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RESEARCH PAPER

"Do I need it? Do I really need it?" Elderly peoples experiences of unmet assistive technology device needs

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An unmet need for assistive technology devices (ATD) occurs when a person would benefit from ATD, as assessed by health-care professionals or by the person in question. Unmet ATD needs in the elderly population have been documented, but little is known about the experience of living with such unmet needs. *Purpose:* To investigate the unmet need experiences of home-dwelling elderly people in Norway who have applied for ATD. *Method:* Nine elderly people who lived at home and had applied for ATD were interviewed. The interview transcripts were analysed within a hermeneutical phenomenological perspective. *Results:* The unmet ATD need experiences involved enduring a difficult situation by adjusting their expectations and activities, being introduced to ATD as a possible solution to the difficulties and negotiating this potential solution in light of the perceived situation. *Conclusion:* Observers assessments of unmet ATD needs are not readily experienced as such by the elderly. Adjusting expectations and activities enabled the participants to maintain meaningful activities but also made the difficulties less likely to be articulated as unmet needs. When encountering elderly people, health-care professionals must be sensitive to the unarticulated needs and potential difficulties of the elderly in performing everyday activities.

Keywords: Unmet need, assistive technology, assistive devices, elderly, occupational therapy

Implications for Rehabilitation

- Health-care professionals must allow elderly people to define their individual difficulties and state their need for assistive technology.
- Elderly people are creative problem solvers when managing difficulties in their everyday life.
- Providing information on assistive technology devices and how to obtain them is not sufficient to prevent elderly people from living with unmet assistive technology needs.

Introduction

Early intervention and prevention of chronic and disabling conditions have been identified as key targets for meeting future health care challenges [1,2]. As one of many tools used in rehabilitation, providing assistive technology devices (ATD) has the promise to be a cost-effective and constructive part of the solution to the challenges ahead [3,4]. To achieve their potential, however, these devices must be provided and used properly.

During a longitudinal research project focusing on the experiences of elderly people applying for and starting to use assistive technologies, a delay was found between experiencing difficulties performing activities and contacts with health care personnel to apply for a device. International self-report and observational research confirmed unmet ATD needs in the elderly population [5–7]. In this article, an unmet need is defined as a situation in which a person could benefit from ATD, as assessed by health-care professionals or by themselves. Why do elderly people live with what health-care professionals define as unmet ATD needs rather than seeking assistance? A review of the literature gave insight into the prevalence of and possible reasons for unmet needs, but there seems to be less known about how elderly people experience situations that health-care professionals assess as unmet needs. The purpose of this article is to investigate unmet ATD need experiences in the context of

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home-dwelling elderly people in Norway who have applied for ATD.

In this article, ATD is defined as devices that help reduce the practical problems faced by a person with a disability [8]. More specifically, this article focuses on ATD that compensate for difficulties with mobility and performing self-care, devices that are common among elderly people [5]. Providing ATD for people with disabilities is publicly funded in Norway [9] when the devices are part of a comprehensive plan, as the devices help to improve functional capacity, increase self-sufficiency and facilitate the care of people with disabilities [8]. Municipalities have the major responsibility for the prescription process, which may involve several health-care professions. This responsibility includes discovering and analysing local ATD requirements [8], but the prescription process, which is outlined in Figure 1, is initiated by the experience of a practical problem.

Previous research has examined the extent and possible reasons for living with unmet ATD needs in elderly populations. A Dutch study has found unmet needs in 45% of home-dwelling elderly people [7], whereas another study among elderly single-living people in five European countries has reported that 17% had unmet ATD needs [5]. The researchers discovered differences between the countries in the levels of unmet needs and attributed this to differences in the welfare systems and the availabilities of specific professional competencies [5]. Another proposed reason for unmet needs was a lack of awareness of ATD in the elderly population [5].

Lack of information as an explanation for living with unmet needs of ATD was also found in a study by Mann et al. They asked elderly Americans what ATD they would like to have but had not found, and they discovered that all of the devices the participants suggested already existed [10]. The researchers attributed this lack of knowledge to the rapid development of new technology, and encouraged consumer awareness programs and evaluations by health-care professionals to minimize the knowledge gap [10].

A more recent study from Belgium also reported a lack of ATD awareness among the elderly. The researchers attributed this deficiency to a lack of ATD knowledge among the community nurses, a main source of information for home-dwelling elderly people who experience health problems [11]. Thus, unmet ATD need seems to be related to rapid technological development and the availability of knowledge resources. In other words, it is possible that if more people knew that ATD are available, they would not live with unmet needs and would take action to fulfil these needs.

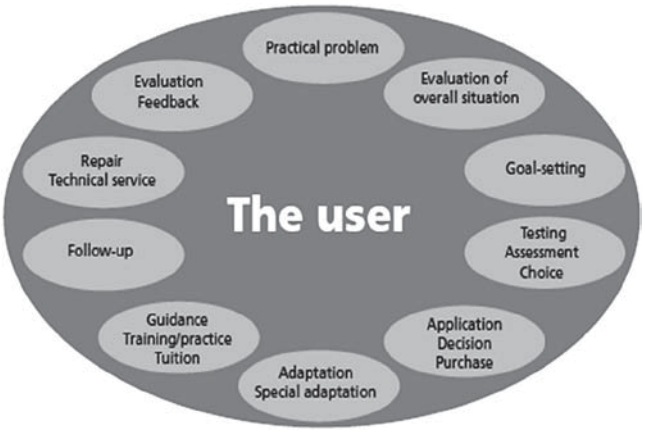

Figure 1. The provision process.

However, there are barriers that may delay seeking help. Some elderly people do not see themselves as needing help, even though they live in what health-care professionals would assess as difficult situations [6]. Living with difficulties without articulating needs has been interpreted as refusal or denial, which (along with resistance to acknowledging a social identity as an elderly person) contributes to a reluctance to seek help [12]. Another barrier is interpreting the difficulties as a normal part of the ageing process [12]. Others are embarrassed to discuss their problems with performing everyday life activities, even though they experience such problems [13].

But living with unmet needs may also be associated with the meanings attached to the device. A qualitative study found that both perceived ATD needs and pragmatic assessments contributed to elderly peoples' perceptions that a device might be an acceptable solution to their difficulties [6]. The acceptability of the technology was a significant factor in deciding to apply for ATD [6]. The meanings attached to ATD are shaped by both psychosocial and cultural issues, and the process of adapting to the disability can influence the decision whether to apply for ATD or to continue struggling with unmet needs [14,15]. Indeed, an ambiguous attitude toward ATD has been documented within the elderly population, meaning that they acknowledge the practicality and usefulness of the device while resisting the symbolic meanings of disability and old age that the technology evokes [16–18]. Social environments have also been proven to be influential in decisions to apply for ATD [16,19].

At this point, it seems that living with unmet needs is related to decision-making. As there are no definitions for the potential users' process of deciding to apply for ATD, a definition of patient decision-making that was developed in cancer care was used. This proposal defines patient decision-making as

> "an on-going process comprising cognitive, perceptual, affective, behavioural, and relational components by which individuals select an acceptable solution or a salient alternative concerning a health-related issue, influenced by interactions among individual and contextual factors, culminating in decisional consequences and post-decisional appraisal" [[20] p. 919].

While the decision-making process in cancer care starts at diagnosis [20], the starting point of the process for elderly people who experience difficulties in everyday activities is less fixed [18,19]. Difficulties in everyday activities could be studied from diverse perspectives, for example, within a social or biopsychosocial model of disability. The perspective taken in this article however, is a non-dualistic phenomenological approach which emphasize the body as lived [21]. This approach paves the way for acknowledging experiences of having as well as being a body, which could provide insight into why the elderly live with unmet ATD needs.

From a phenomenological perspective, an acquired disability can be described as a loss or disruption of bodily habits [22]. Habits have been defined as "a flexible, situational, and adjustable ability to act, which also entails the possibility for creativity" [[23] p. 63]. Habits are acquired and developed by being body-subjects [22], which is emphasized as the source of experience and knowledge of the world [22,23]. As body-subjects, there are possibilities of and restrictions on what can be known [22]. Acquiring and developing habits that enable activities of everyday life depend on the interplay between the body-subject and its surroundings [22].

When the experienced body-subject performs routine activities in supportive and familiar surroundings, the performance is fluent and requires minimal attention and energy. The attention is directed towards the projects in the world, with the body being the background and vehicle for action [22]. Having learned to walk, a person can concentrate on what to prepare for dinner instead of where and how to move his feet when he strolls to the shop. However, the habitual way of being in the world can be interfered by illness or disability [22], causing the attention to be directed towards the body in what may be seen as a Gestalt switch [24]. In this Gestalt switch, the body is perceived as an object that forces itself to the foreground of attention, and the outer world, with its projects, subsequently drops into the background [24].

One purpose of rehabilitation is to regain the habits of the body in the sense of acquiring new habits as well as restoring lost or disrupted habits [23]. The rehabilitation process includes deconstructing movement and carefully incorporating skills and tools, aiming at a state where the attention is directed towards the projects in the world [24]. When a tool has been incorporated, the performance becomes habitual and more efficient than performing without it [14].

In summary, unmet ATD needs seem to be a complex phenomenon related to decision-making that is influenced by the knowledge level, sociocultural factors and experiences of disability. Yet none of the above research has studied how unmet needs are experienced by elderly people living at home. The purpose of this current study was therefore to add to the knowledge base by investigating elderly peoples' experiences of unmet ATD needs.

Material and method

This study is part of a larger project investigating how elderly people living at home experience the process of acquiring and starting to use ATD to compensate for difficulties in mobility, performing self-care or both. These activities are often the first activities that present difficulties as people age [25]. Furthermore, devices to compensate for these difficulties are common within this age group [5,18].

The larger project this study is based on includes three interviews with each participant. The first interviews, which were used in this study, took place after the ATD had been applied for but before it was delivered. The participants thus lived with unmet ATD needs, as assessed by both health care personnel and themselves. The second and third interviews took place after the ATD was delivered and after the participant had used the device for at least 2 months. All interviews were performed between November 2009 and January 2011. The interviews this study is based on, however, were conducted between November 2009 and June 2010.

Recruitment

Health-care professionals in two regions of northern Norway informed potential participants of the study when assisting them in the prescription process. The criteria for the involvement in the study were that the desired ATD had to be new to the participant, the participant's age at the onset of disability had to be >67 years, and the participant had to be able to give informed consent to participate in three qualitative interviews. Nine elderly people met the criteria and consented to participate during the recruitment period. The recruitment personnel reported that the reasons for declining participation were a lack of comfort discussing disabilities and the binding commitment to the project necessitated by the longitudinal design of the study. Tables I and II summarize the characteristics of the participants and ATD that were featured in this study.

Gathering the material

The first author, an occupational therapist with experience working in the community health services and prescribing assistive technology, conducted all of the interviews. Drawing on an open interview guide, she asked the participants to relate their experiences of doing activities of daily living and to relate the thoughts, attitudes and deliberations they had toward applying for ATD.

Although an interview guide had been developed, the interviewer encouraged the participants to freely narrate their experiences. The interviews took place in the participants' homes. When the participant lived with a spouse, he or she sat in on the interview if the participant requested the spouse present. The interviews lasted between half an hour and two hours. All of the interviews were audiotaped and transcribed verbatim.

The Regional Committee for Research Ethics and the Norwegian Social Science Data Service approved the project.

Analysis

A hermeneutical phenomenological approach guided the study [26,27]. The German philosopher Hans Georg Gadamer has emphasized the importance of openness and reflection by

Table I. Characteristics of the participants.

Variables		Number of participants (9)
Age	69–90 years	
Sex	Male	4
	Female	5
Main diagnosis	Arthritis	5
	Stroke	1
	Complications after fracture	1
	Unspecified	2
Receiving home health services on a daily basis		5

Table II. Characteristics of the assistive technology devices (ATD) that the participants had applied for.

Type of ATD	Number
Lift chair	2
Bidet	2
Wheeled walker	2
Pillow to get up from chair	1
Electrical powered scooter	1
Sock puller	1
Total	9

moving between the parts and the whole if understanding is to evolve [26]. Max von Manen, the Dutch-Canadian author of a proposal for conducting research within a hermeneutical phenomenological perspective, has advocated a focus on reflection, writing and rewriting to gain a deeper understanding of the phenomenon under study [27]. The hermeneutical phenomenological approach advocates using both description and interpretation throughout the research process to gain insight into the phenomenon [27]. The researchers strove for an open attitude, attempting to make preconceptions explicit and to let the phenomenon show itself [26].

The analysis included several readings of the transcripts and careful listening to the audiotapes to get a picture of the material as a whole [27]. Next, segments of the transcripts that seemed to reveal something significant about the research question were identified and explored. Themes, or interpretations of segments of meaning, crystallized during this process [27]. The interpretations were discussed and challenged, and the themes and research questions evolved through the process of writing and rewriting [27]. All of the transcripts were reread during the writing process to ensure that the themes were relevant and valid. A consensus was reached regarding the themes presented in this article.

Results

Although language cannot fully grasp the entire complexity and meaning of the phenomenon [27], the analysis brought forward three themes that describe significant aspects of unmet ATD needs as experienced by the participants. In short, experiencing unmet needs involved enduring a difficult situation, getting the idea and negotiating new connections. These three aspects will be elaborated on in the following.

Enduring the difficulties

Before applying for ATD, the participants experienced difficulties doing activities over periods ranging from 2 months to 9 years. The difficulties appeared gradually or had a sudden onset, but the participants were creative and assertive in managing their problems. To deal with their challenges, the participants changed and adjusted their habits and ascribed their performance problems to old age.

"I've learned so many tricks": When the participants encountered difficulties doing activities, they adjusted their habits to continue with their activities of daily living. One man noticed that his stability and balance deteriorated, which made it difficult to walk around his neighbourhood. He was afraid of falling, but rather than giving up his daily walks, he started to use his mowing tractor for outdoor transportation. One woman said she was dizzy and afraid of falling, so she relied on shopping trolleys for support when she went shopping. Another woman, who experienced toileting difficulties, stopped taking diuretics and restricted her fluid intake to reduce toilet visits when she went out on errands or visited friends.

"The others are my devices": When adjusting habits failed to allow performing activities of daily living independently, the participants asked for and received help from others. Spouses, friends, passers-by or representatives of health services offered practical help, and the participants considered this help to be a good solution to their practical problems in most cases. One woman demonstrated the opposite when she had toileting difficulty after a shoulder surgery that rendered her unable to use either arm. She went swimming with her friends on a regular basis, and her friends helped her wash her back and get dressed. As she exclaimed, however, "I can't ask someone to wipe my behind!"

Asking other people for help was a means of managing daily life, but receiving help also meant that the potential benefit of ATD remained invisible. For example, one man said that he could get out of chairs, but only when his wife took him by the arm and helped him. As he was able to get out of chairs with her help, he did not initially acknowledge that a lift chair could be useful for him.

"You just have to clench your teeth, there's nothing more to it": The participants' view of their problems varied from tolerating their situation to addressing it. Either way, the ideal attitude as expressed by the participants was a positive and constructive outlook on life and the challenges they faced. They strove to be satisfied with their situations and make the best of it with the means available; they were proud of managing on their own without "whining and moaning". This pride was a considerable resource in that it prompted creativity and immediate action to improve their situation. Nevertheless, it could also be counterproductive, in the case of a woman who delayed relating her toileting problems, for example. Trying to manage her problems on her own made her less aware of the knowledge and assistance her social environment could provide. Another man stated "It's not the biggest of problems. One can live with it" when describing his difficulties getting dressed. A method of playing down the importance of the difficulties they experienced was to ascribe the difficulties to the ageing process, which they thought was beyond their control.

Getting the idea

The participants stated that knowledge of available ATD and how to obtain them was provided by their social environment, which included family members, friends and health-care professionals. On most occasions, this information was provided to the participants by chance and not because they actively sought it.

"It's my daughter who has all the ideas": Although some of the participants struggled to maintain the activities that were important to them, they did not consider the potential of ATD for improving the situation. One man said that it was his

daughter "who has all the ideas" and that she had contacted the occupational therapist to assess his needs for adapting in the home. "We didn't know about the possibilities," he said. The sons of a woman who had had an incident at home that resulted in a short hospital stay informed her that they had assumed responsibility for her situation. They applied for assisted living and arranged an appointment with the occupational therapist to assess her ATD needs so that she could be safer and more independent at home. When asked how she felt when her sons took over, she answered that she approved of them acting when she was unable to fend for herself at that time. She had struggled for a long time, and it had not occurred to her that she could make use of or apply for ATD. In addition to knowledge about devices and systems, the social environment could also provide encouragement and recommendations. One man said that he decided to apply for an electrical powered scooter after his brother recommended it to him. He said that his brother was more sceptical about technology; therefore, he knew that the scooter must be really useful.

"I talked with the occupational therapist, and she thought that I needed this": For many of the participants, meeting with an occupational therapist or other health-care professional allowed them to understand their difficulties as situations that could be handled or improved by introducing ATD. One woman said the therapist brought with her a catalogue with pictures of various ATD that she could flick through, and she made the following comment:

> "I noticed several things; for instance, a back washer with a long… curved handle on it. . (…) And I got something to… apply moisturiser on my back. So, I was so lucky she brought the catalogue!"

The occupational therapist described various devices that could be helpful in eliminating or diminishing the participants' difficulties. The role of the social environment as a knowledge source or as a new perspective on a distressing situation was highlighted for the participants in all of the situations studied.

Negotiating new connections

Although the participants knew about ATD possibilities, some stated that they deliberately delayed applying for ATD because it took some time to get used to their need for them. The participants balanced the positive aspects of ATD against their expectations, views of self and everyday lives. The ATD were not taken at face value; the decision to apply for them involved balancing the potential positive aspects with the impact on their self-image and image of their situation.

"The devices ease my day, of course": After they applied, the participants looked forward to receiving the ATD and hoped that it would ease their daily life. The potential for being independent of help from other people was viewed as a major benefit. The participants with previous experiences using ATD acknowledged that they would be helpless without their device and praised their usefulness. At the same time, they would prefer being independent of the ATD and able to do everything that they could do before their difficulties arose. However, the overall attitude and expectation toward ATD was positive, although the participants had concerns about some specific devices in their specific situations. One woman said that she considered applying for a bread knife and cheese slicer with special handles and stated the following:

> "And I think to myself, 'Do I need it? Do I really need it?', as my sons can do my shopping and slice my bread".

"You've got to get back to normal again, and not just rely on the devices":

Although ATD gave hope for independence and an easier life, they also represented something new. They represented a change in the participants' situations and something they had to think about carefully before making a decision to apply.

One woman said that she delayed accepting her doctor's offer to help her apply for a wheeled walker because she felt too young and too healthy to start using it. Another woman revealed that she resisted the idea, as the walker would make her look very old. Others told her that she looked young for her age, and she put great effort into her appearance. An occupational therapist suggested that she get a wheeled walker, and she stated that in her initial reaction to this suggestion, "I thought to myself; am I really getting a walker? Then I'll look like I'm a hundred years old!" The participants also expressed concerns that a device would make them more dependent. They said that applying for ATD represented giving up hope to be able to be independent in their activities.

Although the wheeled walker had significant meaning ascribed to it as a symbol of old age, other devices could tap into other aspects related to the image the potential users had of themselves. One man who had worked in mechanics and electronics all of his life looked forward to getting an electric scooter, both as it could enable him to get around outdoors and as he wanted to test it and find out how it worked.

Discussion

The purpose of this study was to investigate the experiences of unmet ATD needs. The results showed that unmet ATD needs were not readily experienced as such but rather as difficulties doing activities of daily living. The participants struggled to manage their activities by changing their expectations and activities. The social environment was influential in highlighting the need for a device. Even with the knowledge that ATD could alleviate their difficulties, the participants considered the usability and meaningfulness of the device carefully before making a decision to apply.

The findings indicate that unmet needs are not experienced either as consciously or explicitly as has been previously suggested. Rather, it seems that the adjustable and flexible nature of habits blur the Gestalt figure of ability and disability, making the difficulties less visible and less likely to be interpreted as a health-related issue calling for a conscious decision. Interestingly, the difficulties the participants experienced did not necessarily cause the person to stop the activities and contact the health care system. The participants endured their difficulties to maintain their projects in everyday life, thus challenging the notion of a switch of the Gestalts of body and projects of the world when experiencing disability [24]. The

Dutch phenomenologist and physician Kay S. Toombs claimed that disability implies an "insistent presence" of the body forcing attention to be turned towards the body [[24] p. 76]. The findings in this study, however, show that the elderly individuals maintained their relations with their daily activities and directed attention to the activities they found to be important rather than addressing the intruding signals of the body.

The notion of understanding unmet needs as help-avoidance assumes that the elderly individuals experience their needs as entitling them to receive some kind of service. The definition of decision-making [20] is based on the premise that the person making the decision is faced with a health-related issue that calls for a decision to be made. This definition also seems to be an underlying premise of the Norwegian provision process model, which starts with recognising a practical problem [8]. However, the findings from this study indicate that the process of articulating a need and initiating the decision to apply for ATD may be prolonged and subtle. This supports the emphasis on decision-making as an ongoing process, as was implied in the definition mentioned earlier [20], but this definition neglects the significance and silent nature of habits in adjusting to and managing difficulties found in this study.

The social environment was a significant factor in how the participants experienced unmet needs. The practical help offered by spouses and friends was part of the adjustments that indicated an unarticulated ATD need. But family, friends and health-care professionals also offered a fresh perspective on the difficulties faced by the participants and provided valuable information on how to deal with these situations. While the social environment emphasized the practical aspects of the devices, the participants also considered their symbolic meaning and how it related to their situation. Habits are closely related to self-image, and chronic conditions necessitate new habits when daily activities can no longer be managed [22,28]. This conclusion implies that habitual ways of viewing oneself must also be renegotiated [28]. The decision to apply for an ATD involves considering the device's potential influence on self-image and appearance [14]. The association between old age and wheeled walkers has evolved in a social, cultural and historical environment that influences the decision-making process. The findings presented in this article confirm previous research findings that attitudes can make elderly people resist acknowledging the potential benefits of ATD [29]. Another finding was that the symbolic meanings of the devices can influence the decision to apply for them when these meanings need to be incorporated into the established image the persons had of themselves. Previous research has reported passive user participation in the prescription process [30], but the findings from this study show that potential users take an active part in the process by negotiating the potential benefits and downsides of introducing ATD into their current situation.

Some possible implications for providing ATD in practice should be mentioned. Adjusting habits and routines was effective for the participants in that they could still perform the activities that were important to them. However, many of the problems were progressing, and more profound challenges were potentially lurking on the horizon. One example is the women who experienced unsteady gait and dizziness during outdoor ambulation, symptoms that correlate with the incidence of falls that may result in fracture, increasing disability or even death [31]. In addition, some of these adjustments were potentially damaging to their health, such as ceasing to take prescribed medications.

The availability of resources within and outside of the health care system and the receptivity of the health-care professionals are significant for translating a difficult situation into a problem for which ATD may be a solution. To make the decision to apply for ATD, it is crucial to have relevant information and to be aware of the potential of ATD. Providing information and guidance has been identified as important for enabling user participation and for ensuring that the prescription process will be successful [5,10,11,30]. But identifying and articulating ATD-related needs and difficulties doing activities of daily living is not a straightforward process, as our findings show that elderly people do not necessarily view their difficulties as unmet needs when they can manage daily activities by changing their habits.

The health-care professional who provides ATD must be sensitive to unarticulated and potential difficulties and engage in dialogue and cooperation with the elderly person, contributing with their professional expertize and drawing on the problem-solving skills and creativity of the individual. The crux of early ATD intervention is intervening at the right time, when the elderly person acknowledges the potential for an ATD to improve a difficult situation. This conclusion implies that the disability is "un-silenced" and articulated, either by the person who experiences the difficulties or by outsiders who observe and comment on the problems and point to possible solutions. However, it should be noted that providing ATD may not be the best solution to all problematic situations.

The hermeneutical phenomenological approach undertaken in this study enabled rich descriptions of how elderly people experienced unmet needs for ATD, as assessed by both health-care professionals and themselves. The hermeneutical phenomenological perspective does not attempt to make generalizations but rather focuses on the uniqueness and varieties of experiences to enhance an understanding of lived experiences [27]. The interpretations aim to resonate with the readers' sense of lived life [27]. The interpretations of the interviews are both made possible and limited by the first author's pre-understandings from the field [26]. To ensure the reliability of the interpretations, all of the authors challenged and questioned the results.

Although the interviewer was not involved in a therapeutic relationship with the participants, the participants were aware of the interviewer's professional background. Some interviews developed into discussions of a more professional character in which the participants asked for therapeutic guidance or sought second opinions regarding the provision process. The first author avoided giving such advice by offering a referral to a local health-care professional and emphasizing the interviewer's role as researcher. As more occupational therapists cross the threshold into practice research, however, the

possibilities and pitfalls associated with sharing these dual roles should be made a focus of further research.

Declaration of interest

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