

## **Aging in Place**

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### **INTRODUCTION**

In Europe people tend to live longer as well as in other countries in the world. In Japan for example there are more the 25% of the population who are over the age of 65. Soon Italy will go the same way and maybe also soon Slovenia? As a consequence there will be older adults with disabilities living at home.

Aging in place has for many years been a political goal in Sweden. This means that all older adults should be supported to stay in their old home as long as they like. Internationally aging in place is what most older adults look forward to (Williams 2002; Tille 1999; Ivarsson 1996). Also in Slovenia most older adults do live at home instead of institutions, nursing homes or hospitals (Lebar and Tomsic 2006). Community living older adults who experience limitations in their abilities to care for themselves are most at risk to not be able to age at home. Still, a majority of older adults want to remain in the home even if safety and independence are threatened as in the case of disability (Ivarsson 1996). There are a number of issues to solve; for example issues relating to accessibility in the physical environment and also to the need of new services and new products to support the older adult. Overall, the challenge for the welfare state is to enable housing and societal conditions where the older adult will feel safe and would want to be ageing in.

In the present we assume that possibilities for aging at home can consist of new services, home rehabilitation programs or new technology. Implicit is also support to people who live with an older adult with a disability, for example, a spouse, a husband or a child. The good news is that occupational therapy (OT) can play a very important role in supporting older adults aging in place. OT's have something to offer to persons who would like to remain in their home even with activity limitations and participation restrictions. Occupational therapy often rests on the idea that continuity can be supported by environmental factors, the physical and the social and attitudinal environment. Becker (1993) studied major life events, i.e., the disruption to the life-course of persons who had a stroke. Becker described how older adults attempt to preserve and maintain existing internal and external strategies of continuity by applying strategies to familiar arenas of life. The study also demonstrated how older adults re-established a sense of continuity in their everyday life after stroke, and that the first marker of continuity was the ability to return home (Becker 1993).

### **International classification of function ICF**

The ICF (International Classification of Functioning, Disability and Health, WHO 2001) is often applied as a model for classification of consequences of illness and disability. The ICF

model represents an interesting attempt to make a synthesis of what is useful in the medical and the social models of disability (Borell et.al 2006). The ICF identifies three dimensions of human functioning: 1). Body function or structure, physiological and psychological functions of body systems and anatomical parts of the body, organs, limbs and their components. 2). Activity, the execution of a task or action by an individual.3). Participation, involvement in a life situation. The ICF methodology provides well defined concepts and a useful terminology for research in this interdisciplinary international research program. Of specific interest for occupational therapy are the dimensions of activity and participation. Occupational therapy can contribute with interventions and service to enable persons to be active, to fill their days with meaningful activities, and also be engaged and participate in activities in the community.

### **Participation, independence and the environment**

Within medicine there is a tradition to operationally and measure dependence and independence in terms of the ability to perform a range of daily activities. Hence, in occupational therapy research at present we do not view dependency in daily life as an individual attribute. Instead, we view dependence as a product of the environment including social relations and habits in a specific culture (Vikstöm, Josephsson, Borell 2005, Sacco-Petersen & Borell 2005, Borell & Asaba et.al, 2006). Performance of ADL is not just seen as a representation of simple actions. Performance of ADL is in our research seen as complex behavior of contributions from several actors, within an environmental context. Spouses and other family members, friends and neighbors, home helpers and professionals in health care influence and impact on older persons' doing in everyday tasks. The environment can become a facilitator for the individual with activity limitations or the opposite impede ( Lawton 1986).

Recently we found in a study of women with chronic pain (Borell et al. 2006) how the women found providing help and support to others was an important part of being a participant. To participate meant also to someone that can provide, and give to others.

### **Research methodology in occupational therapy**

The research in occupational therapy has since initiation strived to develop expertise in a wide range of methods. A variety of methods, ranging from functional assessments and randomized controlled trials to in-depth qualitative explorations with interviews and participant observations based on traditions such as phenomenology (Husserl,1970/1900-01; Karlsson, 1993, ) or grounded theory (Glaser & Strauss, 1963).

The research methodology we use in occupational therapy research has certain characteristics: Data are often collected in place in *the natural contexts* where study participants live their daily lives, e.g. in the home and its surroundings and other places in society that are relevant to them. The older adults' perspectives and needs in relation to the environment are our primary focus, rather than the properties of the environment in itself. More specifically, the interaction between the older people and the environments where they live is a key issue.

Exploring conditions for living life in interaction with certain contexts with complex disability and unpredictable decline is a challenge, and traditional research methods have not been well suited to capture such complex issues. Occupational therapy researchers are also involved in developing new research methodology. For example, assessment instruments are evaluated, and new measures are developed (Peterson & Kottorp, in press) and qualitative approaches for accessing the experiences of people with cognitive deficits, as in dementia, are developed (Nygård, 2006).

### **Occupational therapy for persons who suffer from a stroke**

In occupational therapy we often address disabilities following from dementia, stroke, or after a hip-fracture. Still, the specific focus in occupational therapy is not on the medical diagnoses but on *challenges included in aging in place* when living with a disability following stroke, dementia or a hip fracture.

The annual incidence of stroke in Sweden, like in most western countries is about 6 percent of the total amount of inpatient hospital care is used for care of persons with stroke. A recent Swedish study of the life situation two years after stroke (Socialstyrelsen 2004) demonstrated that the accessibility of rehabilitation services had decreased and that there was a need of better coordination of the available health care services and of the parties involved. Thirty-seven percent of the persons with stroke perceived unmet rehabilitation needs, and women perceived significantly more unmet needs than men. The use of informal care was high, which is in concordance with international studies (Palmer & Glass 2003). The spouse and children, grandchildren are taking a huge responsibility for provision of care of the older adults.

In fact, more than half of the close relatives assisted the person with stroke in ADL and their life-situation was characterized by experience of constraint and needs of respite in everyday life (Socialstyrelsen 2004). This indicates that there is a need for services from occupational therapists. Since OT can analyse the home situation, and provide guidance and assistive technology for daily living. Clearly, a way to decrease caregiver-burden and enhance aging in place might be to focus rehabilitation interventions on improving performance of activities of daily living activities (ADL) at home. Rehabilitation at home is today a more and more frequently used form of rehabilitation after life-course disruption caused by diseases like stroke.

Our recent studies (Tham, Borell & Gustavsson, 2000; Erikson, Karlsson, Borell & Tham, in press; Wohlin-Wottrich, von Koch & Tham, submitted) explored how therapists and clients experience rehabilitation after stroke. These studies indicate that familiar and meaningful contexts like the home enable performance of daily activities and social participation. The study from the therapists' perspective suggested that rehabilitation at home could contribute to the preservation and maintenance of the patient's continuity in daily life. The possibility to link to former activities, habits and roles in the training at home were seen as facilitating the rehabilitation process.

### **Occupational therapy and persons who suffer from a dementia disease**

Dementing diseases such as Alzheimer's disease, AD, are common diseases of old age, with about 3 millions sufferers in the European Union (Winblad, Brodaty et al 2001).

Commonly, people with dementia remain living at home as long as possible in spite of increasing dependency on support, and the length of staying at home seem to be prolonged by the pharmacological development (Wimo et al 1999). Still, there is no cure for dementia but medical drug treatment that can contribute to slow down the speed of the cognitive decline. For people who suffer from dementia and their families we need to develop new services in occupational therapy. Home based treatment program should include cognitive support to enable people to keep their interest, habits and roles. Cognitive support could come from new technology, for example technology based on IT.

We have also found in research the need to provide different types of care and support for older people with a dementia disease. For example, there is a need for daycare and short time staying in a nursing home, so the spouse of family gets a chance to rest for some time. But also careers like good friends, who visit and continue to be social even after the onset of dementia.

Assistive technology, such as digital calendars, adaptable watches, locators for people with cognitive deficits has rapidly developed although their usability has been little researched. Recently, technology for people with dementia has been successfully designed in an EU-project ([www.enableproject.org](http://www.enableproject.org)), and examples of clinical cases have been published (Nygård & Johansson 2001). These studies have shown that aspects such as the user's motivation, the adaptability of the technology and the support from the environment are crucial for successful use in people with dementia. We have also found in research that technology needs to be adaptable to the individual's needs, and introduced early after the onset of cognitive decline (Nygård, Starkhammar & Lilja, accepted; Starkhammar, 2006). In order to be useful, technology needs to be accepted and incorporated in the user's everyday life, and this process involves learning and adaptation.

We know from our previous studies that people with cognitive deficit or dementia are likely to have difficulties to manage everyday technology at home and in society, e.g., washing machines, digital watches, automatic telephone services, personal computers, hearing aids. As this is an extremely under-researched area, we set out to explore these issues.

So far, we have found that everyday technology can be ordered in a hierarchy, from less challenging to use, to more challenging to use (Rosenberg, Kottorp & Nygård, manuscript). We have also identified specific types of problems that people with mild dementia may have when they handle technology (Nygård & Starkhammar, in press), and we have developed an assessment tool (Nygård, unpublished material). Interestingly, our first studies indicate that the use of everyday technology may be sensitive enough to detect early changes in function when cognitive problems begin to appear (Rosenberg, Kottorp & Nygård, manuscript). Hence, further research is needed to explore the conditions and possibilities for using or learning to use technology in people with cognitive deficits or dementia.

It is most likely that the number of older adults, with cognitive impairments as in the case of dementia will be aging at home, living as singles', especially the oldest old. The ongoing and planned research includes research on how IT based cognitive support for independence at home can be developed. Ongoing research (Borell, Lagerkrans & Larsson) intend to learn about the effectiveness and overall usability of IT based systems, and for compensating for the loss of cognitive ability in daily activities at home. People who could benefit from this are persons who suffer from for example, stroke or early dementia.

In a next step we are interested in understanding more about what the consequences are for caregivers, family and home-helpers when IT technology is implemented in the homes of older persons who are in need of cognitive support. It is possible to assume that there will be changes in the provision of care when IT based assistance are provided. Another project will investigate if the application of IT based technology at home, can be used as an “external coach” and actually impact and reconstruct daily habits, for people in need of external reminders ?

### **Occupational therapy after a hip fracture**

Potential barriers related to accessibility, safety, and usability of home environments for older people with disabilities is well known (Pynoos, 1987 and Watzke and Kemp, 1992). As older people age in place, these barriers could present threats to independence and increase caregiver burden. Previous research suggests that modifying the home can enhance functional independence and efficiency for older adults, and reduce the burden of care for caregivers as well as affect such factors as social integration and participation in roles at home and in the community (Connell, Sanford, Long, Archea, & Turner, 1993; Gitlin et al, 2001; Iwarsson, 1997; Lilja, 2000; Verbrugge & Jette, 1994).

Hip fracture is a common consequence after a fall and falls are very frequent among older adults everywhere. Older adults who have experienced a hip-fracture labeled the experience as the point in time, “when they got old” (Luborsky & Borell 2003). A hip-fracture is most often a result from an accidental fall at home (Tinetti 2001). Modifications and adaptations of the environments are often made to increase safety at home. For this reason occupational therapists are needed, to suggest modification in old and new buildings. When OTs does assessments of the home environment the perspective often builds of the idea to prevent fall at home!

A great deal is known about the situation when old people fall. It is usually at night, when a person wakes up because she/he needs to go to the toilet. And on the way from the bed to the toilet, she could stumble and fall? The fall can take place because of balance problems but also very likely because of barriers in the environment, for example slippery floors and intensive lightings in the wrong place. It is of great importance that occupational therapists provide guidance for making the older persons home safe and secure.

Most requests for home-modifications in are related to personal hygiene, differences in levels, movement indoors and access to the house. Very little is known about the outcomes of home-modifications, since there is practically no research in the field. Also we need to pay attention to the outdoor environment. Constructions companies and architects would often need to consult an OT just to make sure that they include people with mobility limitations when they design and build new streets, or new houses.

### **SUMMARY**

In summary occupational therapy interventions have a lot to offer older adults who would want to remain in their home, to age in place, with some kind of disability. Occupational therapy can enable people to participate in society by meeting individual needs of support and modifications. Individuals who suffer from a stroke can benefit from home

rehabilitation programs that will support daily activities. Spouses can get advice and support in the home environment and guidance on how to provide support to the spouse.

Assistive technology is also something that brings new hope to people who would like to remain in the home environment. Person who suffers from dementia can be introduced to IT based cognitive support system, and hopefully the system will then support the persons' doing, habits, roles and interests. The older adult who suffers from a hip fracture can through a home visit by an occupational therapist become aware of the many home hazards that exists, and also get advice on how to make the home into a safe place. To end this presentation it is my strong belief that the future includes many possibilities for occupational therapy to make a difference in the life for the older adults.

## REFERENCES (selected)

1. American Psychiatric Association (2001). Diagnostic and statistical manual of mental disorders (Rev. 5th ed.) Washington DC: Author.
2. Borell, L, Asaba, E, Rosenberg, L, Schultz ML, Townsend, E. (2006). Exploring experiences of participation among individuals with chronic pain. *Scandinavian Journal of occupational Therapy*. 13. 76-85.
3. Gilliard J, Hagen I. (2004). ENABLE. Cross-national analysis report. Available at [www.enableproject.org](http://www.enableproject.org).
4. Hubbard, G., Downs, M. G. & Tester, S. (2003). Including older people with dementia in research: challenges and strategies. *Aging and Mental Health*, 7, 351-362.
5. Iwarsson S, Isacson A. (1996). Housing standards, environmental barriers in the home and subjective general apprehension of housing situation among the rural elderly. *Scandinavian Journal of Occupational Therapy* ;3(2):52-61.
6. Langhorne, P. et al (2005). Early supported discharge services for stroke patients: a meta analysis of individual patients' data. *Lancet*, 365: 501-506
7. Nationell handlingsplan för äldreomsorgen. Regeringens propositionen 2005/06:115.
8. Nygård, L. & Johansson, M. (2001). The experience and management of temporality in five cases of dementia. *Scandinavian Journal of Occupational Therapy*, 8, 85-95.
9. *Neurologica Scandinavia*,107, 42-46, (Suppl. 179).
10. Nygård, L. & Starkhammar, S. (2003). Telephone use among non-institutionalised persons with dementia living alone: mapping out difficulties and management strategies. *Scandinavian Journal of Caring Sciences*, 17, 239-249.
11. Nygård L, Starkhammar S. (In press). The use of everyday technology by people with dementia living alone. *Aging and Mental Health*.
12. Sacco-Peterson M, Borell L. Struggles for autonomy in self-care; the impact of the physical and socio-cultural environment in a long-term care setting. *Scand J Caring Sci*. 2004;18:376-86.
13. Socialstyrelsen. Nationella riktlinjer för strokesjukvård 2005, Medicinskt och hälsoekonomiskt faktadokument.

14. Tham, K., Borell, L., & Gustavsson, A. The discovery of disability: A phenomenological study of unilateral neglect. (2000). *The American Journal of Occupational Therapy*, 4, 398-406.
15. Tham, K., & Kielhofner, G. (2003). Impact of the social environment on occupational experience and performance among persons with unilateral neglect. *American Journal of Occupational Therapy*, 57, 403-412.
16. Vikstrom, S, Josephsson, S, Borell, L, Stigsdotter, A. (2005). Caregivers self-initiated support towards their partners with dementia when performing an everyday occupation at Occupation Participation and Health. 2005.
17. Östlund B. (1995). *Gammal är äldst – en studie av teknik i äldre människors liv*. Tema: Teknik och social förändring, Linköpings universitet,