

Occupational Performance Problems in 85-Year-Old Women and Men in Sweden

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Abstract

An area of concern for occupational therapy is to increase preventive interventions among relatively healthy elderly individuals. The purpose was to explore occupational performance problems among 85-year-old women and men in relation to demographic data, mental health, and health-related quality of life. Participants completed a postal questionnaire including the EuroQoL health-related quality of life measurement. Instruments used during a home visit were the Canadian Occupational Performance Measure, the Mini Mental State Examination, and the Geriatric Depression scale. The sample comprised 380 individuals. Women experienced poorer health and more occupational performance problems than men. Women experienced more occupational performance problems in community management, household management, and quiet leisure compared to men. Impaired cognitive function, lower self-rated health, and higher risk of depression correlated with a larger number of occupational performance problems. Intervention planning should be based on individual perceptions of meaningful occupations and environmental considerations.

Introduction

Sweden has the highest proportion of people aged 80 years or older in the world and this age group is continually growing (Larsson & Thorslund, 2006). Despite the presence of multimorbidity, 85-year-olds exhibit good levels of self-rated health and functional ability (Collerton et al., 2009), live longer, and are healthier than previous cohorts (Crews & Zavotka, 2006). Gender differences exist, in that men have better health (Wister & Wanless, 2007; Collerton et al., 2009) and are less disabled compared to women (Polidoro, Dornbusch, Vestri, DiBona, & Alessandri, 2010). However, health is improving among elderly people who heed information regarding health risks (Larsson & Thorslund, 2006). If provided at an early stage, occupational therapy can play an important role in meeting the needs of elderly people, thus preserving their ability to remain active and participate in society. Identifying occupational performance problems may lead to preventive interventions; one well established tool is the Canadian Occupational Performance Measure (Law et al., 2005).

Occupation is what people do to occupy themselves and involves activities and tasks of everyday life that are given value and meaning by the individuals concerned (Canadian Association of Occupational Therapists, 2002). The Canadian Model of Occupational Performance classifies three main purposes of occupation; self-care, productivity, and leisure. Self-care encompasses activities for looking after the self such as personal care and functional mobility. Productivity in adults/seniors includes voluntary work, grand-parenting, hobbies, housework or employment. Leisure refers to occupations that provide enjoyment, such as socializing, outdoor activities, games, and sports (Canadian Association of Occupational Therapists, 2002). Further development resulted in the CMOP-E, which emphasizes performance and engagement in everyday life through occupation as a means of fostering health and well-being (Townsend & Polatajko, 2007).

Research has shown positive effects of being engaged in occupation such as disease prevention (Law, Steinwender & Leclair, 1998) and good health (Hägglom-Kronlöf & Sonn, 2005; Lampinen, Heikkinen, Kauppinen, & Heikkinen, 2006). Increased participation in activities leads to perceived improvement in life conditions, especially among the elderly who are widowed, have functional impairments or little contact with their families (Silverstein & Parker, 2002). A higher activity level is associated with greater happiness, better functioning, and reduced mortality in a sample aged 67 – 95 years (mean 76 years) (Menec, 2003). Furthermore, a higher level of task performance is related to improved life satisfaction

(Nilsson, Bernspång, Fisher, Gustafson, & Löfgren, 2007). Tollén, Fredriksson, and Kamwendo (2008) found that being active and socializing results in feelings of pleasure and a sense of belonging, while disengagement in activities and social contacts leads to feelings of resignation. Health-related activity limitations are associated with reductions in health-related quality of life variables, including general health, mental health, physical health, and sleep (Dominick, Ahern, Gold, & Deller, 2003). The most common activity-limiting conditions were arthritis, heart problems, and walking difficulties, which were reported by 44% of the participants (Dominick et al., 2003). Satisfaction with daily life is positively influenced by being occupied in the usual way; having close friends, feeling able to manage one's own life, and not living alone (Johannesen, Petersen, & Avlund, 2004). Health and well-being are enhanced when people engage in activities (Townsend & Polatajko, 2007).

It is concluded that activity is important for successful aging (Menec, 2003; Agahi, & Parker, 2008; Townsend & Polatajko, 2007; Bassett, Bourbonnais, & McDowell, 2007) and that physical activity leads to increased strength, endurance, and balance (Purath, Buchholz, & Kark, 2009) as well as less depressive symptoms (Salguero, Martínez-García, Molinero, & Márquez, 2010). Increasing the level of preventive interventions among relatively healthy elderly people is an area of concern for occupational therapists in primary care. More knowledge is needed regarding elderly individuals' perceptions of problems in occupational performance that might hinder participation in meaningful activity. Therefore, the purpose of this study was to explore occupational performance problems among 85-year-old women and men in relation to gender, cognition, mental health, and health-related quality of life. Our research questions concerned whether gender differences related to occupational performance problems existed and, secondly, whether the number of occupational performance problems was associated with cognition, mental health, and health-related quality of life.

Methods

Design

This cross-sectional study is part of the Swedish population study Elderly in Linköping Screening Assessment, ELSA 85, which comprised all people born in 1922 and living in Linköping municipality (n=650 at baseline). The major aim of ELSA 85 was to characterize and define evidence-based knowledge on how best to plan, design and provide health care for

the oldest-old. The study focused on physical, cognitive and environmental factors in 85-year-old individuals and their ability to perform meaningful activities.

Procedures adhered to the revised Helsinki Declaration (2000) and the study was approved by the Research Ethics Committee of Linköping University, Sweden (141-06). Written informed consent was obtained from all participants, who were told that participation was voluntary and assured of confidentiality.

Data collection

A postal questionnaire was distributed encompassing questions on socio-demographic data, social network, use of assistive technology, and community assistance. One item concerned whether the participant was still driving a car (yes/no). The postal questionnaire also included the EQ-5D, a generic instrument that assesses health-related quality of life in terms of mobility, self-care, usual activities, pain/discomfort, and anxiety/depression (The EuroQol Group, 1990; Rabin & de Charro, 2001). The response alternatives are; no problem, moderate problems and extreme problems. In addition, the EQ-5D also contains a visual analogue scale that records the individual's self-rated health, ranging from 0 (worst imaginable health status) to 100 (best imaginable health status). The scores on the five EQ-5D items were converted into a single summary index value generated by means of the time-trade off method (Rabin & de Charro, 2001; Dolan, 1997). The EQ-5D index value ranges from -1 to +1, where +1 represents perfect health, 0 a state equivalent to death, and -1 worse than death (Dolan, 1997). The EQ-5D has been used in different diagnosis groups but also in a general population in Sweden (Brooks, Jendteg, Lindgren, Persson, & Björk, 1991).

An occupational therapist performed an interview during a home visit 1-2 weeks after completion of the postal questionnaire. Ability to perform personal activities of daily living (P-ADL) was assessed by four items developed for this purpose; ability to bath/take a shower, to dress and undress, toileting, and eating. The response alternatives were: independent, need some help, and need much help. The Instrumental Activity Measure (IAM) (Andrén, Daving, & Grimby, 1997) assesses dependence and perceived difficulty in instrumental activities of daily living (I-ADL) by means of 8 items (locomotion outdoors, preparing a simple meal, cooking, public transportation, small-scale shopping, large-scale shopping, cleaning, washing) with scores ranging from 1-4 (impossible, major problems, some problems, no problems). The IAM has shown good inter-rater agreement in stroke patients (Daving, Andrén, & Grimby, 2000). Although the instrument has been tested as a self administered postal ADL

questionnaire, interviews may be necessary to complement the results for some individuals (Daving, Claesson, & Sunnergren, 2009). In this study, P-ADL and I-ADL data were only used to describe the participants' capacity.

The Canadian Occupational Performance Measure (COPM), a client-centered outcome measure where clients evaluate their occupational performance and satisfaction with performance in the areas of self-care, productivity, and leisure (Law et al., 2005), was used to collect data on the participants' occupational performance problems. A semi-structured interview was conducted in which the client identified occupational performance problems. The COPM is designed to evaluate change in client perceptions of performance and satisfaction with performance in identified activities. The measure has its theoretical foundation in the Canadian Model of Occupational Performance with focus on client-centered praxis and occupational performance (Canadian Association of Occupational Therapists, 2002). The COPM has been tested in several studies with good results for psychometric properties in terms of reliability (Cup, Scholte op Reimer, Thijssen, & van Kuyk-Minis, 2003), validity (Chen, Rodger, & Polatajko, 2002), clinical utility (Chen, Rodger, & Polatajko, 2002; Wressle, Marcusson, & Henriksson, 2002), and responsiveness (Wressle, Samuelsson, & Henriksson, 1999). In the present study, the interview was conducted in order to identify the participants' perceived occupational performance problems. The COPM scoring procedures were not used, as follow-up scores were not obtained. The problems were categorized using the COPM manual structure with performance areas and sub-areas. Reasons for using the COPM in this study were the overall focus on occupational performance including the individual's identification of meaningful occupations, the semi-structured interview format, which was deemed sufficient during a home-visit, and finally, the flexibility of the instrument.

Cognitive function was assessed by the Mini Mental State Examination (MMSE), involving assessment of orientation to time and place, attention, memory, language, and visual construction with a maximum of 30 points, higher scores indicating better cognition (Folstein, Folstein, & McHugh, 1975). A recently suggested cut off point for normal cognition is ≥ 27 (Folstein, Folstein, McHugh, & Fanjiang, 2001). The reliability and construct validity of the MMSE are deemed satisfactory (Tombaugh, & McIntyre, 1992).

Risk of depression was assessed by the Geriatric Depression Scale (GDS-20), containing 20 items with the response alternatives yes and no, with higher scores indicating greater risk

of depression (Yesavage et al., 1983). The instrument is considered suitable for detecting elderly persons at risk of depression (Gottfries, Noltorp, & Nørgaard, 1997).

Subjects

All individuals born in 1922 and living in Linköping municipality, Sweden (n=650), received the postal questionnaire and information about the study including the fact that participation was voluntary. Written informed consent was obtained from 496 participants, who also completed the postal questionnaire. Of these, 380 continued participation in the home visit phase, yielding a response rate of 60% of those still alive. Non-participants were 90 individuals who declined participation in the postal questionnaire phase, 12 who had died and 52 who failed to respond to the invitation after a reminder. At the time of the home visit phase, another 107 individuals declined further participation and 9 had died. Men were more willing to participate in the home visit phase compared to women (χ^2 test, $p=0.002$) but participation in the postal questionnaire phase was the same for both genders.

Statistics

Statistical non-parametric analysis was performed using the PASW 18.0 statistical package. The results from the EQ-5D items were dichotomized into two categories; Being independent/having no problems, no pain/discomfort, no anxiety/depression and Being in need of help/having problems, pain, worries. The P-ADL items were dichotomized into two categories: Being independent and Being in need of help. The IAM items were dichotomized into two categories: Having problems and Having no problems. Regarding differences between genders, the χ^2 test or Fisher's Exact Test (when expected frequencies were no greater than 5) was employed for categorical data (participant characteristics) and for comparing the number of problems between women and men. The Mann-Whitney U-test was used for ordinal scales (MMSE, GDS-20 and EQ-5D items, respectively) as well as for the EQ-5D index value and VAS due to data not being normally distributed. A probability value of less than 0.05 was considered statistically significant. Spearman's rank-order correlation was employed for analysis of associations. Participants were divided into two groups regarding MMSE scores (0-26 or 27-30 points) for additional correlation analyses.

Results

Participant characteristics

The majority of participants (n=380) were women (60%). Compared to men, a larger proportion of women were living alone, more often used the transportation service, personal alarms and mobility assistive technology, were at higher risk of depression, and had lower health-related quality of life (Table 1). Men drove a car to a greater extent than women, 64% versus 9% (p<0.000).

Results from the five EQ-5D items indicated that women had more mobility problems, felt more pain/discomfort (p<0.000), and perceived more anxiety/depression (p=0.001) compared to men. Regarding the ability to manage self-care and usual activities, we found no difference between genders. In I-ADL, women reported more problems using public transportation, shopping, and cleaning (Table 2) compared to men.

Table 1: Characteristics of participants in relation to gender.

	Women n=224 n (%)	Men n=156 n (%)	<i>p</i>
<i>Housing</i>			0.239*
Ordinary housing	202 (90)	146 (94)	
Community housing	22 (10)	10 (6)	
<i>Social network</i>			
Living alone	161 (72)	58 (37)	0.000*
Relatives living nearby	186 (83)	129 (83)	0.961*
Friends living nearby	200 (92)	138 (90)	0.584*
Contact with neighbors	64 (29)	55 (36)	0.389*
<i>Assistance</i>			
Community assistance, daily	29 (13)	43 (19)	0.373*
Transportation service	105 (47)	32 (21)	0.000*
Personal alarm	105 (47)	35 (23)	0.000*
Mobility assistive technology	139 (62)	50 (32)	0.000*
MMSE, mean (SD)	26.9 (3.7)	27.1 (2.2)	0.735 [†]
GDS-20, mean (SD)	3.5 (2.6)	2.5 (2.2)	0.000 [†]
EQ-5D index value, mean (SD)	0.69 (0.24)	0.76 (0.26)	0.000 [†]
EQ-5D VAS, mean (SD)	65.9 (18.7)	69.8 (18.9)	0.035 [†]

NOTES:

MMSE = Mini Mental State Examination

GDS-20 = Geriatric Depression Scale

* χ^2 test

[†] Mann-Whitney U-test

Table 2: Dichotomized results from EQ-5D items and IAM in relation to gender.

	Women n=224 n (%)	Men n=156 n (%)	<i>p</i>
<i>EQ-5D</i>			
Mobility problems	124 (55)	57 (35)	0.000
Need help with self-care	27 (12)	20 (13)	0.823
Need help with usual activities	59 (23)	32 (21)	0.190
Pain/discomfort	165 (74)	87 (56)	0.000
Anxiety/depression	94 (42)	40 (26)	0.001
<i>IAM</i>			
Problems with locomotion outdoors	109 (49)	61 (39)	0.065
Problems with simple meals	45 (20)	21 (13)	0.093
Problems cooking	66 (29)	45 (29)	0.896
Problems using public transportation	110 (49)	39 (25)	0.000
Problems with small-scale shopping	80 (36)	38 (24)	0.019
Problems with large-scale shopping	115 (51)	47 (30)	0.000
Problems with cleaning	136 (61)	73 (47)	0.007
Problems with washing	85 (38)	62 (40)	0.723

NOTES:

IAM = Instrumental Activity Measure

EQ-5D items: have problems, need help, pain/discomfort, feelings of anxiety/depression.

IAM items: have problems.

 χ^2 test

Occupational performance problems

Participants reported from 0 to 11 occupational performance problems with a median of three; women 0-16 problems (median 2) and men 0-9 problems (median 2). A larger proportion of women than men perceived occupational performance problems in all sub-areas. Gender differences regarding the number of perceived problems were found in the sub-areas of community management, household management, and quiet leisure with more problems reported by women (Table 3). Community management encompasses occupations such as transportation, shopping, and taking care of finances.

Table 4 presents the most frequently identified occupational performance problems according to gender. The same three problems were the most common among both genders, but not in identical order. For women, cleaning was the most frequently reported occupational performance problem, for men travelling. The second most frequently reported problem was walking outdoors for women and cleaning for men. In third place women reported travelling and men walking outdoors, which refers to walking long distances, walking fast, walking uphill, and walking in the dark. Outdoor life encompasses walking in the woods, hunting, fishing, skiing, playing golf, and other sports activities.

Associations with cognition, mental health, and health-related quality of life

Table 5 presents the results of the correlation analyses. Impaired cognitive function, lower self-rated health, and higher risk of depression correlated with a larger number of occupational performance problems. In cases with an MMSE score of 26 and below (n=108), the correlation between GDS-20 and total number of occupational performance problems was statistically significant (Spearman $r = 0.655$, $p < 0.001$). In cases with an MMSE score of 27 and above, the correlation was also significant, although slightly less pronounced (Spearman $r = 0.481$, $p < 0.001$).

Table 3: Identified occupational performance problems in relation to gender.

	Women n=224		Men n=156		Women vs men*
	Number of women (%)	Number of problems n	Number of men (%)	Number of problems n	P
<i>Self-care</i>					
Personal care	47 (21)	74	25 (16)	37	0.226
Mobility	92 (41)	118	50 (32)	61	0.101
Community management	77 (34)	98	25 (16)	32	0.001
<i>Productivity</i>					
Paid/unpaid work	3 (1)	3	2 (2)	3	0.395
Household management	146 (66)	262	49 (31)	75	0.000
School/play	-	-	-	-	-
<i>Leisure</i>					
Quiet recreation	68 (31)	97	23 (15)	27	0.005
Active recreation	106 (48)	133	71 (46)	96	0.423
Socialization	49 (22)	54	29 (19)	34	0.522

NOTES:

* Comparisons between women and men concern the number of problems in performance sub-areas categorized in accordance with the Canadian Occupational Performance Measure manual.

χ^2 test

Table 4: Most frequently identified occupational performance problems in relation to gender.

	Women n=224		Men n=156	
		%		%
<i>Self-care</i>				
Personal care	Dressing/undressing	10	Dressing/undressing	12
	Showering/bathing	17	Showering/bathing	8
Mobility	Walking outdoors	38	Walking outdoors	20
	Stairs	8	Stairs	7
Community management	Shopping	27	Shopping	9
	Managing finances	5	Managing finances	4
	Travelling by bus	5		
<i>Productivity</i>				
Household management	Cleaning	44	Cleaning	21
	Laundry	18	Laundry	8
	Cooking	13	Cooking	8
	Cleaning windows	10		
	Climbing, reaching	7		
<i>Leisure</i>				
Quiet recreation	Needlework	18	Reading	10
	Reading	12		
Active recreation	Travelling	32	Travelling	27
	Gardening	8	Gardening	6
			Outdoor life	18
Socialization	Visiting friends	9	Visiting friends	4
	Social activities	6	Social activities	4

Table 5: Correlations between the number of occupational performance problems and MMSE total score, GDS-20 total score, EQ-5D index value, and EQ-5D VAS.

	MMSE	GDS-20	EQ-5D index value	EQ-5D VAS
<i>Problem areas</i>				
Self-care	-0.223***	0.447***	-0.488***	-0.386***
Productivity	-0.100	0.330***	-0.355***	-0.295***
Leisure	-0.139**	0.392***	-0.304***	-0.311***
Total number of problems	-0.211***	0.548***	-0.527***	-0.461***

NOTES:

MMSE: possible scores 0-30, higher scores represent better cognition

GDS-20: possible scores 0-20, higher scores represent higher risk of depression

EQ-5D index value: possible values -1.00 – 1.00, higher values represent better functioning

EQ-5D VAS: possible values 0-100, higher scores represent better self-reported health.

Spearman's rank-order correlation

** $P < 0.01$

*** $P < 0.001$

Discussion

The aim of this study was to gain deeper knowledge of elderly individuals' perceived problems in daily occupations. The main findings are that women experienced poorer health and more occupational performance problems compared to men and that impaired cognitive function, lower self-rated health, and higher risk of depression correlated with a larger number of occupational performance problems. In general, elderly men are reported to have better health than women (Wister, & Wanless, 2007; Collerton et al., 2009).

Mobility-related problems seem to be gender specific; significantly less men compared to women used mobility assistive technology or transportation assistance and more men had daily exercise. Transportation, shopping, and cleaning difficulties were more common among women, while men identified more outdoor life activities as problematic. Shopping problems can be related to transportation problems, both of which were more common among women than men, who were still driving a car to a greater extent. Environmental barriers can cause

occupational performance problems (Hägglom-Kronlöf, & Sonn, 2005), while functional limitations and/or cognitive deficits contribute to lower frequency of activity, poorer experienced health, and more problems in the pedestrian environment (Hovbrandt, Ståhl, Iwarsson, Horstmann & Carlsson, 2007). Environmental considerations and interventions may be necessary, as occupational performance is related to the environment in which the individual lives and the occupations that he/she performs (Canadian Association of Occupational Therapists, 2002).

The mean MMSE scores were relatively high for both genders. Thus, the cognitive scores cannot explain why women had a larger number of occupational performance problems. Problems related to the household were more common among women, probably due to the fact that, in this generation of elderly people, men worked outside the home while women had more responsibility for taking care of it. Women might therefore place greater demands on themselves regarding cleaning and taking care of the home than men.

More women in our study were living alone due to being widowed; therefore loneliness and perhaps economic factors may explain their reports of a greater number of problems with occupational performance. Men of this generation often have wives younger than themselves and traditionally more support from them. Women also reported a higher risk of depression, which might be associated with living alone. Both genders identified problems travelling; transportation might be part of this problem. Other factors could be loss of energy, no one to travel with, or lack of initiative. Tiredness in daily activities has been suggested to as a predictor of frailty among older adults (Schultz-Larsen, & Avlund, 2007). This is an area of concern for occupational therapy, the aim of which is to facilitate occupational performance and motivate the individual to actively participate in society.

The COPM is considered useful for detecting problems in occupational performance, and its strength is the client-centered approach with focus on occupations that are meaningful for the individual. This patient-reported outcome measure reveals change in occupational performance over time. As this was a cross-sectional study, we were unable to use performance and satisfaction with performance scores. In clinical practice, measurements before and after interventions are very helpful for evaluating the outcome. Nevertheless, the greatest advantage of the COPM is that the individual identifies his or her problems in daily occupations, an approach not possible in any other measure.

This study's cross-sectional design makes it impossible to identify determining factors regarding associations between self-rated health, risk of depression, and the number of

occupational performance problems. Each individual must be seen in his/her environment in order to facilitate occupational performance and participation in society.

Limitations of this study are that the P-ADL items were not tested regarding psychometric properties and that the IAM is not sufficiently tested regarding psychometric properties. These instruments were not used for obtaining answers to the research questions but to describe the participants' level of activity capacity or restrictions. For the former aim, the COPM, the EQ-5D, the MMSE, and the GDS-20 were employed, all of which have been widely tested regarding psychometric properties. Men were more likely to participate in the home visit phase, a fact that could have influenced the results.

An early indicator of the risk of functional decline is persistent tiredness in daily activities among elderly people. The inclusion of an early measure of disability in preventive work has been recommended (Avlund, Pedersen, & Schroll, 2003). Strategies for preventing health-related activity limitations are needed (Dominick et al., 2003). Properly validated assessment instruments, intervention planning based on the individual's perception of meaningful occupations, and environmental considerations are crucial for success. This area needs to be addressed by occupational therapists.

Conclusions

Women experienced poorer health and more occupational performance problems compared to men. Impaired cognitive function, lower self-rated health, and higher risk of depression correlated with a larger number of occupational performance problems. Occupational therapists need to address intervention planning based on the individual's perception of meaningful occupations and environmental considerations. Further research on how to identify elderly persons at risk of developing occupational performance problems is needed.

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