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MEN'S AND WOMEN'S PERSPECTIVES OF USING A POWERED MOBILITY DEVICE – BENEFITS AND SOCIETAL CHALLENGES

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Abstract

Objective: To describe how men and women experience their use of powered wheelchair (PW) and powered scooters (PS) in everyday occupations, in the home and society at large.

Methods: A qualitative research approach with focus group methodology was used. Four focus groups were created, with men and women as well as PW and PS users in different groups. Applying a descriptive approach, data were analyzed according to the principles described by Krueger.

Findings: Three categories emerged and revealed that even though use of PW and PS increased independence and enabled everyday occupations, participants struggled to be independent powered mobility device (PMD) users. They experienced many accessibility problems in dwellings and in society, described similarly by users of PW and PS. Men and women experienced their use of (PMD differently, especially in relation to the service delivery process.

Conclusions: The study contributes with new knowledge on accessibility for PW and PS users and related service delivery processes, stating that gender differences regarding provision and training must be taken into account. Occupational therapists can contribute to an enhanced understanding of the PMD users' challenges in person-environment-occupation transactions in the home and society, and thereby promote occupational justice for PMD users.

INTRODUCTION

As people are increasingly getting older and mobility limitations are associated with higher age, the prevalence of mobility limitations is also increasing. Mobility is pivotal as it is a prerequisite for managing everyday occupations (1). When a mobility limitation cannot be compensated for with a walker or a manual wheelchair, a powered mobility device (PMD), may facilitate mobility in everyday occupations (2). Most of those who received a PMD in

Sweden during 2008 were between 65-79 years (3). It has been discussed that people with mobility limitations might be in need of a PMD earlier, e.g. before loss of all walking ability (2), suggesting that PMD users younger than 65 years should also be included when studying PMD use.

PMDs can be divided into two different types: a powered wheelchair (PW), and a powered scooter (PS). A PW is operated by a joystick or other switches, and can be used both indoors and outdoors, while a PS is operated by handlebars and is primarily used outdoors (4).

Using a PMD has been shown to positively influence everyday occupations (2), participation (2, 5), and quality of life (2, 5-7), but does not seem to add additional occupations to the repertoire of everyday occupations (7, 8). The reason for this is not known, but it has been suggested that environmental factors might be a contributing factor (7). The physical and social environment is known to both promote and limit the use of assistive devices in general, and the integration of the device in the user's context is important (9). Yet, studies of PMDs do not often simultaneously consider personal, environmental and occupational aspect (7), even if this has been advocated for (10).

To be able to use a PMD optimally at home, and to be able to move in and out independently, it is important that the dwelling is usable for the PMD, otherwise the dwelling must be adapted (8, 11). Still, it is not clear how environmental barriers in dwellings influence PW and PS use, especially not from the users' own perspective. Regarding outdoor use, PMD users experience a greater independence compared to when they did not have the device (12). However, public buildings and places outdoors as well as homes of friends and family are known to hinder the use of PMDs, impacting also social occupations such as meeting friends (8, 13). Since most previous studies used methodology with limited potential to capture the

user perspective (8, 14), the knowledge on users own perceptions and experiences is limited. Moreover, previous research has mainly studied PW and PS use without any differentiation.

Another issue is gender differences regarding PMD use (8). Women seem to use their PMDs less away from their homes than men (14), and men seem to have better driving skills than women (15). Men also use their PMDs more often and for prioritized occupations, whereas women use them for more differentiated occupations, i.e. many different types of occupations (2). While not verified by research, gender differences could be explained by the fact that men and women engage in different types of occupations, have different knowledge of technology (2), or have different experiences in relation to training strategies (14, 15). Thus, the aim of this study was to describe how men and women experience their use of PWs and PSs in everyday occupations, in the home and society at large.

METHOD

Applying a qualitative approach, focus groups methodology with a descriptive design was used. Data were collected with explicit attention to group interactions in which the participants discussed their own perceptions and experiences of the topic in common; they were seen as experts of the issue in focus (16, 17).

Participants

Potential participants were recruited from a rehabilitation clinic in the south of Sweden. They were purposefully selected, based on the inclusion criteria age 50 years or older, having used a PW or PS for at least one year, and living in ordinary housing. They should also be able to understand and speak Swedish, and be able to discuss and share experiences in a focus group discussion. To capture different experiences among men and women, as well as among PW and PS users, the participants were divided into four focus groups. Accordingly, our focus groups were homogenous in that they consisted of either users of PWs or of PSs, and either of men or women. According to Krueger & Casey (16), if for example men and women have

different experiences of a common topic, genders should not be mixed; and homogeneity should be given priority over heterogeneity (18). To stimulate variations in the discussions (16), the focus groups were heterogeneous regarding diagnosis, age, type of housing and residence location, and time using a PW or PS. One woman who used a PS and lived in a two-family house was not able to participate. Thus, a total of 16 men and women with different neurological disorders participated in one of the four different focus group discussions. All PS users used their device outdoors, while the PW users used theirs both indoors and outdoors, except for two women who used their PW only outdoors. The majority were cohabiting (n=13), and eight participants had a personal assistant or home help. All but one had received different housing adaptations related to the PMD use, such as automatic door openers, ceiling lifts, stair lifts, and/or ramps. PW users had also had their kitchens and bathrooms modified, whereas the PS users typically had received stair lifts, ramps, and storage rooms (Table 1).

The Regional Ethical Review Board in Lund, Sweden, approved the study (2012/376). Written informed consent was obtained from all participants.

Table 1. Characteristics of participants in four focus groups, including a total of 16 participants.

	Focus-group			
	1	2	3	4
Number of participants, n (ID)	5 (P1-P5)	4 (P6-P9)	3 (P10-P12)	4 (P13-P16)
Age, range of years	52-72	55-61	56-62	51-73
Gender	Women	Men	Women	Men
Powered mobility device ^a	PW	PW	PS	PS
Range of years using PW/PS ^a	2-15	1-26	1-6	2-10
Type of housing	One-family, two-family house	Apartment; one-family, two-family house	One-family house	One-family, two-family house
Location	Urban, rural	Urban, rural	Urban, rural	Urban, rural

^a PW= Powered wheelchair; PS= Powered scooter.

Relevant national legislation

In Sweden, the interventions relevant for the present study are governed by national legislation. Based on the Health Care Act (SFS:763) (19), people assessed to be in need of mobility devices, such as PMDs, can receive most of them free of charge. The need is often assessed by an occupational therapist. According to regulations, the PMD has to be used at least 20 hours per year. In the service delivery process of PMDs, acquisition, training, and maintenance are included. Likewise, housing adaptation is based on individual needs, and in Sweden, this intervention is governed by a specific law (SFS 1992:1574) (20), and full cost coverage can be applied for in the municipality. Special Transport Service (STS) is another type of support, available for people who do not manage to use standard public transport.

Data Collection

To schedule the focus group discussions and to collect demographic data, the participants who agreed to participate were contacted by the first author (CP) via telephone. Each focus group met once, with the same moderator (CP) and co-moderator (LN) in all sessions. They are both experienced occupational therapists, experienced in interviewing mobility device users. Each focus group discussion was conducted in the same way. That is, initially the moderator informed the participants of the aim of the study, and emphasized that they were the experts of the topic. In all focus groups, there was one participant who needed assistance from either a personal assistant or a family member. This person was present but instructed not to take any part in the discussions.

By way of introduction, the participants presented themselves and described which type of PW or PS they had, and for how long they had used the device. Thereafter, they were asked to read a short vignette (approximately 220 words) (21) which described a person who used a PW or PS. Four different vignettes were used, which were based on the findings of an earlier case study (11) and represented situations similar to those of the participants of the present

study. The vignette for the PW users described a person who used a PW indoors and outdoors, and had received a housing adaptation indoors. The PW user strived to be independent and manage every day occupations. The vignette used for the PS users was identical, except that the PS was used outdoors and the person had received outdoor housing adaptation. The two different types of vignettes were also adapted for gender. All four vignettes included the person's thoughts about the future PW or PS use. The vignettes were used as a starting point for the discussions, and were complemented with an interview guide which was the same for all focus groups. The interview guide was used to ensure that the participants discussed issues related to the aim of the study. It included questions about how the participants experienced their use of the PW or PS for different occupations and in different environments, whether they experienced any barriers or facilitators in relation to PMD use, and how they handled potential problems in relation to using their PMD. Prior to the data collection, the vignettes as well as the interview guide were tested in two individual pilot interviews with one PW user and one PS user, who did not participate in the study and were found to be appropriate. The focus group discussions lasted from 75 to 84 minutes, and were audiotaped and transcribed verbatim. Each focus group discussion was conducted independently, e.g. without transferring the different topics discussed from one focus group to another according to Krueger and Casey (16).

Data Analysis

Applying a descriptive approach, the data were analysed according to Krueger and Casey (16), and commenced directly after each focus group discussion. In the first step, the transcripts were read and listened to several times in order to get a sense of the whole material. Thereafter, sections from the discussions that were relevant for the aim of the study, and focused on the meaning emerging from the joint discussions rather than on individual comments, were identified and categorized by the first author (CP). In this step, the data were

still raw in their context, i.e. close to the participants' own words. This process was first performed separately for each focus group, and then the emerging findings from all groups were further synthesized until a set of preliminary sub-categories and categories for all groups were established. The data analysis was performed interactively by the first (CP) and the last author (EML). The preliminary findings were validated several times by the other co-authors, and also discussed at a seminar with other occupational therapy researchers experienced in qualitative methodology. Finally, all the co-authors agreed on the findings.

FINDINGS

The findings formed three categories: Struggling to be an independent PMD user; experiencing an imbalance between individual needs and regulations for PMD use; and experiencing challenges in accessibility in society at large. Even though the participants used different types of PMDs, they had many experiences in common, and gave different examples regarding similar topics. Overall, having a PMD was described as something very beneficial, even though the participants struggled for independence and tried to overcome accessibility problems. They described their use of the PMD as a complex matter which involved their everyday occupations, themselves as a person, and the context where the occupation took place.

Struggling to be an independent PMD user

This main category comprised two sub-categories: Struggling to include the PMD as part of everyday occupations; and struggling to operate the PMD. The participants discussed the transition from using a manual wheelchair to becoming an independent PMD user in everyday occupations. They described how relations to other people sometimes were difficult, and how they also struggled to operate their device.

Struggling to include the PMD as part of everyday occupations

The men who used PW discussed how they at first did not want to have PWs and leave their manual wheelchairs, since they saw it as a sign of failure and of decline. Their own reflections were that they had been stubborn and had wanted to manage everyday occupations without a PW, and how they had struggled before they had come to realize that they should have had it earlier. The women who used PW did not mention that they should have had the PW earlier, but described how they struggled with getting used to using it among other people. They felt they were being stared at when they drove their PW for the first time, and they had to force themselves to go outside using the PW. Now, they said their PW had become a part of them, managing their everyday occupations. The PW users of both genders expressed how they wished that the occupational therapist would have facilitated the process of accepting the device, for example by demonstrating the opportunities and advantages of using a PW.

All participants explained that their use of a PMD gave them freedom that enabled them to be active and independent. All PS users discussed how they appreciated that they could get out getting fresh air and have a look around. PW users of both genders described that from the time they received their PWs, they were no longer in need of home care or relatives, and were now able to engage in everyday occupations independently. Using a PW was expressed as a prerequisite for being able to manage everyday occupations. Receiving help from other people was also discussed across all focus groups, and in general, people are kind and help when they are asked to, but the women did not like when people offered help when it was not needed. Another aspect in relation to this, shared across all focus groups, was how the participants experienced that other people did not speak directly to them, but instead turned to the person who accompanied them, who was not a PMD user. This was particularly emphasized among the women who had only used their PS for a short period.

Struggling to operate the PMD

Across all focus groups, the participants described how they struggled to handle different parts and functions of their PMDs. They expressed that they often thought about how far they could drive. The women who used PS stressed that they got nervous of staring at the meter whereas, in contrast, the women who used PW expressed the importance of having a meter.

Another issue that was discussed in relation to operate the PMD was safety issues. The men who used PW said that they were aware of the importance of using turn signals and lights on the PWs, but they did not always use them. They found it too complicated, since they had to handle several functions at the same time, with the same hand. The importance of being aware of risks and problems when driving PWs among others was also emphasized. The men who used PS described how they altered their driving depending on the circumstances in the environment, for example by changing their speed. The women who used PS described that they were aware of the risk of having the PS stolen, and therefore they never left them, for example outside a shop. The women who used PW also described their strategies for operating their PWs, and gave examples of how they avoided crowds and had bought reflexive vests and flags to ensure that they were visible in traffic.

Experiencing an imbalance between individual needs and regulations for PMD use

This category consisted of two sub-categories: Having appropriate provision and service delivery of PMDs is a necessity; and having appropriate housing adaptation to facilitate PMD use is crucial. The participants discussed the provision process and their different needs in relation to when the PMD was provided, and also the support in the service delivery process. They also shared experiences in relation to the possibility of receiving housing adaptations that corresponded to using a PMD according to individual needs.

Having appropriate provision and service delivery of PMDs is a necessity

All the focus groups discussed the PMD service delivery process (acquisition, training, and maintenance of the device received), and the importance of receiving the correct type of PMD in relation to their individual needs. The participants discussed difficulties with driving during cold as well as rainy weather, and as a consequence they used their devices less during the winter.

The women who used PW emphasized the need of having more than one PW to manage everyday occupations. For example, they said they needed one PW for outdoor use, and one smaller device indoors to manage kitchen occupations, but since they were only allowed one device, they had choose to prioritise a PW for outdoor use. Some of the women had managed to receive two devices, whereas others said their struggle to have the occupational therapist understand their needs had been unsuccessful. This issue was not mentioned in the discussions with the men. Among the PS users, the discussions were focused on the type of PS models that were available for acquisition, and how it sometimes was difficult to get the appropriate type of PS. For example a device that could manage rough terrain in the forest or at the seaside.

Another issue mentioned was the specified driving time demand of 20 hours per year. This was discussed among the two focus groups with women, where users of PWs and PSs had different opinions. The PS users found it stressful to achieve the required driving time, whereas the PW users felt that this was not a problem at all. They argued that if you do not need a PW, you do not ask for one, and if you really need a PW, then you use it. The men did not discuss this topic at all.

The participants discussed the training in PMD driving that they received in the service delivery process, especially the men who used PS. They shared the feeling that they sometimes lacked enough training when they received their PSs, whereas this was not at all discussed among the women. Another aspect discussed among all the PW users was repairs.

They said they were satisfied with the repairs they received but also concerned since repairs were not available during weekends. Since they were completely dependent on their PWs, they were worried they would not be able to manage their everyday life if no repair services were available.

Having the appropriate housing adaptation to facilitate PMD use is crucial

All four groups discussed the possibility of receiving housing adaptations that would facilitate PMD use. Among the PW users, some participants had positive experiences, while others were more negative. The PW users discussed how they had received housing adaptations mainly indoors in their dwellings, and that housing adaptations are pivotal. The women who used PW emphasized that the possibility of getting a housing adaptation differs depending on which municipality you live in, which they argued was not acceptable. In contrast, the PS users discussed housing adaptations outdoors. The men stressed that they should not have the responsibility to arrange for storage, and argued that a housing adaptation, paid for by the municipality, should be a prerequisite when a PS is provided. The women PS users expressed how housing adaptations for storage had taken a long time to process, and consequently they had to wait to receive their devices. They discussed how occupational therapists and administrators in the municipalities have a shared responsibility for housing adaptations, but they did not collaborate very efficiently. They discussed that this process and the collaboration between the different people involved must be improved:

P 11: ... the Region [the authorities responsible for PS acquisition] kept on asking [me] all the time [about the housing adaptation proceeded] but I just wanted them to contact the municipality.... Unfortunately the same thing happened with the housing adaptation, it took such a long time, so finally we did it by ourselves but it is...you have the right to have [a housing adaptation] but it [the decision process of housing adaptation] does not work.

P 10: There should have been collaboration between the municipality [and the Region] then it would have been easy.

P 11: ... it would have been the same who [were responsible for] both [the PS acquisition and the housing adaptation].

P 10: Yes, the PS and the storage. (Focus group: women PS)

Experiencing challenges of accessibility in society at large

This category comprised two subcategories: Experiencing insufficient accessibility in public environments; and experiencing insufficient accessibility when transporting and travelling with the PMD. The participants discussed accessibility problems related to the PMDs, and current policies and standards for accessibility in society. They also described challenges in relation to travelling with the PMD as well as transporting the device, e.g. driving the PMD.

Experiencing insufficient accessibility in public environments

Across all focus groups, the participants experienced accessibility problems in public buildings such as libraries and shops. The men PW users complained that the toilets in public buildings were constructed for manual wheelchair users, and not accessible for those using PWs. The women expressed that they felt excluded since they do not have access to public environments. Another example of exclusion expressed among PW users of both genders, was that they sometimes could not access their friends' dwellings due to stairs and lack of accessible toilets, and as a consequence they found it difficult to maintain their social network.

Users of both genders gave examples of insufficient space for the PMD, for example, they described how lifts in public buildings were too narrow, and also had insufficient space outside. The men also claimed that most of the accessible parking spaces often have sufficient space for manual wheelchairs but not for PMDs. Likewise, they had learnt that shopping centres and newly built shops were accessible for PMDs, while the women who used PS

expressed how they felt limited to boring shopping centres arguing that all buildings should be accessible for PMD users.

Across all focus groups, the participants emphasised the importance for occupational therapists, municipality administrators, politicians, and the general public to gain knowledge about accessibility, not only in relation to manual wheelchairs but also in relation to PMDs. One example that was described was how ramps installed at shops, not always were accessible for PW users:

P 1: ...a metal ramp that they put over the stairs and it feels extremely dangerous since you have to go straight up.

P 4: Sometimes they have those tracks, but it's impossible to drive the PW on them [the two parallel tracks] because they should have an entire metal ramp.

P 5: Yes, yes.

P 4: Then it's no problem.

P 2: Well, parallel tracks, often they are very happy that they [shops owners] have those tracks because they feel they have done something to help [facilitate accessibility].

(Focus group: women PW)

Some of the men who used PW elucidated how they had informed politicians, media, and others about their needs. The men who used PW emphasized that occupational therapists and PW users have valuable knowledge about accessibility for PWs, and should be involved whenever new buildings are being planned, and to plan for accessibility in society at large. Moreover, if the different actors could work together, accessibility in public buildings and in society at large could be improved.

P 9: The occupational therapists that have knowledge should be contacted when toilets are being built since now they use the standard on new toilets, but it's not enough for us.

P 7: There [at the local swimming pool] are toilets but there are no accessible toilets so now when they are rebuilding it [accessible toilets] ... I went to the municipality and told them not to forget that PW users need space to turn around. We need to have changes [in accessibility], but it comes about as a result of discussion in society and so on...

P 9: Even today they build toilets according to a certain standard that does not work [for a PW] so I told the occupational therapist and then the politicians how an accessible toilet should be [suitable for a PW]. (Focus group: men PW)

Experiencing insufficient accessibility when transporting and travelling with the PMD

In all four focus groups, the participants described difficulties when travelling with their PMD. For example, they often needed assistance when they boarded or exited a bus or train with their PMD, since they had to drive the PMD on a ramp. Sometimes a ramp was lacking, and occasionally the station platform was lower than the train, which made it difficult to independently board the train with the PMD. The women who used PS also described difficulties when using the STS, and that they needed more information to be able to use the STS with the PS. Especially the men who used PMD considered being able to transport their devices by car as to be important. Some had received a car modification, while others managed to transport their PMDs by means of ramps and a trailer to the car. Yet, they sometimes did not manage to bring the PMD in the car, for example when they went shopping together with their wives, and therefore they often had to wait in the car. The men using PW said that it sometimes was easier to use their device to drive directly to the desired destination instead of bringing it in the car, because it caused too many strenuous transfers.

Across all focus groups, the participants discussed difficulties when they wanted to bring their PMDs while travelling to new places and other countries. The men who used PS discussed how they tried to use their device at other places than those they already knew, and turned back if they encountered accessibility problems, whereas the men who used PW were

more careful and checked the accessibility beforehand. The women described how they did not dare to take the risk of not being able to use their device when arriving at a new place. They also complained that it is difficult to rent a PW on site, because it is a personalized device that is specifically adjusted for the individual. For some, this also meant they totally refrained from travelling with their PWs.

DISCUSSION

The findings from this descriptive study reveal that men and women using PWs and PSs share similar experiences. But there are also gender differences and differences related to the different types of PMDs, especially regarding accessibility issues and the device service delivery process. Being an independent PMD user implies both challenges and struggles, and the experiences of the PMD users in this study show that professionals need to be aware of the users' individual needs in the provision and service delivery process. This is in accordance with previous research on assistive technology in general (22-24), but adds to the knowledge on the specific situation of people using PMDs.

While the PMD users in our study experienced that they were able to manage everyday occupations more independently after receiving a PMD, they also described that they had to struggle with many accessibility problems, especially in public environments and transports. This can be explained by the fact that the use of PMDs requires accessibility to an extent beyond what is demanded by current standards for environmental design. This aspect of our results underlines that standards for accessibility in public environments as for example shops, toilets, parking places, buses and trains must be revised and adapted to accommodate not only manual wheelchair users but also people that use PMDs. Even though the accessibility problems seem to be similar among the PW and the PS users in our study, they were more

pronounced among those using PWs. Thus, once standards for accessibility are adapted for PW use, accessibility in society will be improved for all types of PMDs.

The PMD users in this study described how accessibility problems made them feel excluded from taking part in everyday occupations in different contexts, in part due to insufficient knowledge among politicians and the public. This is particularly notable, since according to legislation passed by the Swedish Parliament in 2010 (25), public buildings have to be accessible. This is in line also with the Convention on the Rights of People with Disabilities (UN) (26), stating that public buildings and places have to be made more accessible for people with mobility limitations. Further, facilitating societal inclusion is part of the notion of occupational justice (27, 28), and has previously been emphasized in relation to assistive technology (29).

As confirmed by the present study, on the individual level housing adaptation is a common intervention among PMD users (11). In the present study, the PMD users ask for improved assessment procedures before receiving the PMD as well as the related housing adaptation, to avoid a delay in the delivery of the device. Improved collaboration between the different actors involved is necessary, taking individual needs, type of housing and type of PMD into account. In relation to housing adaptation, our study shows that the need for more than one PMD must be considered during the provision process. Allowing provision of only one type of PW often leads to additional housing adaptations over time (30), which might be prevented with a more efficient assessment prior to the provision of the device solution.

The men and women in this study seemed to share similar experiences in relation to housing adaptation, but regarding the PMD service delivery process, different experiences were brought forward. The women in this study emphasized a need for two PWs, for indoor and outdoor use respectively, e.g. a device appropriate for managing everyday occupations, indoors as well as outdoors. This is in accordance with previous knowledge, stating that men

and women use their PMD for different occupations (2, 31). Our findings also revealed different experiences among the genders regarding training in PMD use. Our findings show the importance of training when a PMD is delivered, and indicates that the training should be designed differently for men and women, as suggested also by others (9, 31). Still, since our findings demonstrate that the men in this study seemed to use trial and error when driving a PMD whereas our women did not dare to try using their device in new environments, our study contributes with new knowledge that can be used for more individualised training. A similar aspect was reported in relation to driving a car in an ageing population (32), suggesting that men and women reason differently when it comes to vehicles.

Turning to methodological issues, in the recruitment process different aspects of homogeneity and heterogeneity were accounted for (16). All our participants had a neurological diagnosis. Still, we do not believe that our findings would be influenced if participants with other diagnoses had been included, since our aim was to study experiences among PMD users and not the potential influence of different diagnoses. By describing experiences among the men and the women as well as the users of different types of PMD, the present study generated a deepened knowledge regarding various experiences among different user groups. Even if some evidence for different experiences was found in our study, the findings should not be generalized to all men and women. Still, given the careful sampling procedure taking homogeneity and heterogeneity into account, the findings might be transferable to similar populations. In terms of limitations, we had one drop-out, and each focus group comprised of only a few participants, which might have limited the range of experiences elucidated (16). However, the discussions were lively; a fact that is known to be more important than the number of participants in a focus group (33). The fact that we did not bring the topics that were discussed from one group to another might be regarded as a study limitation, but since the aim was to describe topics related to different groups of PMD users,

we consider the design applied appropriate. The vignette used to initiate the discussions may also have influenced the topics put forward, but since the participants seemed to recognize themselves in the vignette, we believe that it facilitated the discussions, something that has also been confirmed by others (21). Further, the pre-understanding of the researchers involved in the study must be taken into consideration when interpreting the findings. Most likely, if researchers representing professions or disciplines beyond that of occupational therapy had been part of the interviews and the analysis process, the findings might have revealed other facets of experiences. Finally, it should be kept in mind that according to the aim of our study, we adhered to a descriptive analysis approach. Since the participants gave many concrete examples and vividly illustrated their experiences, the descriptive approach served well to produce results that can readily be translated into recommendations for clinical practise.

Conclusions

The present study shows that even though PWs and PSs increase independence and enable everyday occupations, the users experience challenges related to the use of their devices. They experience accessibility problems at home and in society at large, which sometimes influence their everyday occupations negatively. This enhanced understanding of the PMD users' challenges in person-environment-occupation transactions in the home and society contribute to facilitate PMD use, and to enhance inclusion in the society. Our study also contributes with important knowledge in relation to gender differences in the provision, training and service delivery process of a PMD. This also emphasizes the importance for future studies to develop evidence-based interventions targeting the service delivery process of PMDs.

Clinical implications

Occupational therapists are well qualified to contribute to an enhanced understanding of the PMD users' challenges in person-environment-occupation transactions in the home and society. To enable an optimal PMD use and to foster occupational justice, the service delivery

process must be improved, taking gender perspectives into account, for example by implementing evidence-based intervention programs. Occupational therapists should also use their specific knowledge and collaborate with politicians, designers, municipality officials, and PMD users when public environments are planned for.

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