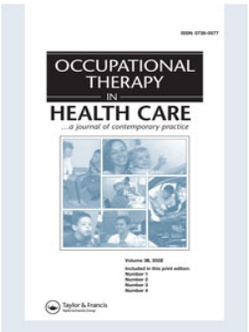

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Occupational Therapy Interventions for Persons with Cognitive Impairments Living in the Community

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ABSTRACT

This study describes interventions provided by community occupational therapists for persons with cognitive impairments. Using an online questionnaire, a cross-sectional study was conducted, collecting data from 497 of the 1367 occupational therapists in Norwegian community-based services. The most common interventions provided were environmental modifications (87%), implementation of assistive devices (85%), and training of activities of daily life (ADL) (77%). Two main reasons to carry out these interventions were identified as the initial assessment of clients (89%) and expectations of others. The most preferred interventions were ADL training (77%), cognitive training (63%), and environmental modifications (56%). Chi-squared tests identified a significant difference ($p < 0.001$) between interventions provided and preferred interventions on all interventions except environmental modifications. The findings provide an insight into interventions provided for persons with cognitive impairments in community services.

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Cognition; community services; interventions; occupational therapy

Cognitive abilities are essential for effective performance across a broad range of daily occupations. As an integral role in human development, cognition is critical for the ability to learn, retain and use new information in response to changes in everyday life (Giles et al., 2013). A cognitive impairment is any impairment in knowing, understanding, and interpreting reality, such as recognizing and identifying objects or individuals, in remembering, in thinking abstractly, in reasoning and judging or in comprehending and using language (VandenBos, 2015). Both occupational therapy theory and research support the principle that cognition is essential to performance of everyday tasks (Toglia, 2011; Wilson et al., 2016). Disorders of brain structure or function, inherent or acquired, lead to difficulties in the ways people think, feel and/or act. These difficulties can

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result in loss of, or difficulties in acquiring or maintaining abilities and skills (Tempest & Maskill, 2017). Accordingly, through use of occupations and activities, occupational therapists can facilitate individuals cognitive functioning to enhance occupational performance, self-efficacy, participation and perceived quality of life (Giles et al., 2013).

Internationally, occupational therapy interventions in the context of community services for persons with cognitive impairment have been investigated in several studies (Ávila et al., 2018; Bennett et al., 2011; Burns & Neville, 2018; Graff et al., 2006, 2007; Hoppes et al., 2003; Walker et al., 2004). Specifically, Burns and Neville (2018) describe intervention approaches used for people with stroke in the context of the home environment as the 'Global strategy learning and awareness approach,' focusing on developing and increasing the awareness of self-identified adaptive approaches to improve performance. The 'domain-specific strategy training' focuses on training persons to understand their specific cognitive impairments and developing strategies to adapt to them. The 'cognitive retraining embedded in functional activity' approach focuses on skill remediation when it is embedded in the context of an everyday task. The 'environmental modifications and using assistive technologies' focuses on ADL training, and less on cognitive remediation. Finally, the 'specific functional skills training' approach focuses on modifying the environment or using assistive technologies to enhance performance or integrating technologies to support everyday task performance in the home environment (Burns & Neville, 2018).

Graff et al. (2006) investigated occupational therapy for patients with dementia and their caregivers provided ten occupational therapy sessions, including cognitive and behavioral interventions, conducted over five weeks trained patients in the use of aids to compensate for cognitive decline and caregivers in coping behaviors and supervision. They found evidence that the ten sessions improved the daily functioning of the patients with dementia and diminished the burden of care on their primary caregivers. The authors argued based on the results, that the benefit was sustained because one component of the intervention included training caregivers in providing the supervision that patients needed to sustain their performance of daily activities (Graff et al., 2006).

Norwegian community services

Norwegian occupational therapists work with persons with various challenges and are employed in different fields and areas (Stigen, Bjørk, Lund et al., 2018; Aas & Grotle, 2007). In Norway, everyone is entitled to essential medical and care services. The public health system is built on the principle

of equal access to health services for all citizens, regardless of socioeconomic status, ethnicity and area of residence. The public healthcare sector has two levels, a regional specialized hospital service and the community healthcare of services taking place in the country's 356 municipalities. A municipality is a unit of local government in Norway and are responsible for primary education (until 10th grade), outpatient health services, senior citizen services, unemployment and other social services, zoning, economic development, and municipal roads. The municipalities vary extensively in both population size and geographical extent. The public health services include both public ownership and operation and are financed through governmental grants (Ministry of Health and Care Services, 2012).

Community-based occupational therapy services were introduced in 1987 in 11% of Norwegian municipalities (Aas & Grotle, 2007). However, in recent years within Norwegian community services, occupational therapy is a central and growing profession, as in other parts of the world (Brintnell et al., 2011; Carrier et al., 2010). In 2018, there were 2338 occupational therapists registered in Norwegian municipalities (SSB, 2019), representing an increase of 400 positions in the last four years (Stigen, Bjørk, Lund et al., 2018). By the end of 2019, 406 out of 422 municipalities (84%) employed occupational therapists, and by January 1, 2020, occupational therapy was established as statutory in Norwegian municipalities. Characteristics on clients for whom community-based occupational therapists provide services are varied. One study highlighted that 44% of the clients were retired, 28% were persons with disablement pensions and 11% were students (Aas & Grotle, 2007). Other studies emphasize that older adults are a frequent group receiving occupational therapy services (Førland & Skumsnes, 2016), as well as people with stroke and neurological diseases (Aas & Grotle, 2007, Stigen, Bjørk, Lind et al., 2018). Occupational therapists employed by the municipalities only provide community-based services. Although they might provide rehabilitation services in municipal institutions, they do not provide services in hospitals.

With the implementation of the Coordination Reform Act (CRA) in 2012, a paradigm shift was initiated in Norwegian health services (Meld. St. 47 (2008-2009), 2008). The goal of the CRA was for the patient to receive proper treatment at the right place and right time, and municipalities were expected to ensure that people receive the most effective health care service (Meld. St. 47 (2008-2009), 2008). Due to the CRA, occupational therapists have been recognized for their contribution to people living in the communities, and they have received increased attention in community services in recent years.

Only a few studies have investigated the practice of community-based occupational therapy until recent years. In 1998, Tuntland described the

practice and roles of Norwegian occupational therapists in community services and argued the importance of developing the role of the community occupational therapy. However, since 2015, several studies have investigated the practices (Arntzen et al., 2019; Bonsaksen et al., 2018, 2020; Gramstad & Nilsen, 2016, 2017; Stigen, Bjørk, Lund, et al., 2018). Some of the studies have focused on assessment practices (Hagby et al., 2014; Stigen, Bjørk, Lund, et al., 2018) with the results of one study indicating that occupational therapists from community services reported less frequent use of assessment tools and the assessment tools used were seen as less useful compared to those in the private or government sector (Hagby et al., 2014). Other studies have identified how community occupational therapists experienced challenges related to communication of occupational therapists' competencies and how others' expectations (e.g., clients themselves, relatives, or colleagues of occupational therapists) did not necessarily matched the occupational therapists' understanding of what they should be doing (Gramstad & Nilsen, 2016; Stigen, Bjørk, et al., 2018). Two studies have investigated community-based occupational therapists' needs related to participation in research, and the results of one study indicated that 70% of the participants who currently were not involved in research wanted to participate (Bonsaksen et al., 2018). Another study aimed to identify and prioritize relevant research topics from the perspective of occupational therapists in community services, and one of the outcomes indicated that the occupational therapists identified a need for research on how to work with persons with cognitive impairments in the context of community service (Gramstad & Nilsen, 2017).

One of the most recent studies aimed to explore how Norwegian community-based occupational therapists positioned themselves in relation to the tasks delivered (Arntzen et al., 2019). The results indicated that their professional practices could be classified into four types of practitioners. The firs one is 'the all-rounder', who is described as an occupational therapist that does everything that is needed. The second is 'the provider of an assistive device', who mainly works with provision and adaption of assistive devices. 'The fire extinguisher', who jumps quickly from one case to the next putting out "fires" is the third type. And lastly, 'the innovator' is a preferred role which is involved in new and exciting projects aiming to develop future services (Arntzen et al., 2019). In another recent study on community-based occupational therapy, 88% of the participants reported being in positions where they worked with assistive devices to some degree and spent about half of their time (51%) on work related to assistive devices (Bonsaksen et al., 2020).

While studies have focused on the practices of Norwegian community-based occupational therapists, none have specifically described

interventions for persons with cognitive impairments. Therefore, this study's aim was to investigate and describe interventions provided by community-based occupational therapists for persons with cognitive impairments. As previous studies have highlighted a gap between what they do and what they want to do, we wanted to investigate what interventions occupational therapists provide and reasons for providing them. Thus, specific research questions were: 1) Which interventions do occupational therapists provide for persons with cognitive impairments, 2) what are their reasons for providing the various interventions, 3) which interventions would they prefer to provide for persons with cognitive impairments, and 4) what is the difference between the provided and the preferred interventions?

Methods

Design

A cross-sectional study was used with a questionnaire developed for this study in 2014 and distributed by the Norwegian occupational therapy organization (Ergoterapeutene) to ensure the anonymity of the participants. The ethics committee at the Norwegian Center for Research Data (NSD) approved the study before the data collection (project number 37975). The authors followed the ethical principles for medical research according to the Helsinki Declaration.

Participants

The questionnaire was distributed by email to 1,367 occupational therapists who work in community services and registered in the organization's database. Numbers from the national statistical agency indicated that at the time of the data collection, there were 1,998 occupational therapists in Norwegian community-based services. Hence, the organization's database covered approximately 68% of the occupational therapists working in community services at that time (SSB, 2019). All occupational therapists participated voluntarily based on self-selection, agreeing to participate by entering the link in the invitation email.

Questionnaire

An online self-administered questionnaire was developed for this study using EasyfactTM (Easyfact, 2014) with three subsections. The first revolved around the participants' demographic characteristics (n = 8 questions), the second about assessments performed and the last one about occupational

therapy interventions provided for persons with cognitive impairments (n = 4 questions). The questions related to assessments performed has been published in a separate article (Stigen, Bjørk, Lund et al., 2018). The multiple-choice questions included an option "other, please specify." An example of a multiple-choice question was "Which interventions do you provide for persons with cognitive impairments?" with answer options were (i) implementation of assistive devices, (ii) implementation of assistive technology[1], (iii) ADL training, (iv) cognitive training, (v) environmental modifications, (vi) working with relatives, and (vii) other, please specify. Since the participants could choose more than one answer, some percentages are over 100%.

It was estimated that the questionnaire would take 6-8 minutes to complete. The questionnaire was piloted before commencing the data collection to ensure face validity (Furr & Bacharach, 2017) and to ensure that the answer options were relevant and appropriate. The first pilot group consisted of four occupational therapists with experience working in a municipal center with older adults, particularly those with dementia. The estimated completion time and the wording of certain questions in the questionnaire were revised based on the pilot. Following the revisions, the questionnaire was piloted a second time with a group of five occupational therapists working in community services, representing the target group for this study. After the second pilot, one alternative (i.e., other, please specify) was added to each multiple-choice question. In this publication we will present the findings from the questions related to interventions provided for people with cognitive impairments in the context of community services.

Data analysis

All analyses were performed using SPSS software (Corp, 2013). Frequencies and percentages were used to describe the categorical data. The multiple-choice questions were analyzed with each possible answer treated as a separate variable. Chi-squared tests were performed to investigate associations between the interventions provided and the preferred interventions with the level of significance set at 0.05. The open-ended questions and the option 'other, please specify' were analyzed using content analysis to quantify the responses from the participants (Bowling, 2014). The answers from the participants were combined in one document and coded by all the three authors. The codes were further developed into categories related to interventions the participants stated they provided. Thereafter the categories were counted to calculate the frequency with which different interventions were provided.

Results

After two reminders, 497 participants out of the 1367 completed the questionnaire with a response rate of 36%.

Demographics

Table 1 illustrates the participants' demographic characteristics. Of the participants, the majority were female, and the years of graduation ranged from 1971 to 2013. In terms of the different health regions, most participants were from the South-East region, followed by West, Middle and North regions, which is also representative of the size of the regions in Norway. All participants worked in community-based services but had various responsibilities and settings they operated in during their workdays. Most of the participants had a primary responsibility for persons living in their own homes. In addition, some participants worked in administration, some only with persons in institutions, and a few worked in

Table 1. Participants' demographic characteristics and diagnostic categories of the people they work with.

Characteristics of participants	Frequency	
Gender*(n = 497)*	N	%
Female	467	94
Male	30	6
Health region (n = 497)		
South- East	252	51
West	121	24
Middle	70	14
North	54	11
Work setting (n = 497)		
Clients in home setting	417	93
Clients in institutions	247	55
Clients in institutions and home setting	224	45
Administration	44	10
Only institution	22	5
Competence center	16	4
Years of experience (n = 497)		
Median 13 years		
1 – 5 years	88	18
6 – 10 years	120	24
11 – 20 years	171	34
21-30 years	67	13
More than 30 years	51	10
Diagnostic categories (n = 497)		
Persons with stroke	346	70
Persons with progressive neurological conditions	345	69
Persons with dementia	296	60
Persons with unspecified cognitive impairments	291	59
Persons with cerebral palsy	252	51
Persons with developmental disorders	247	50
Persons with traumatic brain injuries	233	47
Persons with psychiatric disorders	190	38
Other	184	37
Persons with autism	130	26

community competence services. A competence center is a resource for the public services, both on the regional and community levels. The center aims to promote competence and professional development across disciplines, levels, and sectors.

It is unknown whether the participants had any further education in occupational therapy interventions for persons with cognitive impairments. The recipients of the occupational therapy services provided by the participants in this study were a diverse group, as summarized in Table 1.

Table 2 shows the interventions provided for persons with cognitive impairments. With the options of "other", 10% of the participants used this option. Several participants (15%) wrote that they provided interventions that involved advising persons with cognitive impairments as well as relatives or caretakers on how to manage challenges related to daily occupations. Several (15%) also reported that they often referred the person further to other community services, such as day care services or assistance in the home.

Table 2 also includes the reported reason was that these interventions were provided. The participants were given an open-ended alternative at this question as well, and 9% (n = 41) used this option. Several (31%) reported that they provided interventions due to the individual's need to master their daily occupations, and others (11%) reported that they provided interventions due to an overarching political goal in their municipalities of enabling people to keep living at home as long as possible.

Table 2. Summary of the type of interventions provided, reasons for providing interventions, and preferred interventions.

	Frequency	
Interventions provided *(N = 448)*	N	%
Environmental modifications	392	87
Implementation of assistive devices	382	85
ADL training	345	77
Working with relatives	257	57
Cognitive training	213	47
Implementation of assistive technology	196	44
Reason for providing interventions *(N = 446)*		
Assessment indicated it would be relevant	397	89
Expectations from relatives	200	45
Expectations from client	156	35
Expectations from colleagues	130	29
Time and resource limitations	44	10
Preferred interventions *(N = 467)*		
ADL training	361	77
Cognitive training	295	63
Environmental modifications	262	56
Implementation of assistive technology	206	44
Working with relatives	186	40
Implementation of assistive devices	169	36

Table 2 also shows the interventions the participants would prefer to provide for persons with cognitive impairments. Some (n = 61) participants also used the open-ended alternative when responding to this question, and several (18%) mentioned that they would prefer to address preventive interventions. Some mentioned that, in most cases, they were called in to assist in later stages when interventions, other than implementing assistive devices or home modifications for the person to be able to keep living at home, were irrelevant. Some participants also mentioned that all the alternative interventions could be relevant in many cases. When the participants were asked to state interventions that they would prefer to provide for persons with cognitive impairments, they indirectly made choices related to interventions they least preferred. Implementation of assistive devices (64%), working with relatives (61%), and implementation of assistive technology (57%) were the three interventions the participants least preferred to provide.

Table 3 shows an overview of the interventions the participants provided and which they would prefer to provide with the statistically significant differences between the provided and preferred interventions. All were significant except for environmental modifications.

Discussion

This study aimed to investigate and describe interventions provided by Norwegian community-based occupational therapists for persons with cognitive impairments. Interventions provided, reasons for providing interventions and preferred interventions will be discussed. Overall, we found that the participants provided interventions such as environmental modifications and implementation of assistive devices, although they stated that those were not the ones they would prefer to provide. They would rather prefer to provide interventions focusing on ADL and cognitive training.

Table 3. Comparison of interventions in terms of being provided, preferred or provided and preferred.

Interventions	Provided and prefer to provide	Provided but do not prefer to provide	Not provided and do not prefer to provide	Not provided but do prefer to provide	p value
ADL training	278	67	61	83	$p < 0.05$
Environmental modifications	217	176	51	46	$P = 0.168$
Cognitive training	158	55	139	137	$p < 0.05$
Implementation of assistive devices	151	231	89	18	$p < 0.05$
Working with relatives	125	133	170	61	$p < 0.05$
Implementation of assistive technology	105	90	193	101	$p < 0.05$

Interventions provided

The results indicated that the participants provided interventions mainly related to environmental modifications and implementation of assistive devices, which is consistent with an Australian study investigating occupational therapists' practices related to persons with dementia (Bennett et al., 2011). Environmental barriers in the home environment can compromise the performance of everyday occupations (Johansson et al., 2007) and modifying the environment is a common compensatory intervention to enhance independent living (Gitlin, 2015). With an environmental modification, the physical home environment is altered based on the needs of the person who lives and performs occupations in the home (Malmgren Fänge et al., 2013) with the aim is to enable occupational performance. While it appears that environmental modifications offered by occupational therapists is well aligned with the Norwegian governmental goals of keeping people in their homes as long as possible, it is possible that if the modifications are significant, it may actually work against continued occupational performance since persons with cognitive impairments need familiarity (Giles, 2011; Hoppes et al., 2003). Therefore, occupational therapists need to be aware of how much environmental modifications can be done before the environment might not feel familiar to their clients.

The second most frequently provided intervention in this study was the implementation of assistive devices, which is also a means to increase occupational performance. A previous study investigating the characteristics of Norwegian community-based occupational therapists reported that 88% of their clients and half of their time was spent providing assistive devices (Bonsaksen et al. 2020). In addition, the 'provider of assistive devices' was described as one of the four professional types that community-based occupational therapists identified with (Arntzen et al., 2019). Several studies (Malmgren Fänge et al., 2013; Stigen, Bjørk, et al., 2018; Tuntland, 1998), has stated that working with assistive devices related to improving occupational performance, is described as a 'traditional' way of working in community services.

ADL training was another intervention several participants provided, which has also been emphasized in previous studies as an important intervention for occupational therapists (Koh et al., 2009) especially for people with stroke (Walker et al., 2004) and dementia (Ávila et al., 2018; Graff et al., 2006). Persons with stroke were the most common recipients of occupational therapy services in this study, followed by individuals with progressive neurological disorders and dementia. In this study, it was differentiated between intervention approaches such as ADL training, environmental modification, and implementation of assistive devices. Burns

and Neville (2018) however, emphasized how intervention approaches provided by occupational therapists, should integrate environmental modifications, assistive devices, and ADL training, to enhance performance or integrating technologies to support everyday task performance in the home environment (Burns & Neville, 2018). It seems however, that in the context of the Norwegian occupational therapists, these intervention approaches are not that explicitly integrated in practice as they perhaps ought to be. Based on previous research (Arntzen et al., 2019, Stigen, Bjørk, et al., 2018), occupational therapists are describing working with assistive devices and assistive technology as an important intervention, but they do not always describe it distinctly linked to enhancing occupational performance. Based on this study, one can assume the reasoning behind implementing assistive technology and assistive devices, was to improve occupational performance, but further investigation is necessary to confirm this assumption.

Several studies have focused on the importance of including caregivers in interventions, especially those caring for persons with dementia (Ávila et al., 2018; Graff et al., 2006, 2007), and since having a cognitive impairment often affects the entire family, it is important to include relatives in the process of intervention, as several participants reported. Considering the importance of including the family in interventions for people with cognitive impairments, it is however interesting, that only slightly more than half of the therapists indicated they did it. Considering occupational therapy emphasizes collaboration with clients' families, it may be necessary to explore why this is not occurring.

Reasons for providing interventions

The results of occupational therapy assessments can provide information about the need for services, guide the development of and design interventions based on assessments results, as well as evaluate results of interventions (Law & Baum, 2017). Previous studies of assessment practices of Norwegian community-based occupational therapists (Stigen, Bjørk, et al., 2019; Stigen, Bjørk, Lund et al., 2018; Stigen et al., 2020) have indicated that standardized assessments were used in the assessment process of persons with cognitive impairment were mainly screening tools, such as the MMSE (Folstein et al., 2001) or the Clock Drawing Test (Smedslund et al., 2015), among others. Occupational therapists working in the context of community-based institutions providing rehabilitation services, were more likely to use such standardized assessment, than occupational therapists working with persons living in their own homes (Stigen, Bjørk, Lund et al., 2018). The type of assessments (e.g., conversations,

observations, standardized assessments) the participants used in this study is not known and should be investigated in future studies. While providing interventions based on conversations with the client who has the challenges related to performance of occupations (Bredland et al., 2011), persons with cognitive impairments may lack insight into their limitations (Fawcett et al., 2007). Thus, observations and/or conversations with relatives or caretakers is an important strategy. As the study participants indicated the main reason to provide interventions was based on the assessment results, it could be interesting to evaluate the relationship between assessments done and interventions provided.

Preferred interventions

The most preferred intervention in this study was ADL training. Empowering occupational therapists to enable mastering of peoples' daily occupations has been an important task since the beginning of the profession in the 19th century (Meyer, 1922). The participants in this study reported that they provided interventions related to ADL training, although they offered assistive devices and environmental modifications more frequently. Since the results do not specify what was the participants' goals of providing the assistive devices, the assumption is they were provided to improve occupational performance. Considering the results of this study, why is it that ADL training is the most preferred but not the most provided intervention in their practices?

Since previous studies have highlighted how the practice of community-based occupational therapists is largely defined by others' expectations of what occupational therapists should do rather than by the occupational therapists themselves (Gramstad & Nilsen, 2016; Stigen, Bjørk, et al., 2019; Tuntland, 1998). The results of this study may be a reflection on this, especially in the Norwegian context. Potentially, it may be the reason why the participants in this and other studies spent so much time working with environmental modifications and assistive devices, especially considering that the majority would prefer to work with ADL training rather than environmental modifications and assistive devices. On the other hand, it might be difficult to separate implementation of assistive devices and ADL training, as they complement each other.

By identifying the interventions that the participants preferred to provide for persons with cognitive impairments, they indirectly also indicated the interventions they would not prefer to provide. Overall, many participants reported that they would not like to work with assistive devices. Most of them did it at the moment of data collection, but many did not prefer to do so. As mentioned, working with assistive

devices has been defined in several studies as the 'traditional way' of working in community services (Arntzen et al., 2019; Stigen, Bjørk, et al., 2019). Due to demographic changes, the Norwegian health system has been challenging the traditional ways of delivering services for several years. In 2012, the Coordination Reform Act was introduced (CRA) (Meld. St. 47 (2008-2009), 2008) in Norway. In recent years, the CRA might have influenced the occupational therapists' conceptions of 'traditional' and new ways of delivering services. In addition, the ideal type of 'the innovator' was in a recent article referred to as being a preferred role among community-based occupational therapists (Arntzen et al., 2019). The 'innovator' was described as standing in a tension between delivering 'traditional' and 'new' ways of practicing occupational therapy. Thus, whether occupational therapists value the status of some interventions more than others is unclear. Perhaps providing interventions related to assistive devices have received a low status because they are being described as a 'traditional' way of working when new and innovative ways have been in the spotlight and received the most attention in recent years. Then again, what are these new and innovative ways?

Of the participants who indicated that they would not prefer to provide interventions related to ADL training, some did not choose any other interventions. On the other hand, of all the participants who indicated that they would prefer to provide interventions, some preferred cognitive training, some preferred the implementation of assistive technology, a few preferred environmental modifications and a few preferred assistive devices. Thus, it seems like these participants would like to provide interventions for persons with cognitive impairments but just not ADL training. As earlier mentioned, occupational therapists have reported in some cases, being called for in later stages of a progressive condition, which limits interventions that are useful for the clients. Interventions focusing on environmental modifications or implementation of assistive devices may in such cases be the most appropriate solutions. Is it possible to separate these interventions to the degree previous studies have done, or do we need to advocate the 'traditional' way of working in community-based practice, and rather emphasize how to explicitly link this to occupational performance? After all, occupational therapy is a versatile profession, and tasks that occupational therapists perform can differ greatly across different fields and areas in which they work. It is, however, important to acknowledge, as Fisher (Fisher, 2013) stated: "*If occupation is to be embraced as the core of occupational therapy and occupational science, we cannot continue to provide methods that are detached from our occupational core, and which are remote or detached from occupational performance (p.172)*". Thus, occupational therapists

need to be mindful about which services they deliver and acknowledge that simply because occupational therapists conduct tasks and interventions, these are not necessarily occupational therapy.

Methodological considerations/limitations of the study

As with all studies, there were limitations to this study. Questions with answer options might not reflect the viewpoints of the participants (Bowling, 2014), although offering an "other" option was available. The questionnaire was not standardized which could affect the internal validity. Also, this is a cross-sectional study design that does not allow establishing causality given the absence of temporality.

Unique to this study was the differentiation between assistive devices (Norwegian; tekniske hjelpemidler) and assistive technology (Norwegian; velferdsteknologi), which the participants might have defined this differently. We used the definition of WHO; '*Assistive devices and technologies are those whose primary purpose is to maintain or improve an individual's functioning and independence to facilitate participation and to enhance overall well-being. They can also help prevent impairments and secondary health conditions*' *(WHO 2020)* and merged the two categories. However, in the analysis we did not merge the answers of the two interventions, to stay true to the participants' answers.

Four hundred and ninety-seven of a possible 1998 occupational therapists working in community services at the time of data collection, participated in this study. Therefore, it may not reflect the viewpoints of all occupational therapists in community services at that time or presently. However, the distribution of participants related to gender and geographical locations, were representative in both region and gender as reported in previous studies (Hagby et al., 2014). Also, participation was based on self-selection.

Finally, the participants were not specifically asked which interventions they would not like to provide, only what they liked to provide. As such, the results presented on interventions that occupational therapists did not want to provide should be read cautiously.

Philosophical questions needing further exploration

The results of this study indicate that the participants are frequently using interventions related to environmental modifications and assistive devices, which have been labeled in previous studies as 'traditional' occupational therapy in community services and yet they indicated that they preferred to provide interventions related to ADL training. Thus, a gap exists between what they are doing and what they say they would prefer to do. This

study's results indicate that the participants value occupation and occupational performance, the core of occupational therapy. Thus, it might be necessary to reflect how occupational therapists in community services can implement interventions focused on their preferred occupational performance and ADL training, rather than on implementing assistive devices. In addition, we need to discuss assistive devices and environmental modifications as a way to improve occupational performance, rather than the derogatory manner sometimes presented in research or everyday conversations among occupational therapists.

Several studies have emphasized how others' expectations can shape occupational therapy practice and guide therapists' work (Bennett et al., 2011; Gramstad & Nilsen, 2016; Stigen, Bjørk, et al., 2019; Tuntland, 1998). As a result, it is important for occupational therapists to continue to self-advocate and demonstrate to physicians and other health professionals the contributions of occupational therapy (Donnelly et al., 2013; Muir, 2012. However, some occupational therapists experience challenges verbalizing their competence to others (Gramstad & Nilsen, 2016; Tuntland, 1998), and this might be reasons other professionals try to define the responsibilities of occupational therapists (Stigen, Bjørk, et al., 2019). Still, occupation-based evaluation and intervention methods that do not mimic those of other professionals, or is dictated by others, need to be offered by occupational therapists to empower them and emphasize an occupation-centered practice that stresses the importance of the occupational perspective (Fisher, 2013).

The debate on whether occupation is the core of the profession is settled; however, the challenge with implementing this belief through what occupational therapists actually *do* in practice continues (Fisher, 2013; Fisher & Marterella, 2019). Occupational therapists do not always provide intervention and evaluation methods that reflect the central power of occupation in their profession (Fisher, 2013; Fisher & Marterella, 2019). If the assessment methods focus on body structures, implementing interventions emphasizing the occupational perspective can be challenging (Fisher & Marterella, 2019; Hocking & Hammell, 2017). We believe that the results from this study might spark an important topic for professional discussions on the relationship between ADL training and environmental modifications and implementation of assistive technology and devices.

Conclusions

The findings of this study provide insights into interventions provided by Norwegian community-based occupational therapists for persons with cognitive impairments, which has not been documented previously. The

participants frequently provided interventions focusing on environmental modifications and implementation of assistive devices, although they preferred the training of everyday occupations. In practice, however, there is usually an interaction between these three interventions. That is, occupational therapists provide an environmental modification or an assistive device, to increase occupational performance. Hence, we believe the findings from our study can invite a discussion where occupational therapists in community services should talk more explicitly about their experiences with the interaction between these three interventions. Due to the demographic changes leading to an increased focus for community health services on delivering services in new and more effective ways, it is important for occupational therapists engage in a discussion on how community-based occupational therapists make contributions. Occupational therapists should advocate and educate decision-makers and political leaders about the competencies within the occupational therapy profession to develop services needed to enable people to be able to stay in their own homes as long as possible.

Note

1. In the Norwegian terminology, assistive devices relate to solutions such as walkers, toilet chairs etc., and assistive technology relates to solutions such as memory aids, alarms etc.

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Data availability

The dataset this article is based on is not released as it is currently being analyzed for further associations and publications.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

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References

Aas, R. W., & Grotle, M. (2007). Clients using community occupational therapy services: Sociodemographic factors and the occurrence of diseases and disabilities. *Scandinavian Journal of Occupational Therapy*, *14*(3), 150–159. https://doi.org/10.1080/11038120600968811

Arntzen, C., Sveen, U., Hagby, C., Bonsaksen, T., Dolva, A.-S., & Horghagen, S. (2019). Community-based occupational therapy in Norway: Content, dilemmas, and priorities. *Scandinavian Journal of Occupational Therapy*, *26*(5), 371–381. https://doi.org/10.1080/11038128.2018.1548647

Ávila, A., De-Rosende-Celeiro, I., Torres, G., Vizcaíno, M., Peralbo, M., & Durán, M. (2018). Promoting functional independence in people with Alzheimer's disease: Outcomes of a home-based occupational therapy intervention in Spain. *Health & Social Care in the Community*, *26*(5), 734–743. https://doi.org/10.1111/hsc.12594

Bennett, S., Shand, S., & Liddle, J. (2011). Occupational therapy practice in Australia with people with dementia: A profile in need of change. *Australian Occupational Therapy Journal*, *58*(3), 155–163. https://doi.org/10.1111/j.1440-1630.2011.00930.x

Bonsaksen, T., Dolva, A.-S., Hagby, C., Sveen, U., Horghagen, S., Thyness, E. M., & Arntzen, C. (2018). Involvement in research and development projects among community-working occupational therapists in Norway. *Occupational Therapy In Health Care*, *33*(1), 22–36. https://doi.org/10.1080/07380577.2018.1526434

Bonsaksen, T., Dolva, A.-S., Horghagen, S., Sveen, U., Hagby, C., & Arntzen, C. (2020). Characteristics of community-based occupational therapy: Results of a Norwegian Survey. *Scandinavian Journal of Occupational Therapy*, *27*(1), 39–46. https://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=140999209&site=ehost-live https://doi.org/10.1080/11038128.2019.1609085

Bowling, A. (2014). *Research methods in health, Investigating health and health services* (4th ed.). Open University Press, McGraw Hill Education.

Bredland, E. L., Linge, O. A., & Vik, K. (2011). *Det handler om verdighet og deltakelse Verdigrunnlag og praksis i rehabiliteringsarbeidet [It's all about dignity and participation. Core values and practice in rehabilitation work]* (3rd ed.). Gyldendal Akademisk.

Brintnell, S., Laver Fawcett, A. J., & Ledgerd, R. (2011). International development of occupational therapy: What will you contribute? *British Journal of Occupational Therapy*, *74*(10), 455–455. https://doi.org/10.4276/030802211X13182481841822

Burns, S. P., & Neville, M. (2018). Cognitive impairment in adults with stroke. Incorporating assessment and intervention approaches in the home environment. *OT Practice 6*, 9–13. https://www.aota.org/Publications-News/otp/entire-issue.aspx

Carrier, A., Levasseur, M., Bedard, D., & Desrosiers, J. (2010). Community occupational therapists' clinical reasoning: Identifying tacit knowledge. *Australian Occupational Therapy Journal*, *57*(6), 356–365. https://doi.org/10.1111/j.1440-1630.2010.00875.x

Corp, I. (2013). *IBM SPSS Statistics for Windows. Version 22.0*. IBM Corp.

Donnelly, C., Brenchley, C., Crawford, C., & Letts, L. (2013). The integration of occupational therapy into primary care: A multiple case study design. *BMC Family Practice*, *14*, 60 https://doi.org/10.1186/1471-2296-14-60

Easyfact. (2014). *Easyfact. Asker: Easyfact AS*. www.easyfact.no

Fawcett, A. L., Payne, S., & Howell, C. (2007). Methods of assessment and sources of assessment data. In A. L. Fawcett (Ed.), *Principles of Assessment and Outcome Measurement for occupational Therapists and Physiotherapists* (pp. 45–89). Wiley & Sons.

Fisher, A. G. (2013). Occupation-centred, occupation-based, occupation-focused: Same, same or different? *Scandinavian Journal of Occupational Therapy*, *20*(3), 162–173. https://doi.org/10.3109/11038128.2012.754492

Fisher, A. G., & Marterella, A. (2019). *Powerful practice: A model for authentic occupational therapy*. Ciots.

Folstein, M., Folstein, S., & McHugh, P. (2001). *Mini-Mental State Examination (MMSE®)*. In P. A. R. (PAR) (Ed.), *[Internet]*. http://www4.parinc.com/products/product.aspx?Productid=MMSE.

Førland, O., & Skumsnes, R. (2016). *Reablement- A summary of knowledge [Hverdagsrehabilitering- En oppsummering av kunnskap]*. Summary, No. 2, Centre for Care Research.

Furr, R., & Bacharach, V. (2017). *Psychometrics. An introduction* (3rd. ed). Sage Publications, Inc.

Giles, G. M. (2011). A neurofunctional approach to rehabilitation after brain injury. In N. Katz (Ed.), *Cognition, occupation and participantion across the life span. Neuroscience, neurorehabilitation and models of intervention in occupational therapy* (3rd ed., pp. 351–381). AOTA Press.

Giles, G. M., Radomski, M. V., Champagne, T., & Al, e. (2013). Cognition, cognitive rehabilitation, and occupational performance. *The American Journal of Occupational Therapy*, 73(Supplement_2). http://search.ebscohost.com/login.aspx?direct=true&db=c8h&AN=2012375083&site=ehost-live

Gitlin, L. N. (2015). Environmental adaptions for individuals with functional difficulties and their families at the home and community. In I. Söderback (Ed.), *International handbook of occupational therapy interventions* (2nd ed., pp. 165–175). Springer.

Graff, M. J. L., Vernooij-Dassen, M. J. M., Thijssen, M., Dekker, J., Hoefnagels, W. H. L., & OldeRikkert, M. G. M. (2007). Effects of community occupational therapy on quality of life, mood, and health status in dementia patients and their caregivers: A randomized controlled trial. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*, *62*(9), 1002–1009. https://doi.org/10.1093/gerona/62.9.1002

Graff, M. J. L., Vernooij-Dassen, M. J. M., Thijssen, M., Dekker, J., Hoefnagels, W. H. L., & Rikkert, M. G. M. O. (2006). Community based occupational therapy for patients with dementia and their care givers: Randomised controlled trial. *BMJ (Clinical Research ed.)*, *333*(7580), 1196 https://doi.org/10.1136/bmj.39001.688843.BE

Gramstad, A., & Nilsen, R. (2016). "Vi blir ikke brukt godt nok" Kommuneergoterapeuters erfaringer med utfordringer i arbeid med brukere og andre faggrupper ["We are not used well enough" Municipal occupational therapists experiences with challenges in their work with clients and other professionals]. *Ergoterapeuten*, *59*(4), 30–39.

Gramstad, A., & Nilsen, R. (2017). Prioriterte områder for forskning blant kommuneergoterapeuter i Norge [Prioritized topics for research amongst Norwegional occupational therapists]. *Ergoterapeuten*, *60*(3), 36–45.

Hagby, C., Bonsaksen, T., Dolva, A., Horghagen, S., Sveen, U., Solbakken, A., & Thyness, E. (2014). Bruker norske ergoterapeuter undersøkelses- og vurderingsredskaper? Resultater fra medlemsundersøkelsen i 2013: Del 1 [Do Norwegian occupational therapists use assessment- and evaluation tools? Results from the Membersurvey in 2013: Part 1]. *Ergoterapeuten*, *57*(4), 22–27.

Hocking, C., & Hammell, K. W. (2017). Process of assessment. In M. Curtin, M. Egan, & J. Adams (Eds.), *Occupational therapy for people experiencing illness, injury or impairment* (7th ed.). Elsevier.

Hoppes, S., Davis, L. A., & Thompson, D. (2003). Environmental effects on the assessment of people with dementia: A pilot study. *American Journal of Occupational Therapy*, *57*(4), 396–402. https://doi.org/10.5014/ajot.57.4.396

Johansson, K., Lilja, M., Petersson, I., & Borell, L. (2007). Performance of activities of daily living in a sample of applicants for home modification services. *Scandinavian Journal of Occupational Therapy*, *14*(1), 44–53. https://doi.org/10.1080/11038120601094997

Koh, C., Hoffmann, T., Bennett, S., & McKenna, K. (2009). Management of patients with cognitive impairment after stroke: A survey of Australian occupational therapists. *Australian Occupational Therapy Journal*, *56*(5), 324–331. https://doi.org/10.1111/j.1440-1630.2008.00764.x

Law, M., & Baum, C. (2017). Measurement in occupational therapy. In M. Law, C. Baum, & W. Dunn (Eds.), *Measuring occupational performance. Supporting best practice in occupational therapy* (3rd ed.). SLACK Incorporated.

Malmgren Fänge, A., Lindberg, K., & Iwarsson, S. (2013). Housing adaptations from the perspectives of Swedish occupational therapists. *Scandinavian Journal of Occupational Therapy*, *20*(3), 228–240. https://doi.org/10.3109/11038128.2012.737368

Meld. St. (2008-2009). (2008). Samhandlingsreformen. Rett behandling- på rett sted- til rett tid. [Coordination Reform. The right treatment- at the right place- at the right time]. Oslo: Helse- og omsorgsdepartementet.

Meyer, A. (1922). The philosophy of occupational therapy. *Archives of Occupational Therapy*, *1*, 1–10.

Ministry of Health and Care Services. (2012). *Public Health Act of 2012*. Ministry of Health and Care Services.

Muir, S. (2012). Occupational therapy in primary health care: We should be there. *The American Journal of Occupational Therapy: Official Publication of the American Occupational Therapy Association*, *66*(5), 506–510. https://doi.org/10.5014/ajot.2012.665001

Smedslund, G., Siqveland, J., & Leiknes, K. A. (2015). *Psychometric assessment of the Clock Drawing Test*.

SSB, S. C B. (2019). *Norwegian occupational therapists*. https://www.ssb.no/statbank/table/12191/

Stigen, L., Bjørk, E., & Lund, A. (2019). The conflicted practice: Municipal occupational therapists' experiences with assessment of clients with cognitive impairments. *Scandinavian Journal of Occupational Therapy*, *26*(4), 261–272. https://doi.org/10.1080/11038128.2018.1445778

Stigen, L., Bjørk, E., & Lund, A. (2020). The power of observation. Occupational therapists' descriptions of doing observations of people with cognitive impairments in the context of community practice. *Scandinavian Journal of Occupational Therapy*, *27*, 1–13.

Stigen, L., Bjørk, E., Lund, A., & Småstuen, M. (2018). Assessment of clients with cognitive impairments: A survey of Norwegian occupational therapists in municipal practice. *Scandinavian Journal of Occupational Therapy*, *25*(2), 88–98. https://doi.org/10.1080/11038128.2016.1272633

Tempest, S., & Maskill, L. (2017). Occupation and cognitive rehabilitation. In L. Maskill & S. Tempest (Eds.), *Neuropsychology for occupational therapists. Cognition in occupational performance*. (4th ed., pp. 3–16). Wiley Blackwell.

Toglia, J. (2011). The dynamic interactional model of cognition in cognitive rehabilitation. In N. Katz (Ed.), *Cognition, occupation, and participation across the life span. Neuroscience,*

neurorehabilitation, and models of intervention in occupational therapy (3rd ed., pp. 161–201). AOTA press.

Tuntland, H. (1998). *Ergoterapeuters yrkesutøvelse og rolleutvidelse i kommunehelsetjenesten [Occupational therapists professional practice and role expansion in municipal health services]* [Master thesis]. Universitetet i Oslo.

VandenBos, G. R. (2015). *APA dictionary of psychology* (2nd ed.). American Psychological Association.

Walker, M. F., Leonardi-Bee, J., Bath, P., Langhorne, P., Dewey, M., Corr, S., Drummond, A., Gilbertson, L., Gladman, J. R. F., Jongbloed, L., Logan, P., & Parker, C. (2004). Individual patient data meta-analysis of randomized controlled trials of community occupational therapy for stroke patients. *Stroke*, *35*(9), 2226–2232. https://doi.org/10.1161/01.STR.0000137766.17092.fb

Wilson, B. A., Herbert, C. M., & Shiel, A. (2016). *Behavioural approaches in neuropsychological rehabilitation. Optimising rehabilitation procedures*. Psychology Press.