals on the quality of telephone follow-up care during the COVID-19 pandemic: *A large qualitative study in a multidisciplinary academic setting.*

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ABSTRACT

Objective: To evaluate the perceived quality of follow-up telephone consultations (TCs) from the perspective of patients and health care professionals (HCPs) of multiple medical disciplines during the COVID-19 pandemic.

Design: A qualitative study using semi-structured interviews and reflexive thematic analysis.

Setting: Seven medical disciplines (general dermatology, dermato-oncology, head and neck oncology, internal medicine, medical oncology, gynaecological oncology and surgical oncology) at a large university hospital in the Netherlands.

Participants: Patients who received and HCPs who were forced to provide TCs as a substitute for outpatient follow-up appointments during the COVID-19 pandemic.

Results: Eighty-two patients and 58 HCPs were interviewed. Predominantly, patients and HCPs were satisfied with the quality of care by TCs. They regarded TCs as efficient, accessible and of acceptable quality, provided there was an established patient-physician relationship, medical complaints were absent and physical examination was not indicated. However, most patients were worried about the accuracy of their health assessment in the absence of nonverbal communication and physical examination. Both patients and HCPs wish to use TCs in the future alternatively with face-to-face consultations.

Conclusion: This study concludes that TCs seem a valuable contribution to the context of follow up care and could partially replace face-to-face consultations. TCs can be performed in stable, chronic patients with whom a doctor-patient relationship has already been established. Face-to-face consultations are considered more appropriate in the case of new patients, emotionally charged or consultations that are more challenging and when clinically relevant physical examination is indicated. Due to the context-dependent nature of experiences of patients and HCPs, TCs should be used with an individually customized approach based on patient- and disease-specifics, in which shared decision-making plays an

extensive role. Before major implementation is considered, sufficient data on the safety regarding missed diagnoses or cancer recurrences should be assembled first.

STRENGTHS AND LIMITATIONS

- This is the first large scale multidisciplinary study to qualitatively investigate the experienced quality of telephone consultations in follow-up care, from the perspective of patients and health care professionals.
- The involuntary character of this experiment provides maximum variation sample.
- Use of validated quality and implementation concepts ensure the relevance and applicability of the data.
- Maximum variation sampling of participants and maximum reflexivity due to a diverse research group reveals empirical and general insights into the participants' perspective.
- The exceptional COVID-19 circumstances could have influenced the participants' opinions and could limit the extrapolation of this data to the non-pandemic context.

INTRODUCTION

The COVID-19 pandemic required hospital organizations to reduce physical contact between physicians and patients and to reorganize public health care immensely. Regarding chronic and non-life-saving care, a difficult trade-off had to be made between the risk of exposure to COVID-19 and the necessity for a physical hospital visit to assure adequate patient follow-up care. This drove innovation in ways in which follow-up care was provided. One of these ways was by means of telephone consultations (TCs).

Studies have shown that costs of healthcare rise due to an increasing frequency in outpatient appointments.[1] Telemedicine has been suggested to improve the efficiency of outpatient follow-up and also appeared to be a suitable tool for follow-up outpatient care in various chronic and oncological conditions.[2–4] In patient surveys, the possibility of fair communication,[5] high patient satisfaction and confidence in its quality were reported.[6,7] The absence of travel costs and benefits of time saving for patients have consistently been identified as predominantly important benefits compared to face to face consultations (FtFCs).[4,8,9]

Although TCs were increasingly utilized for low-risk conditions in the primary care setting, TCs were never harnessed on a large scale in secondary and tertiary care.[10] Concerns about ensuring patient safety by negotiations of clinical risk, uncertainty of diagnosis without performing physical examination,[11] impact on workload faced by health care professionals (HCPs),[12] lack of financial compensation for HCPs and legal restrictions and insurance issues[13,14] impeded implementation. Therefore, evidence on the quality and safety of TCs remained narrow. Studies replacing FtFCs with TCs are considered ethically questionable because of the fear of negative outcome on survival. The COVID-19 pandemic resulted in the

abrupt replacement of nearly all face-to-face follow-up care and naturally realized this experiment.

Statistics about TC-associated efficiency and cost-effectiveness grow. However, there is a gap in knowledge surrounding the patients and HCPs' perceived quality of care of TC for outpatient follow-up. Besides, patient characteristics and conditions that determine whether a TC is suitable remain unclear. The mandatory increase of the use of TC since the COVID-19 pandemic has offered a unique opportunity to take a critical look at the current structure of care. Not only now, but especially in the post-corona era in which regular follow-up care will be scaled up again, the results of this multidisciplinary study could contribute to a guideline for implementation of TC.

The objective of this qualitative study is therefore to evaluate the perceived quality of follow-up through TC by patients and HCPs from multiple medical disciplines in the hospital during the COVID-19 pandemic.

METHODS

Design & setting

This qualitative study was conducted at a large university hospital in the Netherlands using semi-structured interviews with patients and HCPs from seven medical disciplines: general dermatology, dermato-oncology, head and neck oncology, internal medicine, medical oncology, gynaecological oncology and surgical oncology.

Data collection occurred during the COVID-19 pandemic over the period of May to August 2020. The Consolidated Criteria for Reporting Qualitative Research were used for reporting this study's characteristics.[15]

Researchers

The interviews were conducted by 14 student researchers (10 female, 4 male) who were in their masters' phase of medical school, supervised by physicians from the corresponding discipline. Student researchers had no prior experience with qualitative research interviews and were trained by a supervisor with extensive experience in interviewing and qualitative research. Training included several teaching sessions and taking at least two trial-interviews with peer feedback using an interview guideline.[16] No previous relationship between researchers and interviewees was established. Data were merged and analysed by six of the student researchers, under supervision of four senior researchers: two professors (one in Internal Medicine and one in Gynaecological Oncology), one Epidemiologist experienced in qualitative research and one expert in qualitative research/policy making.

Participants

As we sought the perspective of both patients and HCPs, we included two groups of participants. Inclusion criteria for patients consisted of 1) follow-up care received via a TC instead of FtFC 2) were able to understand and participate in verbal conversations 3) were at least 18 years old 4) Dutch speaking. With deductive purposive sampling patients were preselected by treating physicians while maximum variation was aimed with respect to age, gender, clinical diagnosis and follow-up interval. Selected patients were contacted via email and telephone.

The inclusion criterion for HCPs was having conducted a TC as a replacement of a FtFC. Maximum diversity was attempted to be achieved and was based on gender, age and

occupation (i.e. nurse, nurse practitioner, resident or medical specialist). HCPs were contacted via email.

According to the theory of information power, having a broad aim of the study and the use of inexperienced interviewers requires a larger group of participants.[17] When during two consecutive research meetings (per perspective) incoming interview data produced no new information for the constructed theories, information power appeared sufficiently strong and inclusion was discontinued.

Data collection

During the semi-structured interviews, open-ended questions were asked using a topic list as the interview guide. As a theoretical framework for the topic list the six domains of health care quality (safe, effective, timely, patient-centred, efficient and equitable)[17] and relevant aspects concerning implementation from the Tailored Implementation in Chronic Diseases Checklist[18] were used. Examples of questions for patients were: 'What is the goal of follow-up for you?' and 'To what extent was this goal achieved by TC?' Questions for HCP's were, for example: 'How did you determine the health status of the patient?' and 'When and for which patient is TC a suitable follow-up tool?' Topic lists were pilot tested and evaluated in weekly online research meetings. Adjustments were made accordingly.

One-on-one interviews were held in Dutch and lasted between 25 and 60 minutes. Patient interviews were held via telephone and HCPs' interviews with Microsoft Teams®, audio only. Written consent was obtained from all participants prior to the interviews and reaffirmed verbally at the beginning of each interview. All interviews were audio recorded, transcribed verbatim and anonymized. Once transcribed, the recordings were deleted. Member checking was used for a proportion of the data.

Data Analysis

The reflexive thematic analysis (RTA) framework by Braun and Clarke,[19] a method for systematically identifying, organizing, and capturing patterns of meaning across narratives, was used as an analytic guide for this study. Analysis was performed with the aid of Atlas Ti®, an electronic coding software.

RTA was completed in two cycles. In the first cycle the codes were individually applied by the 14 student researchers. Through a shared codebook (per perspective), inter-coder agreement was attempted. This codebook provided the base for the 2nd cycle of analysis. After merging the data, six student researchers (three per perspective) systematically recoded all the data in 4 steps, as shown in Figure 1. New codes, adjustments of codes and ambiguous codes and quotations were frequently discussed within the research group. Finally, the applied codes were randomly checked by the senior researchers to ensure inter-coder agreement, quality of codes and to examine the influence of the student researchers on the collection of the data and the interpretation of the themes. By presenting summaries, visualizing relations and discussions within the research group themes were constructed from the data. During this process deductive and inductive analysis were both used interactively :[20] deductively, the data was interpreted from the theoretical knowledge of the six quality domains. With an iterative approach to the data new insights emerged and these formed inductive themes. Themes were grouped based on their interconnection.

RESULTS

Study population

A total of 82 patients and 58 HCPs, among whom 44 physicians and 14 nurse practitioners were interviewed. No dropout interviews were reported. Among the patients, 44 (54%) were

female and age ranged from 26 to 84 years (mean: 59.1, SD: 14.7 years) and they lived at a distance from the hospital between 0.3 km and 267 km (mean: 40.9 km, SD: 42.4). Regarding educational level, 17% of the patients had completed low, 40% medium and 29% high education. In 16% of the population, educational level was unknown. Patients were diagnosed with a broad variety of diseases, see Table 1. HCPs were between 25 to 65 years of age (mean: 43.1 SD: 11.7 years) and 35 (60%) were female. Years of work experience ranged from 0.5 to 35 years (mean: 12.2 SD: 10.2), HCP's occupation is presented in table 1.

Disciplines	**Patients: Diseases (n)**	**Health Care Professionals occupation (n)**
General dermatology	Eczema (6) Psoriasis (4)	Medical Specialist (1) Resident (3) Research Physician (1) Nurse Practitioner (3)
Dermato-oncology	Basal cell carcinoma (2) Squamous cell carcinoma (3) Melanoma (6) Verruca Seborrhoica (1) Skin tumour, unspecified (3)	Medical Specialist (1) Resident (7)
Head and Neck oncology	Laryngeal cancers (4) Pharyngeal cancers (8)	Medical Specialist (3) Resident (5)
Internal medicine	Diabetes Mellitus type 1 (6) Diabetes Mellitus type 2 (5)	Medical Specialist (4) Resident (1) Nurse practitioner (7)
Medical oncology	Mamma carcinoma (6) Neuro-endocrine tumour (6)	Medical Specialist (6) Nurse Practitioner (2)
Gynaecological oncology	Vulvar carcinomas (2) Cervical carcinomas (2) Ovarian carcinomas (2) Endometrial carcinomas (3) Preventive therapy (BRCA1 carrier) (1) Granulosa cell carcinoma (1)	Medical Specialist (5)
Oncological surgery	Sarcomas (5) Melanoma (2)	Medical Specialist (7) Physician Assistant (1)

Thyroid carcinomas (2) Merkel cell carcinoma (1) Mamma Carcinoma (1)	Supervising nurse (1)

Table 1. Representation of diseases in the patient population. n = number of patients.

Themes

The experiences regarding the quality of TCs were classified within three interconnected themes: (1) individual (2) inter-personal and (3) contextual. A fourth theme: Future implementation was considered a separate category. (Sub)Themes will be explained and accompanied by quotes where relevant.

Individual

This theme concerned aspects of TC in relation to the individual patient or HCP. Within this category four sub-themes were identified: assessment of health status, wellbeing at the time of a TC, time management and job satisfaction.

Assessment of health status

For adequate health assessment, physical examination was believed to be essential by most patients and HCPs. Patients were concerned about the validity of HCP's health assessment via TC and subsequently some were insecure about their health status. To some patients, receiving a physical examination was the main purpose of their follow-up appointment, which made a TC not sufficiently effective for them. This was especially the case for oncological patients, who said they felt more vulnerable due to their life-threatening disease.

"*They just have to feel them [lymph nodes]. So, it doesn't help to discuss it, like... "Do you feel anything?" I mean, I also didn't feel anything when I was primarily diagnosed*" (Patient, gynaecological oncology, early 30s)

The necessity of physical examination was highly dependent on the medical discipline. Disciplines such as internal medicine and surgical oncology were able to rely on lab results and radiographic imagery for disease assessment. On the contrary, oncological dermatologists expressed not being able to perform any adequate assessments with TCs because of the visual and tactile character of their profession. The use of photographs partially compensated for the absence of physical examination but was impaired due to poor quality of photos. Patients however felt more assured, because the photograph functioned as an alternative to physical examination for them. Some HCPs considered physical examination overrated or pointless when recurrent disease cannot be treated curatively and is mainly performed for the patients' reassurance:

Most of the time, as doctors, we need to be honest and admit that the sensitivity of physical examinations is rather limited. Most of the time, if there is something to feel, it will be the patients themselves who first discover it." (HCP, surgical oncology, mid 60s)

Not being able to perform physical examination resulted in a feeling of uncertainty about potentially missed diagnoses or complications for some HCPs. The absence of non-verbal communication contributed to these concerns. Additionally, HCPs felt distressed because evidence on the safety of TCs had not yet been scientifically established.

"You cannot see them [the patients] walking in. It is in their posture, and how fast they walk. Are they out of breath? Can you see whether they are nervous? The tears in their eyes, or how tense they are; these signs reveal everything. How is their hygiene, do they neglect this or not?" (HCP, surgical oncology, mid 50s)

Without a physical examination, and nonverbal communication, HCPs felt they needed to put more emphasis on the verbal component of their consultations and actively engage patients in the conversation. Active questioning, however, did not always lead to sufficient information for the HCPs. Some patients reported they felt a greater responsibility to verbally describe their medical state or perform self-examination with TCs than with FtFCs. Patients who were experienced with self-examination (e.g. those with a melanoma) felt competent to recognize abnormal symptoms. HCPs said that if they felt any uncertainty about the disease status or if the patient said he/she did not feel reassured patients were invited for an FtFC.

Time-Management

Patients referred to several time saving benefits of TCs: not having to travel to the hospital, not having to spend time in the waiting room, not having to take time off work and not needing to ask family members to accompany them. These benefits did not always outweigh the ability to have a face-to-face conversation with their HCP. This contradicts the assumption of HCPs that patients would favour a TC because of these benefits.

"As a patient you view that [saving travel time] differently; if you think it [a hospital appointment] is necessary and important, you just go to the hospital. Therefore, as a patient, I think that travel time is a less important factor." (Patient, medical oncology, mid 70s)

HCPs experienced more flexibility and easier time management using TCs. Most HCPs expressed that a TC consumed less time than an FtFC because of the absence of a physical examination and being able to multitask. However, some HCPs experienced the overall efficiency as less because of secondary FtFCs, when a TC was not sufficient.

Wellbeing at the time of a TC

Various patients who were asymptomatic at the time of TC said that if they were to experience complaints, they would not have been happy with a TC. This was mainly due to their desire for a physical examination and the need of face-to-face reassurance. For relatively healthy patients who had regular uncomplicated follow-up consultations, TC was mostly experienced as sufficient: both patient and HCP saw little added value of FtFCs under that circumstance.

Job satisfaction (HCP)

Several HCPs expressed lower job satisfaction with performing TCs. This was mainly due to the lack of face-to-face interaction with TCs, which was a large motivation for them to become a HCP.

"I didn't become a physician to work in a call centre." (HCP, dermato-oncology, early 30s)

Interpersonal

Subthemes regarding the interaction and communication between patients and HCPs during a TC were categorized as interpersonal. Three sub-themes were identified: mutual knowledge and trust, connection and transmission of information.

Mutual knowledge and trust

A previously established patient-HCP relationship was regarded as an absolute precondition for reliable communication during a TC by both patients and HCPs. HCPs found that managing patients who they had spoken to in person previously was easier because they could better assess the patient specific needs and determine the reliability of the patients' answers. Some HCPs however still doubted the reliability of the patients' verbal information which they could not objectify with a physical examination or a hetero anamnesis as they would do during a regular FtFC. HCPs worried that some patients (intentionally or unintentionally) downgraded symptoms or withheld certain complaints/information. This was confirmed by some patients:

"If he [the HCP] asks me what my weight is, then I can say 50 kilograms, you tend to round the numbers down a little, but if I stand next to them on the scale, there isn't the possibility to lie. Over the phone it is easier to fool someone." (Patient, internal medicine, early 70s)

Patients expressed that having met the HCP in a previous FtFC made them more confident and reassured about the received health care during the TC. Trust in the HCP and the provided health care was reinforced when HCPs mentioned to patients that in case of need or uncertainty, they would be welcome at the outpatient clinic.

Connection

Almost all patients felt they could express their concerns and did not feel a difference in the HCPs empathetic ability over the phone. When looking closely to verbal expressions in communication during the interviews, TCs were described as more distant or business like, while FtFCs were referred to as easier and more reassuring. The feeling of reassurance was

greatly influenced by the connection between patient and HCP. Lack of non-verbal communication seemed one of the most explanatory factors for these differences.

"And when you do go see a doctor, after leaving you are a little more at ease. I can't explain exactly how that works." (Patient, gynaecological oncology, mid 70s)

Some patients were more hesitant to talk about death and sexuality during a TC than in FtFCs. Other patients however preferred a TC for speaking about these subjects:

"I think talking on the phone might make it easier to communicate, because you don't have to look them [the doctors] in the eyes. That is the difference I think." (Patient, internal medicine, early 60s)

HCPs considered the relevance of the connection between patient and HCP dependent on the nature of the consultation; especially bad news conversations were considered inappropriate to be performed through TC.

Transmission of information

TCs were usually held one-on-one between patient and HCP. Including family or friends in the conversation through speakerphone was experienced as chaotic by HCPs and it impaired the communication with the patient.

"If you go there [to the hospital] together, you both pick up on something [in the conversation]. When you talk about it [consultation] again afterwards, you have the feeling

you remembered more. That is less the case with the telephone". (Patient, medical oncology, early 60s)

Another limiting factor in the transmission of information was the inability for HCPs to show scans or to draw pictures in explaining disease patterns and handing out information brochures. This was highly missed by the HCPs and patients:

"It is good that when another scan is done, we can look at the images together [patient and HCP] And that I can also get an impression of where the tumour is and if it corresponds to my complaints, for example?" (Patient, medical oncology, early 60s)

Contextual: COVID-19

Both patients and HCPs were relieved that during the pandemic, consultations could be continued in the form of TCs. Some patients were anxious for a COVID-19 infection and wished to stay away from the hospital, which they considered a particular place of risk. Thus, the change to TCs was understood and accepted by the majority of the patients. Some patients expressed that they would prefer an FtFC in a non-pandemic situation. Other patients felt that after using TCs multiple times they would get used to it and appreciate it more. HCPs could accomplish more with TCs than they had initially expected. TCs forced HCPs to critically and individually prioritize care. HCPs identified the COVID-19 pandemic as a catalyst to re-evaluate follow-up care.

Implementation: Customized care

Most HCPs were positive about the use of TCs within follow-up care. They considered TCs to be patient-centred and an accessible way of delivering care. However, HCPs and patients felt there would always be a need for face-to-face interaction between patients and HCPs. In

all disciplines, both HCPs and patients preferred a combination of FtFCs and TCs in follow-up care. Patients highly valued being engaged by the HCP in deciding upon a TC or an FtFC for the next consultation.

Most HCPs felt the quality and efficiency of TCs could be better ensured when selecting patients based on, for example, the nature of consultation, relevance of physical examination and patient and disease characteristics. Some HCPs felt that with profound selection, full-fledged care could be delivered. Figure 2 shows an overview of characteristics as a basis for the selection of patients. HCPs commented that these circumstances are multifactorial and an individual decision is necessary.

"The decision as to whether a telephone consultation takes place depends on the patient themselves, their treatment, situation, residence and network surrounding them. There are too many factors in order to be able to say: yes, this patient surely has to be on the outpatient clinic or whether the problem can be solved through a telephone consultation. At least not in my opinion, there isn't a recipe saying: "following these criteria, this must happen." (HCP, medical oncology, early 60s)

DISCUSSION

The insurmountable switch from face-to-face consultations (FtFCs) to telephone consultations (TCs) for follow-up care during the COVID-19 pandemic presented a unique opportunity to explore the actual experiences of patients and health care professionals (HCPs) with this method of interaction. Patients as well as HCPs describe experiences regarding TCs both positive and negative that are highly dependent on the character and specific circumstances of the consultation. Predominantly, patients and HCPs were satisfied with the

provided care by TC. As eluded from 140 interviews with patients and HCPs from a variety of medical disciplines, TCs are considered suitable for stable, chronically ill patients with whom a patient-HCP relationship has already been established, and in those for whom travel is a major barrier. Additionally, FtFCs are considered more appropriate in the case of new patients, bad news conversations and when clinically relevant physical examination is required.

Studies performed in primary care prepandemically show similar results: McKinstry et al[21] dscribes the importance of a previously established patient-HCP relationship, allaying concerns regarding the trust in the physician and accuracy of the patients' verbal information. A systematic review by Carillo de Albornoz et al[22], shows TCs to be as effective as FtFCs in primary care and considers TCs best for patients with chronic conditions who require regular medical follow up, which also imbricates our study population. This review[21] also describes patient satisfaction with TCs to be high, but patient experience appeared to be better with FtFCs. With our qualitative approach,
we found the difference between satisfaction and experience mainly lies in the absence of non-verbal communication and the feeling of reassurance with the physical presence of a health care professional. Although this study has been performed in a secondary care setting, these aspects relate to key features of TCs and are thus relevant in both settings.

Stating the obvious and as described in previous research, the absence of a physical examination led to a lower perceived quality of care by most patients and HCPs, making patients feel anxious about the proper assessment of their clinical status.[23] What stands out are the differing opinions: while for example interviewed dermatologists plea they cannot execute their jobs without physical examination, other doctors state that they can easily go

without physical examination as long as other ways to monitor the clinical status are available, as shown by previous studies.[2,24,25] The role of physical examination to reassure patients in follow-up care has been discussed by Zaman et al.[26], who concluded it to be a patient-centred and intimate ritual of positive attribution to the patient-physician relationship. In a survey study by Kadakia et al.[27], patients with cancer appraise both the pragmatic and symbolic aspects of physical examination, which confirms our findings that especially oncological patients are more likely to highly value physical examination: a decreased sense of reassurance is directly associated with reduced perceived quality of care. For this specific group, the benefits of TCs did not outweigh the value of being able to physically attend a follow-up appointment, shining a new light on the literature thus far. In addition, some HCPs in our study mentioned using physical examination for reassurance of patients rather than for diagnostics. The role of physical examination therefore seems ambiguous for both HCP and patient. Nevertheless, reassurance seems to play a crucial role, especially in oncological care, and yet seems to be better accomplished face-to-face. We discovered that purely the option for an FtFC after a TC contributes to the reassurance of both patient and HCP.

Although TCs have been shown to be shorter in time per consultation in other studies,[28,29] HCPs in our study stated that efficiency can be compromised when patients come to the hospital for an additional FtFC after an unsatisfactory TC which was previously shown by Mc Kinstry et al.[21]. Since, in the first place, the demand for TC in high-income countries partly arose from the aim to drive up efficiency and lower healthcare costs,[30,31] it is questionable if these goals can be achieved at present. To ensure efficiency, proper and adequate selection of patients in whom a TC is most likely to be successful, is therefore crucial.

Until this day, virtual care has predominantly been studied through satisfaction questionnaires in order to achieve some form of quantification.[32] Most studies show promising results when it comes to the future of TCs: higher levels of patient satisfaction have been reported for TCs compared to FtFCs.[33] Byravan et al.[34] found that 23.5% of patients would have preferred FtFCs, but 43% of patients would not mind conducting all future appointments by TC, as was assessed by questionnaires. In our study, however, many patients and HCPs preferred FtFCs, and provided reasons and explanations, which amplified the complementary value of a qualitative approach. Harris[35] empathizes that consensus and consistency statistics are generally weak between these two research methods. Qualitative research enables a deeper, more layered, analysis that addresses topics that would be missed, never addressed or underestimated by questionnaire exploration. An example of this depth are patients mentioning to feel a greater responsibility to appear better verbally in a TC. Also, the expression of lower job satisfaction with performing TCs by several HCPs and the lack of human-to-human interaction during TCs demonstrates the added value of this study's approach.

Strengths and Limitations

This is the first large-scale qualitative studies within this subject with a multidisciplinary approach executed by a diverse research group to establish maximum reflexivity. The use of validated concepts for the qualitative analysis ensured that discussed subjects were relevant to patients and HCPs. The involuntary character of this experiment can be seen as a strength regarding exploring the experiences with TCs: many patients admitted that after an initial hesitation or resistance they eventually concluded to be convinced of TCs. For example,

Beaver et al.[33] noticed a preference for clinical examination and FtFCs as reasons for refusal of participating in their study, leading to a highly selected population biased towards patients favouring TCs. This might explain the difference with our results and highlights our added value compared to previous studies. The rapid setup provided in-depth information about the participants' first experiences, but also presented limitations: participants were aware that TCs were performed for their own safety and were therefore possibly more accepting than in non-pandemic times. In addition, interviews were conducted by inexperienced interviewers, which, despite interview training sessions and using a shared topic list, could have resulted in varying interview quality. However, with our large population information power appeared strong and it is unlikely that this has led to missing relevant information. The majority of the specialties (5/7) concerned oncological related care, which resulted in a less diverse multidisciplinary approach. Lastly, it is important to mention that safety has not been investigated in this study, at best the perceived feeling of safety has been explored.

Implications

TC and FtFC should be seen as two different forms of consultation, both unique in nature and irreplaceable by the other without compromising on experienced quality. TCs will provide a limited, nonetheless valuable part of care. The transformation to this hybrid form of outpatient consultation brings challenges that can be overcome with thorough research and attentive implementation. When considering follow-up care to be performed through TC, the optimal form of care should be based on patient and disease specific issues and should be chosen together with patients. It seems important not to overlook the fact that shared decision-making concerns not only the content (e.g. what is the value of physical examination for this specific patient) but also the manner of the follow-up (can TCs be alternatingly used

with FtFCs and which frequency suits this patient best?). This hybrid form can be flexibly used to provide tailored care for the individual. One could consider the use of TC as a low-threshold screening instrument. For some patients, this 'screening TC' may lead to an additional FtFC to still perform physical examination. In others, efficiency is increased for both patient and HCP as TC appears to be sufficient and FtFC can be postponed.

Future research should specifically focus on the safety of TCs using quantitative research methods, where benefits of TCs can be weighed up against potential risks of missed diagnoses. Additionally, future research could focus on asking HCPs before and after whether the consultation could have been virtual or not. This might give an indication of the potentials of TC, and how well this can be estimated in advance. The interviews with HCPs suggest that this can be challenging.

In our interviews, many patients showed curiosity towards implementation of video consultations (VC) to possibly alleviate the lack of non-verbal communication. Barsom et al[7] found that, according to previous studies, almost half of the patients preferred VCs over TCs to communicate with their surgeon because of the benefits of providing visual feedback. A qualitative study on VCs in primary care by Donaghy et al[4], additionally found that these visual cues increased patients' confidence in the consultation. However, Hammersley et al,[36] reported no significant differences between TC an VC regarding consultation quality. The equivalent quality and VC not offering added value or expecting a short call without unforeseen news[7] might play a role in the potential irreplaceability of TCs by VCs.

Conclusion

With the rise of the digital age also the healthcare industry is increasingly exploring alternative methods aiming to deliver more patient-centred and efficient care. This presents the idea of a health care system in which remote consultation is expected to become the norm. According to the experiences of our participants, transition to solely remote care by TCs is undesirable because the need for face-to-face interaction will continually persist. These conclusions are based upon the perceived quality of care, while the actual safety of TCs has not been established yet but remains the paramount goal of care. Nevertheless, TCs have also shown promising beneficial elements. Thereby, used with a customized approach, taking contextual factors into account and alternating with FtFCs, TCs were considered a valuable contribution to current follow-up care.

Competing interests and financing

The researchers indicate that the authors have no competing interests. This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Ethical Approval

This study was approved by the institutions ethical board (REB: 202000355). Written consent was obtained from all participants.

Patient and Public Involvement

Patients and the public were not involved in the design, reporting or dissemination plans of our research.

Data sharing statement

Deidentified interview data is available from the authors upon reasonable request.

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AUTHOR CONTRIBUTIONS

MM, GW, GH, BL, ER, AR, BM and HZ contributed to the design and conception of the study protocol. FM, MP, EB, CG, MH, SO analysed the interview data. Themes and concepts were settled on by discussion with HZ, GW, MM and BM. FM, MP, EB and CG drafted the manuscript which was revised by all other authors (MH, SO, MM, GW, GH, BL, ER, AR, BM and HZ). All authors approved it for publication.

Legends figures:

Figure 1. Four steps by which the data was systematically reviewed and recoded.

Figure 2, Spectrum of suitability for telephone consultations in follow-up care. Telephone consultation (TC)
** quoted by health care professionals (HCP)*
*** quoted by patients*
**** quoted by both health care professionals as patients.*

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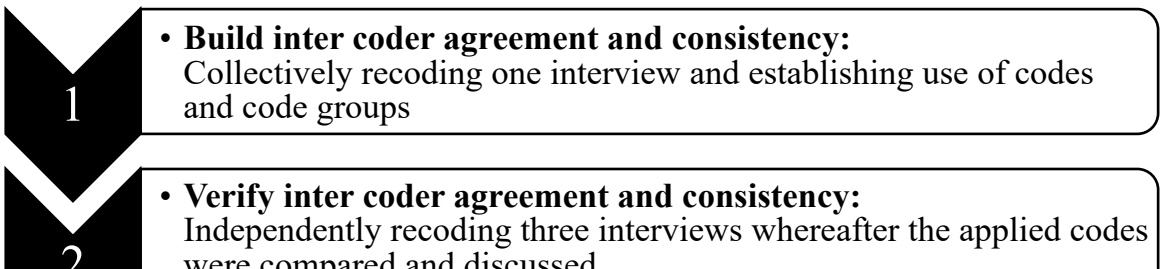

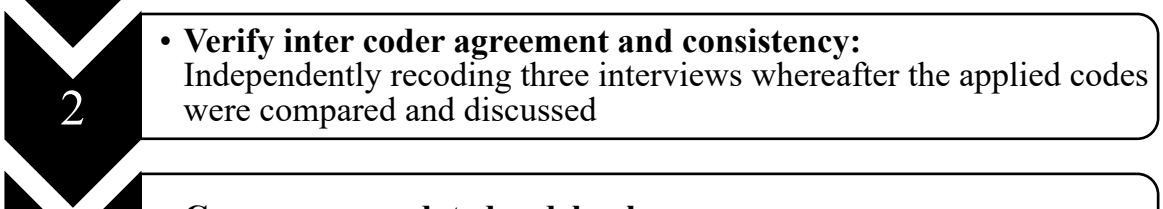

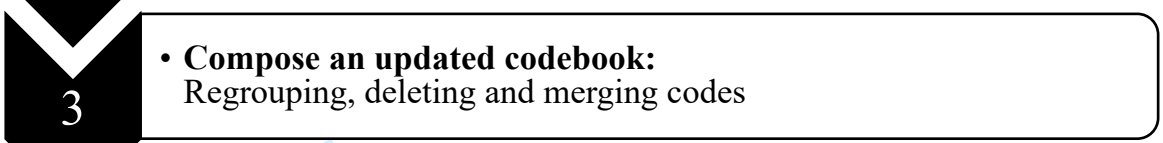

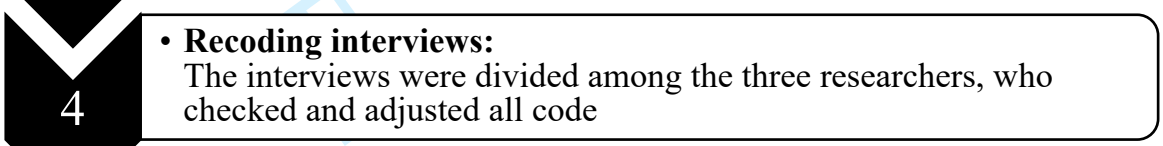

	Less suitable for TC	More suitable for TC
Patient factors	Hearing disability* Language barrier* Patients with psychiatric/ cognitive disorder* Poor health literacy* High risk patients *	Travelling to the hospital is suboptimal* High health literacy*
Nature of consultation	Breaking bad news*** Assessment of new complaints*** New patients***	Regular follow-up consultation, without indication of complications*** Test results (exception of bad news)***
Condition monitoring	Physical examination* essential*	Symptoms* Bloodwork* Self-limiting parameters* (weight, length) Radiology Imaging*
Phase of condition	Early follow-up (first 2 years of oncology follow-up, high risk)*	When follow-up frequency is high**

COREQ Checklist

No. Item	Guide questions/description	Answer	In article?	Page
Domain 1: Research team and reflexivity				
Personal Characteristics				
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	The 14 research students	Yes	6
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Research students in masters phase of medical education, senior researchers, all either professor or PhD	Yes	6
3. Occupation	What was their occupation at the time of the study?	Students, clinicians, and senior researchers	Yes	6
4. Gender	Was the researcher male or female?	Mixed (4 male, 10 female)	Yes	6
5. Experience and training	What experience or training did the researcher have?	No experience, but were trained by experienced interviewers and performed practice interviews	Yes	6
Relationship with participants				
6. Relationship established	Was a relationship established prior to study commencement?	No previous relationship established	Yes	6
7. Participant knowledge of the interviewer	What did the participants know about the researcher? E.g., personal goals, reasons for doing the research	Nothing personals, but they were fully informed about the goals and reasons for the research.	Yes, mentioned that informed consent was obtained.	7,8
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? E.g., Bias, assumptions, reasons and interests in the research topic	Their profession, phase of school for student researchers	Yes, although not completely	6
Domain 2: study design				

Theoretical framework				
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Phenomenology	Yes	5
Participant selection				
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposive.	Yes	6
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Telephone, mail (patients) Email: HCP	Yes, both	6
12. Sample size	How many participants were in the study?	82 patients, 58 HCPs	Yes	8,9
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Refusal was not retrievable with large group of includers. There were no drop-outs.	Yes	8
Setting				
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	The interviews were held by phone or via Microsoft Teams	Yes	7
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No-one beside interviewer and participant were present, except for the practice interview when one other research student was present feedback	Yes	7
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Yes, in table and text.	Yes	8,9
Data collection				
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Yes, there were guides and they were pilot tested (for example	Yes	6,7

		Flottorp).		
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No	-	
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Audio recorded	Yes	7
20. Field notes	Were field notes made during and/or after the interview or focus group?	Personal interview notes by some research students, not incorporated in overview research	No	-
21. Duration	What was the duration of the inter views or focus group?	30-60 minutes	Yes	7
22. Data saturation	Was data saturation discussed?	Yes, within the subgoups	Yes	8
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	All participants were given the opportunity to get the transcripts, some patients wanted this.	Yes	7
Domain 3: analysis and findings				
Data analysis				
24. Number of data coders	How many data coders coded the data?	14 in the first phase, 3 in the second phase	Yes	7,8
25. Description of the coding tree	Did authors provide a description of the coding tree?	Through to intensive collaboration a shared codebook was made	Available upon request	-
26. Derivation of themes	Were themes identified in advance or derived from the data?	First deductive then after second cycle of analysis inductive	Yes	8
27. Software	What software, if applicable, was used to manage the data?	Atlas Ti.	Yes	7
28. Participant checking	Did participants provide feedback on the findings?	All participants had the possibility.	No	-
Reporting				
29. Quotations presented	Were participant quotations presented to illustrate the	Yes,	Yes	10,11,14,17

	themes/findings? Was each quotation identified? e.g. participant number			
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes, due to intensive collaboration	Yes	-
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes, with table and intro	Yes	Results: 9-17
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes, with table and intro	Yes	Results: 9-17

Reference:

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