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Lack of time and dependence on significant others: Occupational therapists’ experiences of prescribing time assistive technology for persons with dementia

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ABSTRACT

\textbf{Background:} There is lack of knowledge on how occupational therapists (OTs) assess daily time management (DTM) for persons with dementia (PwDs) and on which aspects affect prescription of time assistive technology (AT).

\textbf{Aim:} To explore OTs’ experiences of assessing the need for and prescribing time AT for PwDs.

\textbf{Material and methods:} Focus group interviews with OTs that prescribe time AT for PwDs analyzed via qualitative content analysis.

\textbf{Results:} A main category and four categories were identified. The categories illustrated a complex and time-consuming prescription process, which was facilitated if the PwD was supported by a significant other (SO). Support from a SO was especially important during implementation and follow-up. OTs had to take individual responsibility for staying informed about time AT. Organizational limitations and time constraints were barriers for OTs striving to work according to national prescription guidelines.

\textbf{Conclusions and significance:} High demands are made on SO’s participation during the prescription process. PwDs with no support from SOs are at risk not receiving or fully benefitting from time AT. To avoid inequalities, specific forms of support need to be developed and targeted at PwDs without SOs to ensure that they have sufficient opportunities to access and use time AT.

Introduction

Dementia is a progressive disease that affects cognitive functions, often including the time processing ability (TPA) \cite{1-3}. TPA can be divided into three hierarchical levels: (1) time perception, which includes the ability to know the passage of time and how much time different activities take; (2) time orientation is the second level, which includes awareness of the time of the day, date, day of the week, month and year; and (3) time management, e.g. the ability to plan and order activities in a chronological sequence and to know how much time that must be allocated for the activities \cite{4}.

The ability to manage time is crucial in today’s society. Thus, impaired TPA affects independence, participation and well-being to a large extent. Persons with dementia (PwDs) with impaired TPA often need frequent support in their daily time management (DTM) from significant others (SOs), such as partners, family members or friends. DTM is defined as ‘managing one’s time in daily life, both alone and along with others, and adapting to time demands’ \cite{5}. For example, PwDs might need help in keeping track of which day and which time of day it is, to be in time for appointments, to be reminded to initiate and perform activities and monitor that the activities have been performed \cite{6}, as well as to plan activities in a time specific order, to pace task performance, to allocate enough time and make plans for separate activities throughout the day \cite{4,7}.
Consequently, interventions targeting occupational performance affected by impaired TPA should be given high priority among occupational therapists (OTs) [3]. Whilst other cognitive symptoms of dementia, such as impaired memory functions, recognition, reasoning, behavioural changes and passivity can cause significant problems in activities of daily life [8], the focus of this study will be on OTs’ experiences of PwDs’ problems related to impaired TPA and of prescription of time assistive technology (AT).

Prescribing and using AT to compensate for cognitive impairment is an intervention frequently used by OTs to support activity, participation and well-being. AT refers to any device or system aimed at maintaining or improving an individual’s function and participation [9]. In Sweden, AT can be prescribed by professionals through special AT centres that have a set range of products, with the products available and fees for their use varying across regions and municipalities [10]. There is a mandatory web education provided by the Swedish National Board of Health and Welfare that covers all steps of the prescription process for AT: (1) Selection; (2) Adaptations if needed; (3) Information; (4) Education and training; and (5) Follow-up and evaluation of function and utility. A need assessment is an important step preceding the prescription of ATs.

Previous studies have demonstrated that persons with dementia can benefit from using AT, including time AT [11–14]. An example of time assistive technology is a device that shows how much time that is left of an activity or how long time it takes to perform the activity. Another example is a device that shows today’s date and what time of the day it is. Such device is also an example of easy-to-use time AT, that do not request handling or adjustments from the PwDs. More advanced time AT that requires active management from the user, such as electronic calendars, can provide support for time planning and reminders when activities are to be carried out [15]. Time AT can support independent living and enhance well-being and safety for both PwDs and SOs [11,16,17]. However, research has shown challenges associated with the use of AT for persons with cognitive impairment and that it is important to pay attention to these aspects. For example, there is a risk of abandonment if the AT does not meet the needs and requirements of the user or if it is not effective and satisfactory in the context of its use [18,19]. The AT can also be too complicated to use or be perceived as stigmatizing. Thus, it is important for OTs to match the AT with the PwDs’ performance skills and needs [20]. However, recent studies in Norway, investigating assessments and methods used by municipal OTs working with persons with cognitive impairments, found that challenges such as lack of competence, limited access to materials, instruments and methods, and lack of time lead to conflicts in choosing between unstructured observations and standardized assessments, and an experienced need for competence development regarding assessments and interventions [21,22]. Moreover, research has shown that factors such as education, training and time resources affect the extent to which OTs use AT in clinical practice. Also, OTs’ acceptance or reluctance to use AT, can influence the quality of interventions provided [23].

Given the importance of supporting occupational performance affected by impaired TPA and the challenges of matching AT to the individual, it is vital to understand the OTs’ experiences of prescription of time AT. There is a lack of knowledge on how OTs assess TPA and DTM for PwDs and on which factors facilitate or hinder the prescription of time AT. The aim of this study was to explore OTs’ experiences of assessing the need for and prescribing time AT for PwDs.

Materials and methods

Design

The study has a qualitative design and was conducted by means of focus group interviews [24] with OTs.

Participants

A strategic, snowball sample [24] of OTs was recruited through professional networks of OTs working with PwDs in five different regions covering urban and rural areas in Sweden. To obtain rich data, we also sought for variation in the participants’ field of health care (e.g. memory clinic/primary care). An inclusion criterion was that the OTs should have more than 2 years’ experience of prescribing time AT for PwDs. Fifty-five potential participants working in memory clinics, primary care or municipality units were invited via e-mail with an information letter about the study. If no answer was received, attempts were made to reach the potential participants via phone calls. Thirty-one OTs responded on e-mails or phone calls. In total, sixteen women and one man participated in four focus group interviews, with each focus group including between three and six participants (Table 1).
Procedure

The themes of the interview guide were developed by the research group and decided in discussions based on APs’ and IBs’ earlier experiences of prescribing AT and on previous research projects where AT were developed and adjusted to the needs of cognitive impairments [18,25,26]. The interview guide covered the following topics: (1) Assessment and selection of time AT; (2) Introduction, education, follow-ups of time AT; (3) The roles of SOs; (4) Facilitating and hindering factors for using time AT; (5) Information and education; (6) Organizational factors.

Four focus group sessions were conducted at a large hospital. The small groups (Table 1) were chosen to facilitate elaboration between the participants of views and issues on their experiences of prescribing time AT [27]. Each focus group met once. In all sessions, the first author started the focus groups with a presentation of the aim of the study and the participants were encouraged to interact with each other during the session. During the interviews the second author took notes and asked supplementary questions. AP and IB are OTs and researchers with previous experience of leading focus group interviews. The sessions lasted 1.5–2 h including a refreshment break. The focus group interviews were digitally recorded and transcribed verbatim.

Table 1. Characteristics of the occupational therapists in the four focus groups (n = 17).

<table>
<thead>
<tr>
<th>Focus group 1 (n = 6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, median (range), years</td>
<td>50 (38–60)</td>
</tr>
<tr>
<td>Years in field, median (range), years</td>
<td>13.5 (2–20)</td>
</tr>
<tr>
<td>Position (n)</td>
<td>Memory investigation unit 5</td>
</tr>
<tr>
<td>Municipality unit</td>
<td>1</td>
</tr>
<tr>
<td>Focus group 2 (n = 3)</td>
<td></td>
</tr>
<tr>
<td>Age, median (range), years</td>
<td>44 (44–54)</td>
</tr>
<tr>
<td>Years in field, median (range), years</td>
<td>16 (5–19)</td>
</tr>
<tr>
<td>Position (n)</td>
<td>Memory investigation unit 3</td>
</tr>
<tr>
<td>Focus group 3 (n = 4)</td>
<td></td>
</tr>
<tr>
<td>Age, median (range), years</td>
<td>43 (28–63)</td>
</tr>
<tr>
<td>Years in field, median (range), years</td>
<td>11 (2–35)</td>
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<tr>
<td>Position (n)</td>
<td>Memory investigation unit 2</td>
</tr>
<tr>
<td>Primary care</td>
<td>2</td>
</tr>
<tr>
<td>Focus group 4 (n = 4)</td>
<td></td>
</tr>
<tr>
<td>Age, median (range), years</td>
<td>49 (36–63)</td>
</tr>
<tr>
<td>Years in field, median (range), years</td>
<td>10 (6–25)</td>
</tr>
<tr>
<td>Position (n)</td>
<td>Memory investigation unit 3</td>
</tr>
<tr>
<td>Primary Care</td>
<td>1</td>
</tr>
</tbody>
</table>

Data analysis

After each focus group interview, AP and IB reflected on the discussion. The collected data was analyzed using the principles of qualitative content analysis [28]. The transcription was read through several times to get an overall understanding of the material. Thereafter, coding was done by AP and IB for all data that could be linked to the aim of the study. Next, comparisons and groupings of the codes were made to create preliminary subcategories that were compared on the basis of similarities and differences.

This process was first performed for each focus group separately, and then the emerging findings were merged to preliminary subcategories and categories for all groups. Several measures were taken to increase trustworthiness. To ensure that the analysis was grounded in data, the categories were constantly compared with data from the focus groups [29]. From these categories, a main category emerged. Triangulation by use of different researchers [29] were used in several steps: AP and IB met regularly to discuss the emerging codes and categories until agreement was reached, and the material was discussed in detail with the other authors to check the relevance and validity of the findings. In addition peer debriefing [29] was used by discussing preliminary findings with an experienced clinician and at an OT seminar. Citations are illustrating the findings to increase trustworthiness and transparency of the original data that formed the base of the categories [28].

Ethics

The study was approved by the Regional Ethical Review Board in Uppsala (reg. no. 2018/059). The participants received oral and written information about the study, that participation was voluntary, and that data would be reported on group level. All participants gave written consent to participate in the study.

Results

The analysis of the focus group interviews revealed a main category: **A complex prescription process in need of support from significant others** and four categories: **Assessment of TPA and DTM, Facilitating and hindering factors during implementation, Follow-ups – a question of time and Need of professional knowledge and information**. Each category included between two and four subcategories. The main category, categories and subcategories are presented in Figure 1. The main category is described below, followed by categories and subcategories.
time AT offered to PwDs. Sometimes, support from SOs was even a prerequisite for PwDs to receive and use time AT. When the PwDs had no support from SOs, the OTs usually prescribed easy-to-use time AT. High demands were put on OTs if time AT was to be a feasible solution for PwDs without support from SOs.

**Category 1: Assessment of TPA and DTM**

*Structural conditions affected the needs assessments:* Assessing PwDs’ TPA and DTM is a complex process and the OTs pointed out interviews, cognitive instruments, occupational performance assessments and home visits as possible tools for assessing the need of time AT. Which assessments were conducted, and the amount of time for these assessments, varied between different regions, depending on the organization’s assignment agreements and clinical practices at the units. The OTs described that they had a heavy workload, and sometimes had to prioritize between different patient groups. They wished they had sufficient time for interviews, assessments and home visits for PwDs. When assessing PwDs TPA, the OTs were using different cognitive instruments that could include assessment of time aspects. However, none of the cognitive instruments used covered all parts of the TPA (time perception, time orientation and time management) and the OTs expressed need for a specific instrument designed for assessing TPA. Assessing occupational performance to discover problems in DTM and to evaluate the need for time AT was carried out in structured settings at the memory clinics or in the PwDs’ homes. Assessments in the home environment were preferred as this environment was familiar to the PwD. ‘You need a home visit to see how things really work...’ (Focus group 3). Furthermore, home visits gave the opportunity to make observations that were related to the PwDs’ DTM. However, depending on organizational priorities and assignments, it was not always possible to conduct home visits.

*Interviews* with PwDs and their SOs were an important part of the assessment of DTM. PwDs were asked about their DTM but when the PwDs had impaired awareness of their problems they were not able to describe their situation adequately. The PwDs sometimes believed that previous established DTM were still working, even though this had ceased to be the case. However, the PwDs usually visited the memory clinics together with a SO who knew the PwD well and provided support in their daily living. The
SOs could inform the OTs about what worked in the PwDs daily life and what did not. SOs often mentioned that the PwDs were missing appointments, or arriving too early or too late, especially if this was a change from previous punctuality. Though, the SOs were not always aware of problems or did not want to address them, especially if the interview with the SO occurred on one occasion only and an alliance with the OT had not yet been established.

The OTs gave several examples of the results of their assessments, showing difficulties in the PwDs’ DTM and potential to carry out daily activities independently. Frequent problems were that the PwDs were not oriented to the time of day, day of week, month or season. This could lead to not knowing if it was day or night, when to get dressed or what to wear. If the PwDs did not know when something was going to happen, it could for example be a problem to shop, cook or set the table at the right time before a planned dinner. ‘…she lives on her own and is having some guests in a couple of months… so she’s been to the shop and bought food and cooked and laid the table, and then her son comes home and sees that everything is set. “But they won’t be here for a couple of months yet and you’ve already done the shopping’” (Focus group 1). Other time-related problems included understanding the clock, knowing when groceries were purchased and understanding the date labelling on the groceries.

According to the OTs, another problem for the PwDs was that they often found it difficult to know how long time had passed, for example, how long time had been spent in the waiting room before a medical appointment or how long it would be until a SO returned home. Impaired time perception could create feelings of worry and anxiety for the PwDs.

Additionally, it could be difficult to estimate the time required when planning for activities. Due to other problems caused by dementia, such as reduced working pace or time-consuming troubles finding things, performance of daily activities could take longer than before. This could make it difficult for them to judge what they had time to do during a certain period. PwDs could also have problems in carrying out a daily routine, for example setting the alarm clock, taking medication at the right time, feeding pets at appropriate time intervals and walking the dog regularly.

The OTs tried to identify strategies that the PwDs were using in their DTM. To keep track of day and date, they could, for example, make notes in the calendar, or look at the date on a newspaper or mobile phone. Furthermore, calendars could be used for orientation back in time. However, PwDs’ strategies could be ineffective. For example, it could be difficult to mark passed days in a calendar at the right time. When the marking was done too early, it could look like the day had already passed. It could also be challenging for PwDs to orientate in the calendar if they only looked at the monthly overview, if a calendar from previous years was used or if the calendar was misplaced. ‘They can have several calendars, and diaries and calendars lying around all over the place’ (Focus group 3). A different strategy to keep track of time was to ask a SO. However, when PwDs quickly forgot this information, it was often experienced as tiresome by SOs, especially when the SOs and PwDs were not living together and the PwDs made frequent phone calls during day and night with questions about time.

**Category 2: Facilitating and hindering factors during implementation**

Advanced time AT was generally considered to be too difficult to use for PwDs and the OTs usually prescribed easy-to-use time AT, especially when the PwDs had no SOs that could provide support. ‘I think in general there should be relatives involved if you are going to prescribe assistive technology. If they are… if there are no relatives it can be difficult. Then you can only really consider the simplest assistive technology’ (Focus group 4). Support from social services could sometimes be an alternative, but there were time ATs that could not be prescribed at all without a SO, for example, alarms when PwDs with impaired time orientation got up at nights.

**Timing was important when implementing time AT** but, although described as advantageous, it could be difficult to introduce time AT at an early stage of dementia. For example, PwDs could talk about their problems in DTM without acknowledge a need for time AT. However, the need for time ATs often increased during the progression of the disease, and if the time AT had not been introduced early enough, PwDs might not benefit from time AT, as it may be too difficult to learn how to use due to the declining cognitive skills. Furthermore, regular habits and routines were an advantage when implementing time AT. Time AT often served as a complement to existing strategies, habits and routines, for example by verifying the real time and date for time-based activities. The implementation and the extent to which the time AT was used could be affected by whether the PwD had previously been careful about keeping track of time, or if the PwD had to perform daily activities at
certain times. ‘... for those who have a hobby of some kind... like for gambling on horse-racing you need to check what time the race starts in order to place your bet... if your life is organized around things like that then time is important’ (Focus group 4).

When prescribing time AT it was important that both PwDs and SOs were motivated to use it. If the PwDs lacked insight or motivation to use time AT, it could not be prescribed. SOs often tried to motivate the PwDs to try time AT. On the other hand, if SOs did not see any benefit with the time AT or did not think that the PwD would understand how to use it, their opinions could influence the PwDs to decline. Another reason to reject time AT was that SOs thought that it would include too much work on their own behalf to learn how to use, manage and support the PwD in using the time AT. ‘... then there was this relative who thought it would be much more work, and maybe better if he just rings anyway and asks me all the time... ’ (Focus group 3). Acceptance could be facilitated if the OTs could demonstrate the time AT for both PwDs and SOs and give the PwDs an opportunity to try before prescription. The design of the time AT was another factor that could affect whether the PwDs were motivated to use it or not. Moreover, the time AT could be a reminder of problems and be perceived as stigmatizing. If the time AT looked like a mainstream product it was easier to introduce. Costs could also affect whether the PwDs wanted time AT or not. The costs for time AT varied across different regions and there were also differences in whether the PwDs had to borrow, buy or rent the time AT.

Organizational factors affected OTs’ and SOs’ efforts to support the implementation of the time AT. Due to organizational priorities and assignments, many OTs had limited possibilities to provide training sessions in using and maintenance of the device. Hence, SOs became very important in supporting PwDs with instructions, reminders and training to use the time AT. The location of the time AT was important for the PwDs to be able to benefit from it. Sometimes they could need the same time AT both in the kitchen and in the bedroom. If the OTs were not allowed to prescribe two identical time ATs due to local regulations, the SOs might need to move the time AT between different places in the PwDs’ homes. Moreover, SOs could have to adjust or change settings, make updates or remind the PwDs to use or to bring the time AT. Thus, the OTs’ interventions included cooperating with and informing SOs on how they could support the PwD in using the time AT.

Category 3: Follow-ups – a question of time

Possibilities for OTs to follow-up prescribed time AT varied considerably across workplaces. Home visits were regarded as preferable when assessing how time AT was used, but due to limits in the organizational assignments or lack of time, the OTs sometimes had to do follow-ups via phone calls or refer the follow-ups to colleagues at other units. Sometimes no follow-up was done, and the OTs just left their contact details to PwDs and SOs so they could contact them if needed. Still, advanced time AT was always followed-up. None of the OTs had the possibility to do long-term follow-ups. If the need changed at a later stage of the dementia, the PwDs and SOs had to contact the health care services again.

The OTs that conducted follow-ups reported that PwDs and SOs were generally positive to time AT, that it often provided support in DTM for PwDs, and that it led to a prolonged DTM ability. Easy-to-use time AT could provide good support, even when the PwDs only showed signs of small problems in DTM. Time AT as support for time orientation gave information about day and date and could, in turn, reduce questions and nightly calls to SOs. When it was used in combination with medical dispensers or calendars, this made it easier for the PwDs to be aware of the current date and time. Many PwDs became less anxious when they knew that there was a device that always showed correct information about which day and what time of day it was. Time AT also helped the PwDs to know the length of time, e.g. how much time that was left before getting up in the morning. Besides being a support for DTM, time AT could also create a feeling of security and have a reassuring effect for the moment, even if the information was quickly forgotten. The time AT was considered as one of many supportive interventions for PwDs. ‘It is an illness, a progressive illness that you can’t make disappear with assistive technology, but it does help in some situations’ (Focus group 3). However, if the PwD lived alone, it could be impossible to evaluate the time AT, as it could be difficult for the PwD to adequately describe the usage. Thus, SOs played an important role in follow-ups, as they to a large extent knew if, when and how the time AT was used.

Category 4: Need of professional knowledge and information

When the PwDs had problems in DTM, the OTs needed to be knowledgeable of time AT on prescription as well as commercial alternatives and to be motivated.
and creative to find adequate solutions for the PwD. Furthermore, they had to take great responsibility for acquiring and sharing the knowledge, for example by attending courses, regular network meetings and by collaborating with other care units. Many OTs experienced a lack of products in the range between time AT that were easy to use and more advanced time AT that put considerably greater demands on the user. When there was no appropriate time AT to prescribe, OTs sometimes recommended commercial products that PwDs and SOs could purchase. Thus, staying informed about time AT also included being up-to-date on commercial products, which was time-consuming since the OTs needed to be aware of company changes or if products disappeared from the market and have knowledge of which demands these products put on the user. For example, if the PwDs were already used to managing smart phones, functions provided by the phone could be an alternative to time AT. However, smart phones could be difficult to use for PwDs and this could be hard to understand for some, mainly younger, SOs that were familiar with smart phones and new technology. ‘...and quite often you see they have bought things for them that might be far too difficult for them to handle’ (Focus group 2). OTs often had to explain to SOs why it became difficult and instead suggest solutions that were easier to use. Still, the OTs thought it would become more common to use smart phones as time AT for PwDs in the future, as more and more older persons will be experienced smart phone users.

Information about time AT already obtained via other professionals or via advertising affected what PwDs and SOs requested from the OT. Previous information could be an advantage as PwDs and SOs gained an increased awareness of possible support from time AT, and, therefore, brought up problems with TPA during the OTs’ interviews. Now and then, the SOs asked for time AT that was too difficult for PwDs to use, as SOs did not have the OTs’ knowledge about the requirements that different time ATs placed on the user. The OTs tried to inform PwDs and SOs about time AT in different ways, for example, via folders or showing examples of time ATs in waiting rooms. Some OTs held lectures at group level for SOs, including information about time AT, to increase SOs’ awareness of possible solutions when a PwD’s TPA was impaired. However, general information could also create false expectations and reliance on the time AT. Thus, the information part of the prescription process was important, in terms of both information about possible time AT alternatives and information about the clinical reasoning behind the choice of the most appropriate time AT for the individual.

Discussion

This qualitative study explores OTs’ experiences of assessing the need for time AT for PwDs and the process of prescribing time AT. The findings illustrate that prescribing time AT for PwDs is a complex and time-consuming process and that it is advantageous if SOs provide support for the PwDs at all steps of the prescription process. PwDs without support from SOs might receive time AT that is easier to use or no time AT at all, regardless of the need.

The most important finding in this study was the central role of support from SOs for the OTs as well as the PwDs throughout the whole prescription process. Support from SOs was sometimes even a necessity for OTs to be able to prescribe time AT. During assessments and interviews, SOs could provide invaluable knowledge about the PwD’s past and current needs as described by Collins [20]. SOs often encouraged the PwDs to both try new time AT and continue to use time AT, which is supported in earlier studies [30,31]. Furthermore, our results showed that it was mostly SOs that provided training and reminders for the PwDs in using time AT. Previous studies have shown that SOs have a key role in facilitating learning and integration of AT into PwDs’ daily routines [31–33]. To work in practice, even relatively simple AT requires encouragement, guidance and reminders from SOs, for example, by routinely telling the PwD to look at a clock instead of telling the time, or placing the time AT at the right location each day [33–35]. However, the OTs reported that SOs needed information, instruction and coaching during the implementation of the time AT, which is in line with previous studies [20,36]. According to the OTs, SOs could also report on the practical usage of the time AT at follow-ups. In general, SOs and PwDs were positive to time AT and often reported support in DTM for PwDs, which in turn, indicates that time AT is an important intervention for PwDs.

However, SOs’ own abilities and needs affect the capacity to provide support and should be considered when prescribing time AT for PwDs. Other studies support our findings that implementing AT into the PwD’s daily life might require more commitment and support than SOs have the capability, time or energy for [12,35,36] and that there is a risk that the SOs’ own needs will affect the degree of their involvement.
Furthermore, challenges have been reported when patients or SOs have wishes that conflict with what the OTs consider as therapeutically appropriate [37]. Still, SOs’ views influence the choice of time AT, as they must be interested and involved in the chosen time AT in one way or another [12,31,34].

Accordingly, the results point at that PwDs without support from SOs had limited possibilities to receive time AT, even if the OTs conducted home visits and provided extra training sessions. This confirms previous research pointing at the difficulty to integrate technology use into the life of PwDs who live alone without support from SOs who can prompt, remind or assist them when using a new device [11,35,38]. At the same time, the health care system in Sweden should be guided by the principle that health care should be provided on equal terms to the whole population whilst giving priority to those in greater need [39]. Relying on SOs to act as advocates to gain access to formal services [40–42] and also provide support for PwD throughout the processes of prescription and implementation of time AT means that those PwDs who may be in the greatest need of time AT do not get full, if any, benefit from such AT.

The analysis showed that it was difficult for the OTs to work according to the Swedish National Board of Health and Welfare’s guidelines for the prescription process, which might limit the opportunities for a successful implementation of time AT as support in DTM for PwDs. The assessment of TPA and the need for time AT as support in DTM was complex and a comprehensive assessment of TPA was important for the selection of appropriate time AT. Although need assessment is an important step preceding the prescription of ATs, there are still no national recommendations on how to assess the need for AT and no evidence-based instrument for assessing TPA in dementia. An instrument that assesses all three levels of TPA has been developed for other patient groups, but has not yet been tested for PwDs [43]. There is a need for further studies of instruments for assessment of TPA for this target group, since symptoms and the course of the disease differ from, e.g., patients with neuropsychiatric diagnoses. Interviews with PwDs and SOs were an essential part of the assessment, which is supported by earlier findings [22]. The importance of taking earlier habits and strategies into account when using time AT is also in line with previous research [12,32,44]. Many OTs considered assessments of occupational performance and observations in the PwDs home environment as important, especially for PwDs without support from SOs and lacking awareness of their problems. However, we found that organizational structure and assignments in combination with time constraints could limit opportunities to make home visits, and thus, the conditions for conducting comprehensive assessments. Furthermore, our findings showed that the OTs often had limited possibilities to work with training and implementation of time AT, and that possibilities follow-up the function and utility of the time ATs differed across workplaces. Guidelines for providing time AT varied across regions and local authorities and the OTs needed to make individual decisions based on policies and budget, a problem that also has been described by Bartfai and Boman [45]. Research comparing the use of different types of AT has shown that, among the studied alternatives, AT for cognition (including time AT) required most professional training and follow-ups [46]. Thus, organizational limitations and time constraints may pose a risk that the time AT does not meet the PwDs’ needs or that the time AT is not working in the intended context. As dementia is a progressive disease, the capacity and routines of the PwDs might also change over time and, consequently, adaptions of the time AT may be required for the usage to be sustained [18,32,33]. Hence, ethical dilemmas that might arise when follow-ups cannot be done, could be referred to factors beyond individual OTs, such as organizational and resource issues within policy-dependent systems [37].

Another finding was that the prescription of time AT put high demands on OTs in terms of being engaged and seeking knowledge about time AT, as also described by Adolffson et al. [19]. Moreover, the current societal development has led to new and increasing demands on professional practices. For example, in Sweden, the Description of Occupational Therapists’ competence [47] has recently added that OTs should have digital competence, including using digital systems, tools and services. The individual responsibility for staying informed, in combination with time constraints, might increase the risk that time AT will not be sufficiently provided for PwDs.

Easy-to-use time AT was prescribed much more frequently than advanced time AT. One explanation might be that easy-to-use time AT places less demands on and often provides support for PwDs, while advanced time AT can be too difficult for them to use, even with support from SOs [20]. In addition, heavy workloads can be a reason for OTs to choose an alternative that is uncomplicated to prescribe and that may not require training and follow-ups. The
findings also suggest that there is a lack of alternative time AT for prescription, and that there is a gap between easy-to-use and advanced time AT. Earlier research has pointed out that the range of AT in general provided by regions and municipalities has been reduced and that users have access to a limited range of AT [10]. Another reason for choosing easy-to-use time AT could be that SOs lack the competence to provide support for advanced time AT [35]. However, this study showed that SOs sometimes requested advanced time AT, or wanted to use functions in smart phones, that the OTs considered to be too difficult to use for PwDs. This is in line with earlier research that has found that smart phones, with comparable supportive functions, often can be too advanced for PwDs [31,48].

Still, OTs’ clinical reasoning skills and knowledge about time AT, and the demands it places on the user, are central [12,32]. According to Gibson and colleagues [35], SOs might lack the knowledge of how dementia can affect the ability to recognize and use AT, or simply do not have the knowledge of the range of existing AT. Given that OTs and SOs are dependent on each other to varying degrees, there may be a need to further develop methods where OTs work with both PwDs and SOs. Assessments might be performed based on both their wishes and needs and, in addition, on assessments of the capability of SOs to support PwDs in their use of time AT. Another conclusion is that there is a need for OTs to regularly meet with SOs for individual information and coaching.

Methodological considerations

Focus group interviews have been found to be a useful method for exploring persons’ attitudes and experiences in relation to a specific topic [27]. The interaction that occurs in the group discussions often lead to development of reasoning, which can result in information that would not evolve in individual interviews [49,50]. The number of participants in the focus groups was fewer than planned due to difficulties in recruiting participants and late cancellations. On the other hand, the interviews that took place in the small focus groups gave the participants time to listen carefully to each other, elaborate their thoughts and respond to each other to a large extent [51], resulting in rich data.

Given the time-constraints reported by OTs, it is possible that OTs that participated in the focus group interviews were motivated and generally positive to prescribe time AT for PwDs, and the results should, therefore, be interpreted with caution. However, transferability is supported by the participants’ variations in age, work experience, urban and rural catchment areas in different geographic regions in Sweden. The participants also worked in different parts of the Health care organization (e.g. memory investigation units and primary care). Thus, a rich variety of experiences could be captured in the focus group interviews, supporting the trustworthiness of the findings [29].

The focus group interviews were conducted by two OTs. Insiders’ perspectives could be limiting as insiders might lack the distance that is required to maintain objectivity and there is a risk that perspectives might be taken for granted [52]. However, prior knowledge of the topic could also be a strength as it can deepen the understanding of the discussions. Moreover, the research group that participated in the analysis included researchers with different disciplinary and professional backgrounds: in addition to occupational therapy, rehabilitation medicine and social gerontology were represented in the group, allowing interpretation of data from diverse perspectives and increasing credibility [24].

Conclusions

When prescribing time AT, high demands are placed on individual OTs in terms of being motivated, engaged, creative and staying informed with up-to-date knowledge on time AT. This can affect the occurrence and adequacy of prescribed time AT. Furthermore, organizational limitations and time constraints are hindrances for OTs in working according to the national prescription process guidelines, making support from SOs important during all steps. Importantly, PwDs without support from SOs are at risk of not receiving or fully benefitting from time AT, a finding that challenges the fundamental principal of equality of the Swedish health care system. To avoid inequalities, specific support needs to be developed and targeted at PwDs without SOs to ensure that they have sufficient opportunities to access and use time AT. Thus, it is crucial that formal service providers have adequate resources to support vulnerable individuals if equal care and treatment is to be attained.

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