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Independence of Dutch Elderly Within Their Residences



By

Paul Jutten

Wageningen University

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Author: Paul Jutten

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Supervisors: Dr. H. Kok
Dr. J. Van Ophem

Examiner a: Dr. H. Kok

Examiner b: Dr. J. Van Ophem



WAGENINGEN UNIVERSITY
WAGENINGEN UR

Abstract

This study identifies opportunities in the design and lay-out of residencies in order to increase the independence of elderly people. Data collection methods applied were in-depth interviews, observations, and literature review. Twelve elderly were interviewed and their residencies observed regarding experienced disruptions in their activities of daily living. Two groups of three household caregivers and three elderly care experts were interviewed to gain further understanding of opportunities and developments with respect to elderly care. A large variety of disruptions were identified in the residencies, predominantly in the bathroom area, followed by the living room, hallway/entrance, and the kitchen. Only a limited number of disruptions were identified in the bedroom. Key terms regarding the identified disruptions are "Walkability", "Reachability", "Manoeuvrability", and "Accessibility". The identified disruptions together with adaptive means from literature resulted in a checklist with opportunities to take away the disruptions. This study revealed that there are opportunities in the residences of elderly people to enable and improve their independence. The current decreasing availability of home care service provision, and care by relatives not always available, makes adapting the residential area of elderly people a necessity. In order to determine suitable adaptations for the residential area the elderly should, together with relatives and a specialist, assess the home situation.

Key words: Independence, elderly, activities of daily living, adaptive means, disruptions, residences.

Executive summary

Recent developments force elderly in the Netherlands to live at home as long as possible and make elderly more dependent on themselves. An important condition in independent living is the residence, which should support, as opposed to obstruct, the elderly in their ability to perform daily activities. This study's objective is *"To identify disruptions in the design and lay-out of residential areas of elderly people and provide recommendations for adaptations in order to increase their independence"*.

The research strategy is a combination of literature driven and practice based qualitative research. A preliminary literature study provided a method for conducting in-depth interviews with elderly and caregivers, and carrying out observations within the residential areas of elderly to come up with disruptions. After conducting the in-depth interviews and observations, experts were interviewed and literature was once again consulted to translate the disruptions into opportunities for the design and lay-out of the residential areas.

The results from interviewing elderly and observing their residences show a large variety of disruptions identified in the residences, predominantly in the bathroom area, followed by the living room, hallway/entrance, and the kitchen. Only a limited number of disruptions were identified in the bedroom. Key terms regarding the identified disruptions are "Walkability", "Reachability", "Manoeuvrability", and "Accessibility". The researcher observed much more disruptions in comparison to the elderly. The elderly did not recognize those additive disruptions due to habituation to the residential area. In addition to the elderly and researcher, the caregiver did also perceive a number of disruptions. Based on the number of disruptions, the bathroom and the living room stand out. The caregivers did not mention design and lay-out related disruptions to the same extent as the researcher and elderly. The caregivers were more oriented towards hygiene and cleanliness related issues.

According to the experts, elderly want to be in control of their own residential area and the daily activities conducted in this area. The elderly need to recognize that over time, their physical abilities deteriorate. The independence of the elderly can be increased when user-friendly means are implemented in the design and lay-out of a residence. Out of literature it appeared that there are multiple adaptive means, technological- and spatial elements, which could be implemented or adapted in a residence for accommodating and support the elderly in carrying out residential activities of daily living. Combining the disruptions identified during empirical research, together with the adaptive means provided by literature study ended up in a checklist. With this checklist the objective of this study is achieved and can be used for answering *"What can be adapted in the residential areas in order to increase the independence of elderly?"*

In conclusion, it appears that there are certainly opportunities in the residences of elderly people to enable and improve independent living. A decreasing availability of home care service provision, and care by relatives not always available makes adjusting the residential area a suitable substitute or even a necessity. After all, an incorrect design and/or lay-out of the residential environment increases the risk of accidents and inconveniences, which undoubtedly leads to even more demand for home care- or other additional healthcare support.

For assessing the residential environment on disruptions, and acquainted adaptations, it is recommended to use the checklist as published in this study. For assessing the residence on disruptions a consultant could be employed, together with a medical specialist to determine the clinical picture of elderly in order to tailor the adaptations to the elderly's needs and abilities. It is important for the elderly to stand benevolent for adaptations to their residence in order to increase and improve their independence. The adaptive means should be regarded as an opportunity to enable independent living instead of a threat to their habituation. It is important to convince the elderly of the added value of adaptive means. To increase the willingness of elderly they should be involved in the decision making process.

Overall, the government is recommended to increase their focus on the residential environment instead of adhering to care by relatives to withstand the growing demand for home care. This study revealed that there are opportunities in the residential areas of elderly people to increase their independence.

Further research should continuously monitor the opportunities of adaptive means. An upcoming change in generation of elderly, with their own vision and abilities to coop with the adaptive means, together with the ongoing development of (sophisticated) adaptive means, will modify demand and supply for adaptations.

Preface

In order to complete an MSc thesis the guidance of supervisor(s) is indisputable of great importance. First of all, I therefore want to show my appreciation towards my supervisor Dr. Herman Kok. I am very grateful for the dedicative and enthusiastic guidance of him during this process. His critical and inspiring support kept me focused, when wondering of towards related topics, on the outcome of this report.

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List of Abbreviations

(CPB)	Central Planning Bureau
(BADL)	Basic Activities of Daily Living
(IADL)	Instrumental Activities of Daily Living
(MADL)	Mobility Activities of Daily Living
(HADL)	Household Activities of Daily Living
(ADL)	Activities of Daily Living
(RADL)	Residential Activities of Daily Living
(GARS)	Groningen Activity Restriction Scale

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1. Introduction

1.1 Background information

An ageing society increases the demand for healthcare and associated funding (Wong *et al.*, 2010). Especially the demand for long-term care increases due to the growing number of elderly (Donders and Maarse, 2012; Wong *et al.*, 2010). To be able to meet this increase in demand a (larger) part of the working population is required. A scenario study of the Central Planning Bureau (CPB) in the Netherlands estimates that healthcare in 2040 is expected to comprise about 25 percent (between 22% and 29%) of the total labor force of the Netherlands (Schippers and Van Rijn, 2013; CPB, 2013). The availability of sufficient workforces in healthcare is expected to be in dispute. This results in impending labor shortages for healthcare (Schippers and Van Rijn, 2013).

The government is not able to invest in large extent in long-term care to withstand the growth in its demand (Donders and Maarse, 2012). Therefore, the government is looking for alternatives to offset the increasing demand. This has resulted in a policy document for reforming long-term care (Ministerie Volksgezondheid, Welzijn en Sport, 2013). In government policy document “Hervorming van de langdurige ondersteuning en zorg” (2013) were the following reforms of long-term care envisaged; Long-term care should be based on what people can do instead of what they cannot do; Examine the (financial) opportunities in the social network and home situation of elderly to organize care close to home prior to requesting care-support from healthcare institutions and /or government; Quality of life must have priority (Ministerie VWS, 2013). The reform of long-term care mainly focusses on extending the time of independent living for people who are in need of care.

To encourage living at home of elderly, the government in the Netherlands cuts back on budget intended for care homes and nursing homes (Rijksoverheid, 2013). This cut back will endanger approximately 800 (of 2000) care- and nursing homes with closure (Kiers, 2013). Reason for this cut back is that the government expects to save costs if elderly continue living at home as long as possible instead of living at a care home or nursing home (Rijksoverheid, 2013). Besides the government it is also preferred by a majority of elderly to live independently as long as possible (Chorus *et al.*, 2011).

1.1.1 Home care service provision

For home care organizations the increasing number of elderly living at home means an increasing demand for home care services. Home care services encompass services which assist and provide care to the care recipients in their residential environment (De Almeida Mello *et al.*, 2012). In addition to an increasing demand, the growing competition, decreasing financial resources and high quality standards, also increases the pressure on home care service providers (Rijksoverheid, 2013; De Argumentenfabriek, 2012). The home care service providers have to provide high quality services against low costs to outperform competition. Due to limited financial resources for home care providers, there are (practically) no funds available for expanding human resources. A lack of financial resources can even lead to cutting back on personnel. So, fewer personnel have to deal with an increasing demand for home care services. As a result, the time available per patient will be reduced. Less time available for execution of services by care givers decreases the quality of service provision (Francis and Netten, 2004). Since quality of life of the elderly is highly dependent on the quality of home care services provided, this may be a problem (Francis and Netten, 2004).

Quality of life is divided into several aspects. One of these aspects that is highly appreciated by elderly is the degree of independence (Puts *et al.*, 2007; Ball *et al.*, 2000; Gabriel and Bowling, 2004). Independence for an elderly can refer to mental aspects like sense of control, self-efficacy, self-respect and capability to join in social activities, or independence could refer to the physical ability to perform tasks by elderly themselves (Conradsson *et al.*, 2013; Gabriel and Bowling, 2004). Self-sustaining in the activities of daily living is important for the elderly. An increasing independence amongst elderly in performing the activities of daily living increases quality of life and decreases the need for home care service provision. An important condition to this independence of elderly concerns their residence, which should support, as opposed to obstruct, the elderly in their behavior to perform daily activities.

1.1.2 Residential activities of daily living

The residence of elderly consists out of several areas in which the activities of daily living are conducted. There are five main areas distinguished in a residence, namely; bathroom, bedroom, living room, kitchen and hallway (Lee *et al.*, 2013; Carter *et al.*, 1997). Within the residential areas various activities are carried out by the elderly. These activities are divided into three categories. The first category is the basic activities of daily living (BADL) which consists out of amongst others the activities eating, dressing and bathing (Hoenig *et al.*, 2003; Mathieson *et al.*, 2002). Second category consists out of instrumental activities of daily living (IADL) (using the telephone, preparing meals, doing laundry, etc.) (Hoenig *et al.*, 2003; Mathieson *et al.*, 2002). The last category consists out of activities concerning the mobility of elderly in daily living (MADL)(Mathieson *et al.*, 2002). Comprising activities like: getting out of bed, transferring from room to room and going to the bathroom/toilet. The basic activities and instrumental activities are mainly conducted in one area of the residence. The mobility activities of daily living are mainly activities of transferring an elderly between two areas in the residence. In Figure 1.1 are the residential areas and activities of daily living visualized.

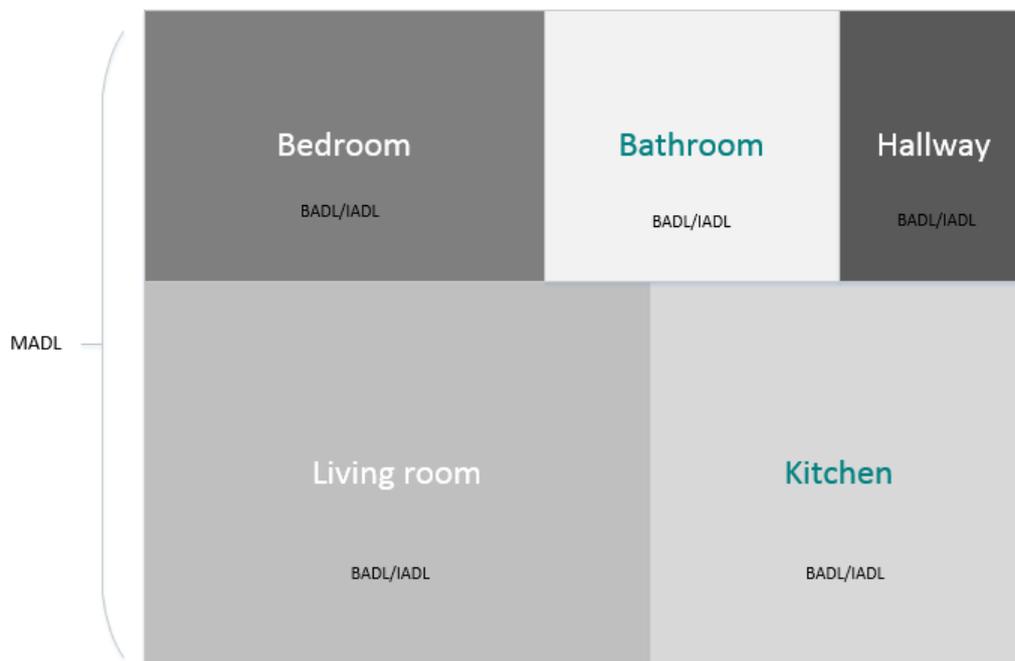


Figure 1.1: Areas in a residence and activities of daily living.

So, the residential activities of daily living are performed in one of the five main residential areas or in case of mobility activities in one or more residential areas.

1.1.3 Independence

Older people consider independence essential for their well-being and quality of life (Schwanen *et al.*, 2012). It could be regarded as a marker for successful ageing (Smith *et al.*, 2007). Independence in performing activities is in several ways interpreted and defined by various authors.

Mann *et al.* (2009) perceive independence as “the ability to take responsibility for one’s own performance and desires” (Mann *et al.*, 2009). Being independent could be with the use of supportive tools or personnel according to Mann *et al.* (2009). Gignac and Cott (1998) emphasize that the degree of independence in performing activities relate to a person’s subjective perception (Gignac and Cott, 1998). For example, an elderly that is receiving help from a family member or supportive tool may perceive this as a deteriorating degree of independence, where another elderly does not interpret this as such. Schwanen *et al.* (2012) describes independence in relation to mobility in later life. According to Schwanen *et al.* (2012) independence is the ability to carry out activities unaided, without dependence and reliance on others, and if necessary with the use of supportive (mobility (car, wheelchair, walking stick)) means (Schwanen *et al.*, 2012).

The personal abilities of an individual enable or disable performing an activity independently. Personal abilities comprise several factors. Out of literature (Humpel *et al.*, 2012; Werner-Wahl *et al.*, 2012; Oswald and Werner-Wahl, 2005; Iwarsson, 1998; Bitner, 1992) three main factors stand out: the cognitive, emotional, and physiological influences on a person’s ability. The cognitive capability of an individual includes an individual’s mental health, like his memory, beliefs about a place or creativity (Bitner, 1992; Oswald and Werner-Wahl, 2005; Iwarsson, 1998). The Emotional ability aspect comprises the mood and state of mind of an individual (Bitner, 1992; Oswald and Werner-Wahl, 2005; Werner-Wahl *et al.*, 2012; Humpel *et al.*, 2002). An individual’s physiological ability contains components that describe the physical ability of an individual to perform an activity. It does not only comprise the ability to perform the activity but also the comfort and easiness in which the activity is carried out (Bitner, 1992; Oswald and Werner-Wahl, 2005).

1.1.4 Environmental elements

The environmental elements of a residence could influence the independence of an elderly in a negative (avoidance) or a positive (approach) way (Bitner, 1992). An important role in performing human activities is dedicated to the physical environment (Sanford and Bruce, 2010). However, the physical environment has to be adapted to the person’s abilities, needs, and desires to be able to positively contribute to an individual’s activity performance (Sanford and Bruce, 2010). A disruption in the physical surrounding of a person may negatively affect the person’s ability to perform everyday activities. Functionality of a person is a congruence of a person’s abilities, and the support of a physical surrounding to perform activities (facilitating), by among others adapting the environment to the impairments of a person (Bitner, 1992).

There are a wide range of environmental elements that could affect the functional behavior of an individual in performing activities in a built environment. Carrying out activities is a confluence of personal abilities and elements that the environment provides (person-environment fit/ user-environment relationship) (Iwarsson *et al.*, 1998; Iwarsson, 2004). In literature the influences of the built environment on performances of an individual is frequently studied in work related literature,

but less in residential activities related literature (Werner-Wahl *et al.*, 2012). The focus of this paragraph is on the environmental elements that may influence performing activities by an individual.

1.1.4.1 Environmental elements of a home

The perceived experience of a home is traditionally divided into three main dimensions, the personal home, the social home, and the physical home (Aplin *et al.*, 2013; Iwarsson, 2004; Sixsmith, 1986).

A personal home describes a dimension in which a home is seen as an extension of one's feelings, desires, and other emotional connections to a home (Oswald and Wahl, 2005; Aplin *et al.*, 2013). The social home is a place to accommodate and encourage relationships between the users of a home like family, friends and neighbors (Aplin *et al.*, 2013; Oswald and Wahl, 2005). The physical home involves the architecture, materials, structure and other physical elements in the living accommodations that enable carrying out activities (Oswald and Wahl, 2005; Sixsmith, 1986).

Of the aforementioned dimensions, at the physical home specific tangible interventions are possible (Gill *et al.*, 2002). In a personal home and social home a high degree of subjective reasoning is at stake (Aplin *et al.*, 2013).

Physical environment of a home

The physical surrounding plays an important role in structuring the activities of daily living in a residence (Sixsmith, 1986). There are a number of authors who have made a subdivision of physical elements of a facility.

A physical home consists out of several components. For this research the six s's model of Brand (1994) is used and adapted by using literature of other authors to come up with the range of physical elements this study wants to investigate.

Brand (1994) distinguishes six layers of a physical environment of a home (Figure 1.2 Adapted from Brand (1994)). The outer layer is the site of a home, which concerns the geographical location of a home. The Structure is the second layer which considers the foundation and load-bearing elements of a home. Third layer, the skin, is the exterior surface of a home. The Services layer has to do with the working guts of a home, like electrical wiring and plumbing. Interior layout of a home is dealt with in the Space Plan layer, which encompasses the walls, floors, ceilings, and doors. The inner layer, Stuff, is about the furniture, kitchen appliances, telephones, lamps, and all other things that could be applied to the living spaces of a home (Brand, 1994; Rodden and Benford, 2003).

The physically frail elderly in general do not want major adjustments to their residence and often have a lack of financial means to make such changes (Gill *et al.*, 2002.)

The inner layers of a residence (Space Plan and Stuff (Rodden and Benford, 2003)) as the direct (tangible) surrounding a user perceives is subject to relatively quick interventions. The time to make a change in Space Plan or Stuff is minutes to hours to days according to Rodden and Benford (2003).

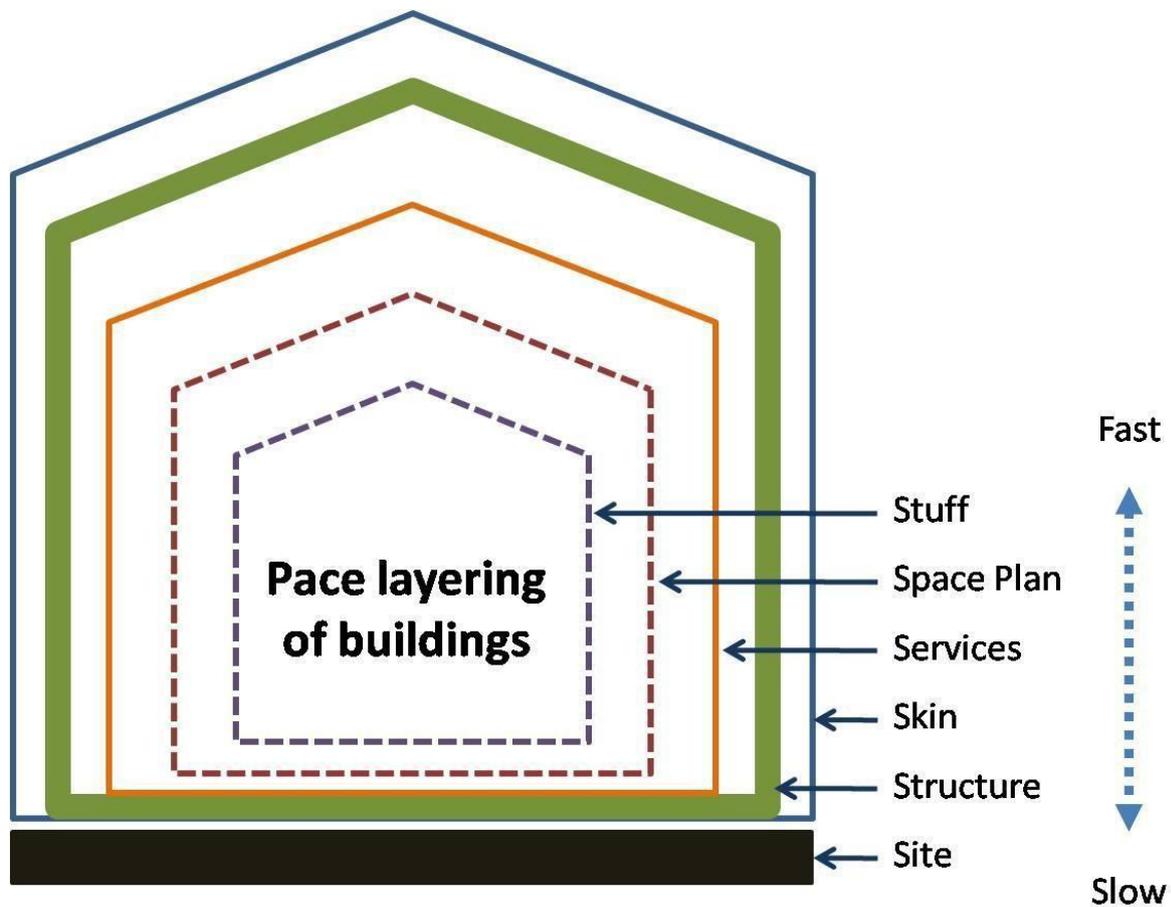


Figure 1.2: Adapted from Brand (1994)

Spatial elements

A further elaboration of the Space Plan and Stuff layers of Brand (1994) reveals that both layers comprise elements that are commonly described as spatial elements (Rapoport, 1982; Mobach, 2009). Spatial elements consist out of fixed feature elements which are architectural elements (ceilings, bearing, structures and floors) in a residence that change rarely and slowly (Mobach, 2009; Rapoport, 1982). The spatial elements also comprises semi-fixed feature elements, which are elements constructed or placed in a residential area but are relatively easy to change like furniture, desks, plants and closets (Rapoport, 1982).

Technological elements

Within a home an important and growing role is ascribed to assistive technology to support and improve the practical utility for executing daily activities (Tinker *et al.*, 1999). It is believed that there are opportunities in the residence of elderly with respect to assistive technology, because the ongoing development of new technologies and elderly are known to stick to habits (and not change their home environment). The elderly are possibly not familiar with the wide range of existing assistive technologies what could mean "a lack of" assistive technology in their residence. However,

technological elements may impose opportunities to increase independence. Tinker *et al.* (1999) defines assistive technology as:

'An umbrella term for any device or system that allows an individual to perform a task which they would otherwise be unable to do or increase the ease and safety which the task can be performed' (Cited from Tinker *et al.*, 1999).

One can think of assistive technology like a chairlift, smart thermostat, front door camera, speaking clocks, automatic lighting, TV (turn of automatically), automatic gas circuit breaker and door- sensors (Lee *et al.*, 2013; Hoenig *et al.*, 2003). This is only a fragment of the wide range of existing assistive technologies that could be applied to a residence.

Ambient conditions

Next to the spatial- and technological elements of a residence, literature frequently refers to the ambient conditions of an indoor environment and its impact on a user (Bitner, 1992; Aplin *et al.*, 2013; Sanford and Bruce, 2010). The ambient conditions concern the intangible elements of a facility including temperature, lighting, sounds, airflow, odors, shade and acoustics (Sanford and Bruce, 2010; Aplin *et al.*, 2013; Bitner, 1992). The ambient conditions concern the five senses of an individual (Bitner, 1992). It is expected that physical comfort is most affected by ambient elements lighting and temperature level (Bitner, 1992). Physical comfort is directly related to independence. However, ambient conditions are intangible and dependent on the design of spatial- and technological elements in a residence. For example, a technological element like air conditioning or a spatial element like a sunshade helps the temperature control of a residence. This goes for this example, there might be examples that does not support this thought, but generally it can be assumed.

1.2 Conceptual research design

1.2.1 Problem analysis

Elderly highly appreciate independence in performing daily activities. Due to aging and health problems the functionality of elderly may not be according to their desire and might disable the elderly in performing daily activities independently. Recent developments will make elderly more dependent on themselves. Government strives for elderly living at home as long as possible. Demand for home care services will increase significantly, and decreases the available time for caregivers to perform home care tasks for elderly.

An important condition in supporting independent living concerns the residence, which should support, as opposed to obstruct, the elderly in their ability to perform daily activities. There for, this study seeks for opportunities for interventions in the residence of elderly to improve the ability of elderly to perform daily activities on their own.

1.2.2 Research objective

In this study the researcher is searching for opportunities in the inner layers (Space Pan and Stuff) of a residence of elderly to increase their independence by relatively quick interventions. Since the spatial elements and technological elements are eligible to this, the focus of this research is on spatial elements and technological elements. The researcher expects that the technological and spatial elements are important influential environmental factors on everyday activity performance, since the built environment and its arrangement could enable or disable an individual (Iwarsson *et al.*, 1998).

The researcher attempts to understand how the elderly experience their residence as supportive feature in performing daily activities. What are the disruptions in their residence to enable performing activities (functional) independently? What opportunities does a residence offer to adapt in order to increase independence of elderly?

So, the goal of this thesis is to discover opportunities in the residence of elderly considering technological and spatial elements that could be implemented or adapted in order to increase the elderly's independence in performing daily activities.

1.2.3 Research questions

Main research question

What can be adapted in the residential area of the elderly with respect to technological and spatial elements in order to increase their independence?

Sub-questions literature study

What are the activities of daily living for the elderly in their residential area?

What technological elements are parts of the residential area of elderly?

What spatial elements are parts of the residential area of elderly?

What indicates independence of elderly in their residential area?

Sub- questions empirical research

What obstructions can be observed with regard to elderly performing daily activities in their residence?

What adaptations in the residence of elderly with respect to technological elements can contribute to independently performing activities of daily living?

What adaptations in the residence of elderly with respect to spatial elements can contribute to independently performing activities of daily living?

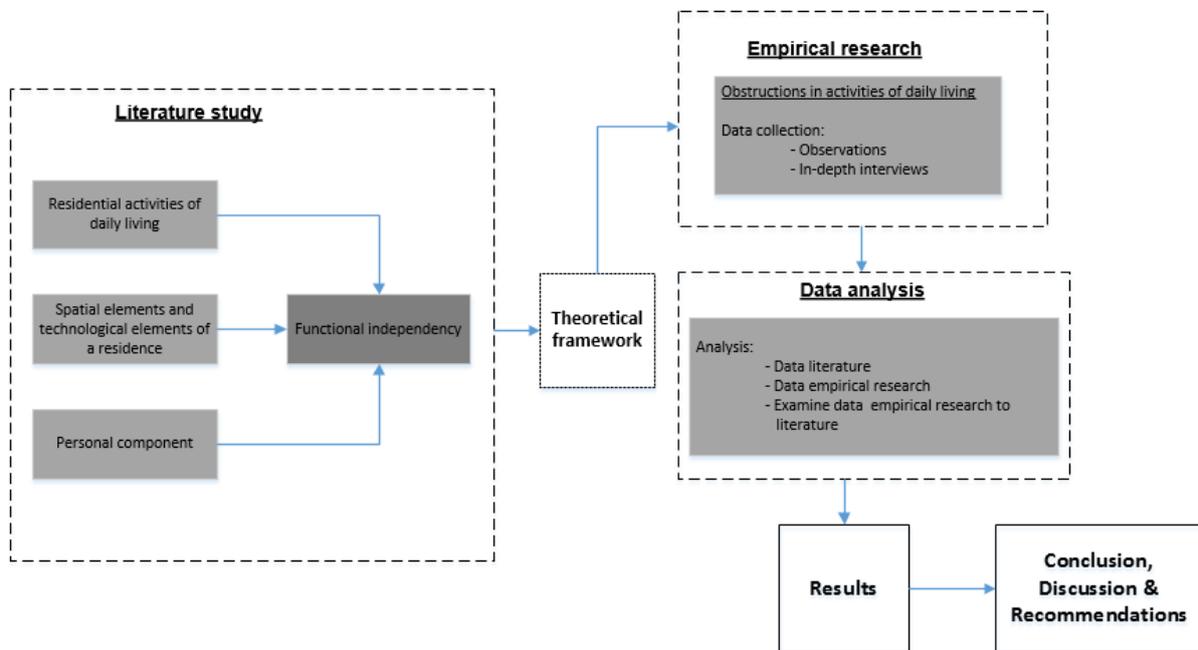
1.2.4 Definition of concepts

The definitions of terminology used in this thesis are displayed in Table 1.1. This clarifies the meaning of terms used during this study, and helps the researcher to depict the right words. For technological elements the definition of assistive technology is applied, since the description of this term accurately describes what is meant by a technological element during this research.

Table 1.1

Term	Definition	Source
Spatial element	A fixed or semi fixed feature element which is build, constructed or placed within a residence	Adapted from Rapoport (1982) and Mobach (2009)
Technological element	Any device or system that allows an individual to perform a task which they would otherwise be unable to do or increase the ease and safety which the task can be performed	Adapted from Tinker <i>et al.</i> (1999)
Independence	The physical ability of elderly to perform activities of daily living in their residence without the help or reliance of others	Adapted from Mann <i>et al.</i> ,2009; Schwanen <i>et al.</i> , 2012; Fiatarone, 1996
Disruption	A spatial or technological element that delays or interrupts continuity of daily living	

1.2.5 Research framework



2 Literature study

During the introduction key terms of this thesis were introduced and in the upcoming paragraphs (2.1 - 2.2) further elaborated. In the end (§2.3) a clear understanding of independence within the residential areas, and the aspects of independence this study includes, should be the outcome of this chapter.

As stated before, independence is a congruence of personal, activity and environmental characteristics. In this research the terms are delineated to residential activities of daily living; and spatial and technological elements inside a residence. Those key terms are in the following paragraphs elaborated.

2.1 Residential activities of daily living

The ability to carry out activities of daily living is believed an important indicator to determine the quality of life of an individual (Spector *et al.*, 1987). As explained in the introduction there are several activities of daily living that are commonly performed within a residence. Elderly spend approximately 80 per cent of their daytime within a residence and therefor carry out most of their activities within this area (Oswald and Werner, 2005). In this chapter the main residential activities of daily living for elderly are elaborated and enumerated.

Four categories of activities of daily living, that are applicable to a residential area, are distinguished in literature (Mathieson *et al.*, 2002; Gignac and Cott, 1998; Kempen *et al.*, 2012); basic activities of daily living (BADL); mobility activities of daily living (MADL); instrumental activities of daily living (IADL); and household activities of daily living (HADL). The categories are subsequently dealt with.

2.1.1 Basic activities of daily living

Basic activities of daily living are the essential physical activities of daily life that represent self-care (Spector *et al.*, 1987; Roehrig *et al.*, 2007). Multiple studies used basic activities of daily living as input for a measurement model to determine the level of frailty (Guralnik, 1995), rate of independence (Kempen *et al.*, 2012; Collin *et al.*, 1988) or unmet need for support in carrying out activities of daily living (Desai *et al.*, 2001). There is no commonly used list of basic daily activities. The authors interpreted and identified the BADL based on their own vision. Considering activities within a residence, the following basic activities of daily living can be distinguished.

Table 2.1 Basic activities of daily living		
	Description	Author(s)
Dressing	Putting on clothes, including closing zippers/ buttons and putting on shoes.	Collin <i>et al.</i> 1988; Katz <i>et al.</i> 1963; Katz <i>et al.</i> 1970
Eating	Put food from plate into mouth, cut up food or prepare food on plate like buttering bread (not cooking).	Collin <i>et al.</i> 1988; Katz <i>et al.</i> 1963; Katz <i>et al.</i> 1970
Toileting	Reaching the toilet, undressing, sitting down, clean self, standing up, and dressing.	Collin <i>et al.</i> 1988; Katz <i>et al.</i> 1963; Katz <i>et al.</i> 1970; Mathieson <i>et al.</i> 2002; Gill <i>et al.</i> 2002; Roehrig <i>et al.</i> , 2007; Thomas <i>et al.</i> , 1998; Buurman <i>et al.</i> , 2011; Guralnik <i>et al.</i> , 1995
Bathing	Getting in and out the shower- cabin or tub, wash and dry the whole body.	Collin <i>et al.</i> 1988; Katz <i>et al.</i> 1963; Katz <i>et al.</i> 1970; Mathieson <i>et al.</i> 2002; Guralnik <i>et al.</i> , 1995;
Grooming	Cleaning teeth, washing face, doing hair, shaving, cutting nails.	Collin <i>et al.</i> 1988; Thomas <i>et al.</i> 1998; Buurman <i>et al.</i> 2011;
Continance	Control of individual over own urination and defecation.	Collin <i>et al.</i> , 1988; Katz <i>et al.</i> 1963; Katz <i>et al.</i> 1970; Roehrig <i>et al.</i> 2007; Mathieson <i>et al.</i> , 2002; Bilotta <i>et al.</i> , 2010; Buurman <i>et al.</i> , 2011

2.1.2 Mobility activities of daily living

Mobility activities of daily living concerns the ambulation and transferring of an individual through a residence (Collin *et al.*, 1988; Gill *et al.*, 2002). Ambulation concerns activities for moving around within the residence. Transferring is about getting from a passive stance (laying or sitting) into a standing position and vice versa. Mobility activities are used as input for measurement models to assess self- maintenance (Roehrig *et al.*, 2007), health status (Mathieson *et al.*, 2002), and rate of independence (Thomas *et al.*, 1998; Collin *et al.*, 1988). The following mobility activities of daily living are applicable to the inside of a residence.

Table 2.2 Mobility activities of daily living

	Description	Authors
Transferring	Getting in and out of bed, transferring from a chair to a standing position	Gill <i>et al.</i> , 2002; Roehrig <i>et al.</i> , 2007; Thomas <i>et al.</i> , 1998; Buurman <i>et al.</i> , 2011; Collin <i>et al.</i> , 1988
Climbing stairs	Ascend and descend of a stair	Guralnik <i>et al.</i> , 1995; Roehrig <i>et al.</i> , 2007; Buurman <i>et al.</i> , 2011; Collin <i>et al.</i> , 1988
Walking	Walking through the residence, within and between residential area's	Guralnik <i>et al.</i> , 1995; Thomas <i>et al.</i> , 1998; Buurman <i>et al.</i> , 2011; Collin <i>et al.</i> , 1988

2.1.3 Instrumental activities of daily living

Instrumental activities of daily living encompass a range of activities that are more complex than basic ADL (Wiener *et al.*, 1990; Graf, 2013). IADL are necessary for an individual to adapt to the environment and maintain an independent life style (Spector *et al.*, 1987; Roehrig *et al.*, 2007). The instrumental activities are used as input for measurement models to determine level of frailty of an individual (Nourhashemi *et al.*, 2001), functional competence (Roehrig, 2007; Graf, 2013), and ability to adapt independently to the environment (Roehrig *et al.*, 2007; Thomas *et al.*, 1998; Spector *et al.*, 1987). Authors distinguish the following IADL.

Table 2.3 Instrumental activities of daily living

	Description	Author(s)
Meal preparation	Preparing breakfast, lunch and dinner, heating, cutting, smearing, and grabbing ingredients.	Mathieson <i>et al.</i> , 2002; Nourhashemi <i>et al.</i> , 2001; Thomas <i>et al.</i> , 1998; Finlayson <i>et al.</i> , 2005; Roehrig <i>et al.</i> , 2007; Wiener <i>et al.</i> , 1990
Telephone use	Operating the telephone, dialing numbers, picking up the phone, and having a conversation.	Mathieson <i>et al.</i> , 2002; Nourhashemi <i>et al.</i> , 2001; Thomas <i>et al.</i> , 1998; Finlayson <i>et al.</i> , 2005; Roehrig <i>et al.</i> , 2007; Wiener <i>et al.</i> , 1990
Taking medication	Taking medicine: correct medicine, dosage and time. Unwrap medicine from package	Nourhashemi <i>et al.</i> , 2001; Thomas <i>et al.</i> , 1998; Finlayson <i>et al.</i> , 2005; Roehrig <i>et al.</i> ,

	and put into mouth.	2007; Wiener <i>et al.</i> , 1990
Managing finances	Managing of financial matters, paying bills, keeping track of bank account, and making financial decisions.	Mathieson <i>et al.</i> , 2002; Nourhashemi <i>et al.</i> , 2001; Thomas <i>et al.</i> , 1998; Finlayson <i>et al.</i> , 2005; Roehrig <i>et al.</i> , 2007; Wiener <i>et al.</i> , 1990

2.1.4 Household activities of daily living

Several authors appoint household activities of daily living (HADL) as instrumental activities of daily living (Graf, 2013; Roehrig *et al.*, 2007; Nourhashemi *et al.*, 2001). In this study we use the term HADL for activities that concern cleaning operations within a residence. Similar to other daily activities, household activities are also used as input for measurement models to determine deterioration of health (Graf, 2013), level of independence (Kempen *et al.*, 2012), and vulnerability/frailty of an individual (Roehrig *et al.*, 2007; Nourhashemi *et al.*, 2001). Concerning a residence the following household activities are distinguished.

	Description	Author(s)
Doing laundry	Washing, drying and ironing clothes. Putting clothes in- and out dry/washing machine	Graf,2013; Kempen <i>et al.</i> , 2012; Roehrig <i>et al.</i> , 2007; Nourhashemi <i>et al.</i> , 2001
Light household chores	Dishwashing, dusting and cleaning up trash	Graf,2013; Kempen <i>et al.</i> , 2012; Nourhashemi <i>et al.</i> , 2001
Strenuous household chores	Vacuuming, mopping, window cleaning and cleaning sanitary area's	Graf,2013; Kempen <i>et al.</i> , 2012; Nourhashemi <i>et al.</i> , 2001
Bed making	Changing and cleaning bed linen	Kempen <i>et al.</i> , 2012; Nourhashemi <i>et al.</i> , 2001

So, there are several daily activities an elderly performs within a residence. One can separate them by the previous described activity categories; basic activities of daily living; mobility activities of daily living; instrumental activities of daily living; and household activities of daily living.

2.2 Environmental elements

The second aspect that defines independence is the environment. As explained in the introduction, this study focus is on the physical environment. Concerning a residence the inner two layers (out of six) “Space Plan” and “Stuff” (Brand, 1994) are elaborated in this study. Within the two layers, highly focused interventions in relatively short time are possible to improve the livelihood of a residence, and in this case the independence (Gill et al., 2002).

In general, a change in the inner layers does not necessitate modifications to the outer layers (Van den Brand, 2004). The other way around this is often the case (Van den Brand, 2004). In common it means that changes in inner layers are associated with less time and lower costs in comparison to adaptations to the outer layers (Brand, 1994).

The elderly are often not keen on major refurbishments to their residence, which disrupt their daily routine for too long (Gill et al., 2002). Therefore, adaptations to the inner layers of the residence are more in line with the desires of elderly.

For spatial and technological elements there are a number of means that can be distinguished within those inner layers. Throughout the years the housing solutions and supportive technologies are more sophisticated and grown in numbers to support the disabled elderly (Werner-Wahl et al., 2012). The time spent to make an adaptation or implement adaptive technology to the space plan or stuff layer is estimated at minutes—to hours—to days (Rodden and Benford, 2003). An overview of the possible adaptations and adaptive technology for the space plan and stuff layer is displayed in this chapter.

2.2.1 Space plan

Space plan concerns the partitioning segments between rooms and floors (Van den Brand, 2004). Space plan is also referred to as scenery (Mobach, 2009) and consists out of the fixed interior layout elements walls; ceilings; floors; and doorways (Rapoport, 1982; Mobach 2009; Brand, 1995). The typical lifespan of the elements of space plan is estimated at approximately seven years (Van den Brand, 2004; Brand, 1995), and is assumed the same period of time those elements are in motion since it concerns fixed elements.

Table 2.5 presents a list of means that encapsulates means that belong to the Space plan. The enlisted means excludes the standardized partitioning segments, and focusses on the attached/adaptive means that may complement a user in carrying out residential activities of daily living.

Space Plan	
Spatial elements	Technological elements
Colour contrast decor	Additional heating bathroom
Grab rails	Additional electric sockets
Grab rails (bath, shower, toilet)	Burglar alarm
Grab rails/ hand rails (steps, ramps)	Ceiling mounted hoist
Height adapted kitchen	Community alarm
Height adjusted bathroom	Door-entry phone intercom
Height adjusted cupboards	Door-entry phone & video intercom
Level access shower	Door opener
Lever door handles	Electric curtain openers
Lever taps	Electrically operated window openers
Lift (communal)	Electronic tap controls
Manual window openers	Environmental control system
Ramp	Gas and CO2 alarm
Floor level adaptations	Key less door lock
Level threshold	Lowered light switches
Wheelchair/ walker storage	Motion detector light switch
Wheelchair accessible corridors	Raised electric sockets
Wheelchair accessible doors	Rocker switches
Wheelchair standard bath room	Smoke alarm
Wheelchair standard shower room	Stair lift
Short rise platform lift	Thermostatic mixing valve
	Thermostatic radiator valve
	Through floor lift
	Toilet frame
	Visual door bell

Table 2.5: Adapted from Lansley et al., 2004; Lee et al., 2013; and Hoenig et al., 2003.

2.2.2 Stuff

“Stuff” is the collective term for all inedible movable objects within a residence to accommodate daily life for the user. Stuff includes objects like furniture, lighting, electrical devices, cooking utensils, household utensils, and other utensils for the user of a residence (Brand, 1994; Rodden and Benford, 2003; Mobach, 2009). These objects are daily, weekly or monthly in motion (Mobach, 2009), and have a typical lifespan of approximately three years (Van den Brand, 2004).

Table 2.6 presents a list of means that encapsulates assistive technology that belongs to the stuff layer. The enlisted means excludes the everyday materials, and focusses on non-standardized means that may complement a user in carrying out residential activities of daily living.

Stuff	
Assistive technologies/ means	
Adapted cutlery	Magnifier
Bath board	Medication reminder
CCTV magnifier	Mobile hoist
Commode	Page turner
Cordless headphone	Perching stool
Doorbell amplifier	Portable air cooler
Dressing aids	Portable shower seat
Electric tin opener	Raised toilet seat
Flashing telephone bell	Riser chair
Grabber	Speaker phone
Jar opener	Telephone amplifier
Kettle tipper	Trolley
Large buttoned telephone	Variable posture bed
Large buttoned remote control	Walker
Long handled cleaning aids	Walking stick
Low air loss mattress	Wheelchair

Table 2.6: Adapted from Lansley et al., 2004; Lee et al., 2013.

There are multiple adaptive means and assistive technologies to implement in a residence for accommodating and supporting individuals in carrying out residential activities. A wide range of possible adaptations/technologies increases the chance that means are able to support persons in activities where they recognize disruptions.

2.3 Conceptual model

Independence is a congruence of activities that an individual carries out, personal capabilities which reflects the ability of a person, and the environment that support or disrupt an individual in carrying out activities (Iwarsson *et al.*, 1998). This study is delineated to the opportunities in physical elements inside the residences of elderly to increase their independence in performing daily activities.

To clarify the scope of this study we display an adapted model of Iwarsson (Iwarsson, 2004; Iwarsson *et al.*, 1998).

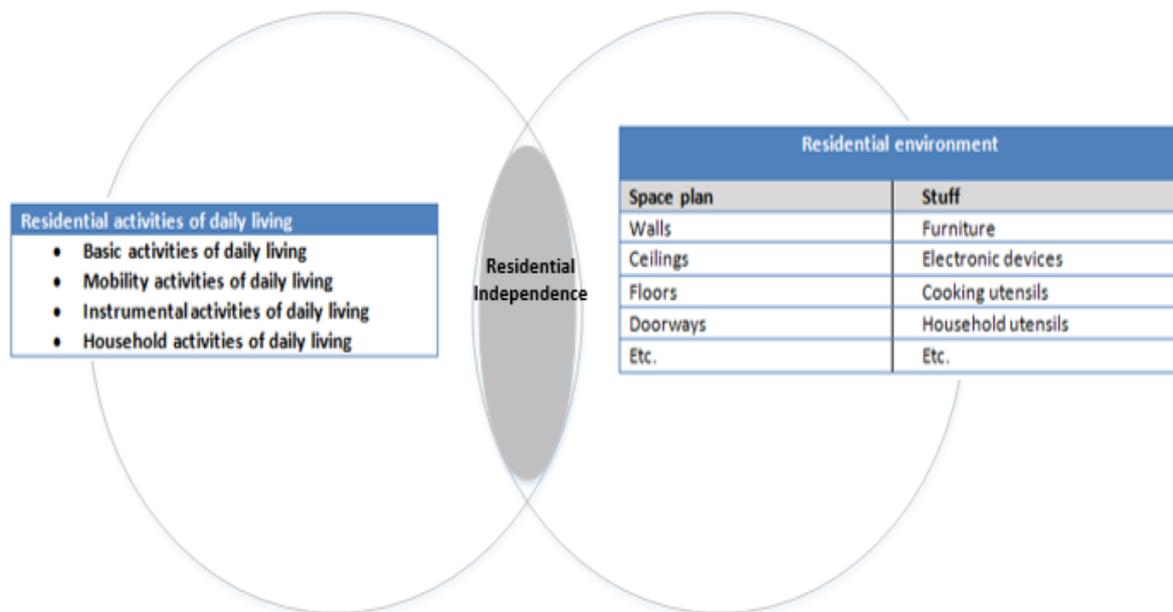


Figure 2.1: Model residential independence (Adapted from Iwarsson, 2004)

The residential activities of daily living (RADL) are in general the same for all elderly. Adjustments concerning the sort of residential activity of daily living are there for none or limited subject to changes.

The layout of a physical environment is an important feature in performing activities (Bitner, 1992). Self-efficacy of elderly in carrying out RADL is also highly reliant on their physical surrounding. Particularly if elderly cannot rely on help of others to support them with carrying out RADL. A residential environmental component can possibly (relatively easy) be adapted to compensate for the deficiencies in functional capacity (Werner-Wahl *et al.*, 2012). The number of daily residential activities and extensive list of acquainted adaptive means to support the performance of those activities implies a possible gain for elderly in increasing independence by applying adaptive means (interventions) to their residence.

The remaining of this study focusses on the design and lay-out of the residence of elderly and its supportive function in carrying out residential activities.

3 Data and method

This research is searching for specific design and lay-out opportunities in the residence of elderly to improve performing residential activities of daily living. As much as possible information was gathered about obstructions in daily activities and possible interventions from a limited number of cases. Therefore this research is entitled as a qualitative research (Ritchie and Lewis, 2003)

To come up with obstructions in performing activities of daily living by elderly the researcher carried out in-depth interviews (elderly, household caregivers, and experts in elderly care) and observed elderly in performing residential activities of daily living (RADL).

3.1 Sample

A purposive sampling method was used for the selection of participants, since the participants were chosen for specific features (Ritchie and Lewis, 2003) (65+ elderly; Living alone; Only receiving assistance in household help, since this shows the beginning of deteriorating physical abilities but still were able to move through the residence and perform daily activities; No cognitive impairments so that they could clearly describe their performance of daily activities). This study aims at people living alone since in this way, the deficiencies in independently performing daily activities were most likely to appear (other way a spouse could help the elderly in performing ADL). The participants of this research were elderly who were receiving household assistance. Those elderly are indicated of not being able to perform household activities themselves. Box 1 provides indicators regarding the elderly that this research covered.

The researcher attempted to come up with detailed information of the disruptions in performing activities of daily living by the elderly in their residence. A homogeneous sample of elderly with the same characteristics is there for most appropriate to investigate (Ritchie and Lewis, 2003). However, concerning the residence, this study used a heterogeneous sample approach. This study examined elderly in apartment complexes, sheltered houses and unattached residences. Since design of the residence could impact the performance of independently carrying out daily activities. For instance, a residence with multiple floors could obstruct the mobility more than a single level residence.

For this study elderly randomly selected from the municipal Ommen in the Netherlands were observed and interviewed. The sample included six female and six male respondents (Table 3.1). The age of the sample group members ranged between 70 and 90 years old. The observations/interviews were conducted in the winter of 2014/2015.

3.1.1 Sample size

A sample size in qualitative research is not determined by fixed rules, but is in general smaller than sample sizes in quantitative research (Al-Busaidi, 2008).

The empirical research encompassed twelve respondents. The respondents were asked for about 2/3 hours about the residential activities of daily living. In table 3.1 are the characteristics of the sample group displayed. Four elderly were observed and interviewed in apartment complexes, four living in sheltered houses and four living in unattached residences. An apartment is a condo that is usually entirely located on a single floor of an apartment complex. A sheltered house is a residence near a nursing home. An unattached residence is a residence generally consisting out of multiple floors and not under the care of a nursing home.

Box 1

65+ Elderly

In the Netherlands live approximately 2,9 million people aged over 65, equal to 17.3 per cent of the total population (TNS/Nipo, 2012). Approximately 52% of the elderly aged 65 and over lives alone (1,5 million elderly) (CBS Statline, 2012). In the year 2013, somewhat less than 125,000 elderly were residents of care institutions (SCP/ESB zorg, 2012). That makes it slightly less than 2,8 million older people who may fall within the research sample for this study. However, this research aims at elderly living alone that receive indicated household help. The total number of granted household help arrangements in 2011 was 417,700 (CPB notitie, 2014). 81.8% (approximately 341,000) of them were granted to people aged 65 and over (Table below the shaded yellow line).

If we assume that of the 2,8 million 65+ people 52% is living alone, it encompasses approximately 1,45 million elderly. It is expected that the percentage of elderly people living alone receiving household help is higher in comparison to cohabiting elderly, since cohabiting elderly are able to help each other in performing household tasks.

As the number of household help arrangements for the elderly is higher than other care services, it is most likely that there are older people receiving only domestic help and no other forms of care. Even more since, in the table below of Central Planning Bureau (CPB the Netherlands) the numbers of informal household help are not included. The total number of household help recipients therefore remains an estimate.

This box shows that there are a significant amount of elderly living alone, which make use or potentially will need support in carrying out daily activities. Outcome of this research is (indirectly) meant for supporting those elderly.

Totaal gebruik voorzieningen in 2011

	Totaal	18-64	65-79	80+
Bijstand	515.900	89,0%	9,9%	1,2%
Bijz. bijstand	419.100	81,5%	14,0%	4,4%
Sociale werkpl. (a)	131.700	99,4%	0,6%(b)	0%
Wajong	207.900	99,4%	0,6%(b)	0%
Schuldsanering	39.600	96,9%	3,0%	0,1%
Huish. hulp	417.700	18,2%	35,1%	46,7%
Pers. verzorging	300.100	11,6%	31,9%	56,5%
Verpleging	141.200	19,1%	34,9%	46,0%
Ind. begeleiding	117.300	66,5%	13,4%	20,1%
Groepsbegeleiding	87.300	40,8%	25,3%	33,9%
Zorg met verblijf	305.400	33,0%	19,4%	47,6%

Bron: eigen berekening op basis van bij het CBS beschikbaar gestelde microdatbestand voor het project "SZW Cumulatie van decentralisatie maatregelen", welke afkomstig zijn van het CBS.

(a) Inclusief mensen die onder begeleiding bij een reguliere werkgever werken en mensen die op de wachtlijst staan.

(b) De leeftijdsgroep 65-79 bevat alle personen die op 31 december 2011 minimaal 65 en maximaal 79 jaar zijn. Een beperkt aantal individuen in deze groep is gedurende 2011 65 geworden en op dat moment overgegaan van sociale werkplaats of Wajong naar AOW.

(CPB, 2014)

Table 3.1 Characteristics of elderly

<i>Respondent</i>	<i>Gender</i>	<i>Age</i>	<i>Type of residence</i>
1	f	79	Apartment
2	m	89	Apartment
3	f	86	Apartment
4	m	89	Apartment
5	m	82	Sheltered house
6	f	80	Sheltered house
7	m	89	Sheltered house
8	m	90	Sheltered house
9	m	72	Unattached residence
10	f	88	Unattached residence
11	f	70	Unattached residence
12	f	89	Unattached residence

* Gender male female (m/f)

3.2 Data collection methods

According to Davis and Fox (2007) elderly are most active in the (mid to late) morning and perform most of the physical activities in the morning. Therefore the elderly were mostly observed and interviewed during the morning.

3.2.1 Observations

Observations were performed prior to the in-depth interviews to increase the validity of this research (Boarnet, 2005). The observation technique is considered an indirect research technique, since the researcher interprets from his perception (Boarnet, 2005).

This technique is used to understand the movement and actual behavior of elderly through their residence (Hudelson 1994), and to observe disruptions in performing daily activities. Probably not all disruptions were recognized by elderly during the in-depth interviews, but from perception of the researcher a daily activity could be performed with less effort.

The observations were conducted by sketching the residences of the elderly (example in Appendix A). The observations observed, using the observable phenomena (physical action; verbal behavior; expressive behavior; spatial relations and locations; temporal patterns; physical objects (Zikmund, 2010), are pinpointed in the sketch and described.

Observing the elderly in front of the in-depth interviews enabled the researcher to envision and interpret the information given during the interviews. The observations took place at the residence of elderly and were conducted by the researcher. To visualize the residence of the elderly, in agreement with the elderly, photos were taken. The sketches and pictures increase face validity. Which assures the observations are thorough and an accurate representation of the reality (Long and Johnson, 2000).

3.2.2 In-depth interviews

Elderly

In this research the researcher is searching for detailed understandings of elderly's' obstructions in performing activities of daily living and what means could assist them in overcoming those obstructions. For this, the study needs to focus on individuals and gain detailed information of each elderly performing daily activity. Those key features are according to Ritchie and Lewis (2003) part of in-depth interviews characteristics. Therefore, part of this research consists out of in-depth interviews.

The information gathered from in-depth interviews concerns independence in performing the activities of daily living by elderly. First, questions were asked to the elderly to determine the elderly's thoughts on independence. Next, the elderly were asked about their perceived obstructions in performing activities of daily living by using an adapted version of the Groningen Activity Restriction Scale instrument (GARS) (Kempen et al., 1993). The GARS method, measures the restriction of elderly in performing in activities of daily living (Kempen et al., 1993). Consequently questions were asked what the reason(s) of this obstruction was according to them; what could be adapted to overcome the obstruction(s); and what the elderly prefer to be done about the obstructions (e.g. assistive technology/means, assistance from caregiver,...). The in-depth interviews were conducted after observing the participant, this enabled the researcher to ask questions about the way elderly perform tasks in their residence (Why are you carrying out the daily activity like the way you do? Is it easy to perform? What could make performing this daily activity easier?)

Interviews took place at participant's residence since the researcher had to observe the location they live in and the participants may have mobility difficulties. The information gathered from the elderly is anonymously discussed. The interviews were conducted by the researcher and in agreement with the elderly the interviews were recorded. The interviews were assisted by a list, which enumerated the activities of daily living, and a questionnaire with the basic questions as mentioned at the end of previous section.

Focus group

Next to the elderly, six household caregivers were interviewed. The researcher interviewed caregivers about the design and lay-out of residences of elderly people.

The household caregivers were interviewed by a focus group approach. The caregivers were divided in two groups of three, so that each one can have their say. The three caregivers were brought together and were asked the same type of questions as asked to the elderly. The researcher functions as moderator by asking questions and leading the discussion/group talk (Burns et al., 2006). Questions like; what disruptions in performing daily activities by elderly do you observe (or heard the elderly "complaining" about?); where will disruptions in the future most likely appear in performing ADL by elderly?; and what is according to you a suitable intervention in the residence of the elderly to overcome the disruption?, were the basic questions for this focus group. In agreement with the household caregivers the researcher recorded the interview.

Experts

Subsequent to interviews with caregivers, experts regarding elderly care were interviewed. Following from literature, the researcher should have a clear picture of possible interventions in the residence

of elderly. However, the ever developing market and know-how of experts reaches somewhat further and helped the researcher in further understanding the opportunities and developments in elderly care related to the residence. The experts were asked to give opportunities to facilitate the performance of daily activities. In agreement with the experts the researcher recorded the interviews.

3.3 Method of analysis

The abundance of data is encapsulated in chapter 4 Results. First of all the gathered data is read multiple times to gain a sense of the whole. Next, the disruptions concerning the residence of elderly are highlighted and documented in tables.

The results mentioned by elderly and caregivers, and observed by the researcher are separated per residential area. The disruptions are distinguished by key terms that describe the problem in one word. One can think of “accessibility”, which describes problems related to accessing a room or the residence itself. Another key term is “walkability”, which encapsulates problems concerning walking around inside the residence. Other key terms are reachability, and manoeuvrability.

Per key term the disruptions mentioned by elderly and caregivers are listed per object of disruption and described by citations of elderly and caregivers. The observed disruptions are also listed per object of disruption along with a brief description of the observed problem.

Each of the citations and descriptions of the observed problems are accompanied by a number(s) between brackets. This number stands for the residence type(s) in which the disruption is observed or mentioned (Apartment (1), Sheltered house (2), Unattached residence (3)).

The results out of interviews with experts are also documented in a table. Their judgments are separated by various topics like “developments”, “elderly”, “technology”, and the “residence”. For each topic a couple of comments of the experts are enlisted. The commentaries of experts are no comprehensive judgements, but each a quotation of one of the experts. A judgement of an expert might not be in line with another expert’s opinion/experiences. The input of experts is used to get a sense of elderly residential care related topics.

4 Results

In this chapter results from empirical research are displayed. The results are derived from three data sources: elderly, household caregivers, and experts. This chapter encapsulates the abundance of information that is enclosed in the annex.

4.1 Results elderly

The first empirical research question concerning disruptions in the residences is elaborated in Tables 4.1 - 4.10 and acquainted diagrams one till ten. The first five tables (4.1-4.5) and diagrams (4.1-4.5) provide an overview of the disruptions per residential area as mentioned by the interviewed elderly. Table 4.6 till 4.10 and related diagrams encapsulate the disruptions per residential area as observed by the researcher.

4.1.1 Disruptions mentioned by elderly

The disruptions mentioned by elderly are displayed in this paragraph (example in Annex A). In the tables the “key terms” describe in one word the mentioned limitation from an environmental demand perspective. The “object of disruption” concerns the residential element of the mentioned disruption, and “commentary of elderly” provides citations of elderly regarding the mentioned problem.

Table 4.1 Bathroom disruptions mentioned by Elderly		
<i>Key term</i>	<i>Object of disruption</i>	<i>Commentary of elderly</i>
Accessibility	Entrance of shower cabin	* Stepping stone towards shower-cabin is rather high, and made of massive material (stone) (1,3)
	Entrance towards bathroom	* I need to be careful stepping into the bathroom, because of high stepping stone (3) * I think the doorway is somewhat small, because of folding door (1)
Manoeuvrability	Toilet	* Toilet should be higher or equipped with levers (1,3)
	Bathroom size	* It's a relatively small bathroom, a bigger bathroom would be helpful (3)
Reachability	Washing machine	* I need to get on my knees to put wash into- and pull out of the washing machine, and standing up is difficult for me (2,3)
	Grab bar near toilet	* I use the sink to pull myself up instead of grab bar, easier to reach (3)
Walkability	Bathroom floor	* The tiles in the bathroom could become very slippery (2,3)

• Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.

A total number of 18 functional disruptions were mentioned by the interviewed elderly concerning their bathrooms (Table 4.1). This number is build out of the sort of disruption times the number it is

mentioned. So, a disruption could be mentioned by several elderly, by which the total exceeds the number of types of disruptions. This accounts also for tables 4.2-4.10.

Problems regarding entrance of shower cabin; entrance towards bathroom; toilet; washing machine; and bathroom floor, were most frequently mentioned by the elderly (n=3). Least frequently mentioned disruption to do with the bathroom concerned the reachability of a grab bar near a toilet (n=1).

The disruptions are categorized by key terms into four categories. The number of mentioned disruptions in the bathroom, per key term, ranged between three and six (Diagram 4.1). Most problems that were mentioned concerned accessibility (6) and the least mentioned disruptions concerned walkability (3).

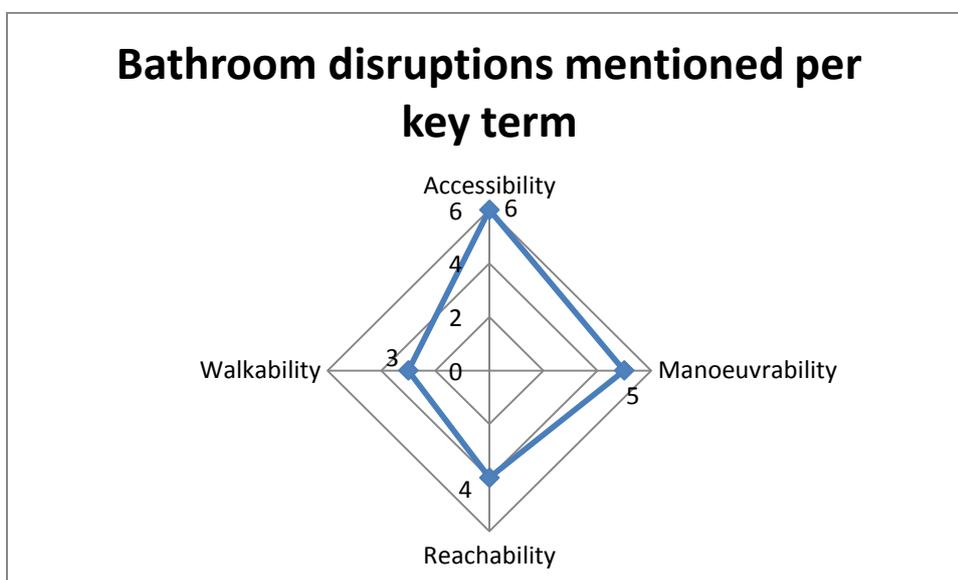


Diagram 4.1 Bathroom disruptions mentioned by elderly per key term

So, the disruptions regarding the bathroom are evenly spread among accessibility, manoeuvrability, reachability, and walkability related problems.

A total number of 8 functional disruptions were mentioned by the interviewed elderly concerning their kitchens (Table 4.2). Problems regarding the upper kitchen cabinets were most frequently mentioned by the elderly (n=3). Least frequently mentioned disruption to do with the kitchens concerned the walkability of the kitchen floor (n=1).

Table 4.2 Kitchen disruptions mentioned by Elderly

Key term	Object of disruption	Commentary of elderly
Reachability	Lower kitchen cabinets	* It would be useful if the lower cabinets were a bit higher (2)
		* To get some materials I need to use a grabber (1)
	Upper kitchen cabinets	* It is sometimes hard to get something out of the upper cabinets, since I am small (2,3)
		* For cleaning the upper cabinets I need to use steps and sometimes I get dizzy while doing so (3)
	Washing machine/ dishwasher	* I need a handhold for using the washing machine, it would be nice if the washing machine stood somewhat higher (3)
Walkability	Flooring of kitchen	* I need to be careful, sometimes it is slippery. A carpet floor would be better. Covering is now sort of sail floor (2)

• Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.

The disruptions are categorized by key terms into two categories. The number of mentioned disruptions in the kitchen, per key term, ranges between one and seven (Diagram 4.2). Most problems that were mentioned concerned reachability (7) and the least mentioned disruptions concerned walkability (1).

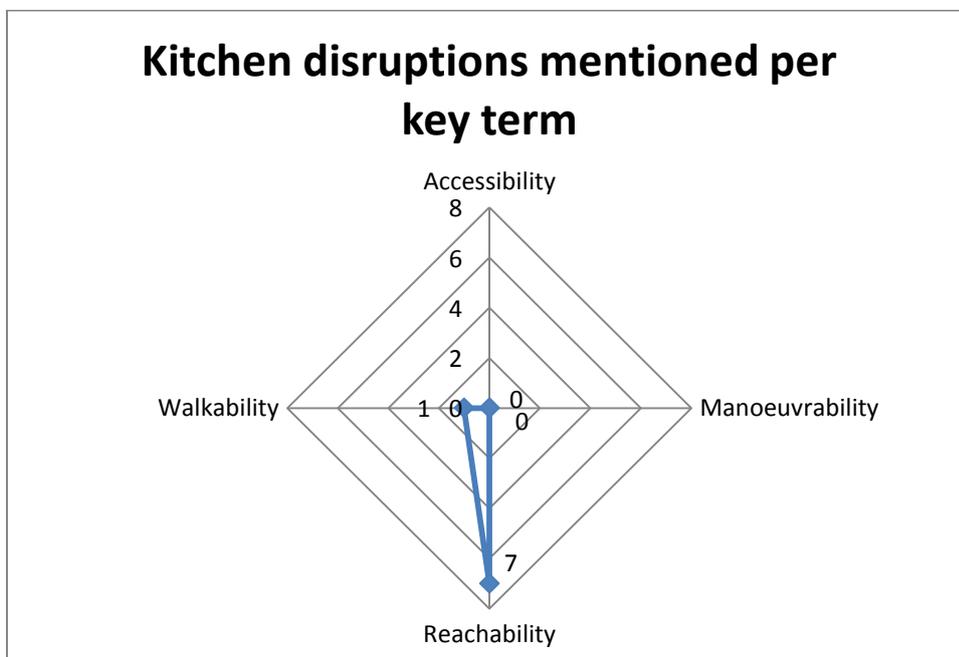


Diagram 4.2 Kitchen disruptions mentioned by elderly per key term

Clearly, according to the elderly most disruptions regarding the kitchen concerns reachability-related issues.

A total number of 8 functional disruptions were mentioned by the interviewed elderly concerning their living rooms (Table 4.3). Problems regarding the seating furniture were most frequently mentioned by the elderly (n=6). Least frequently mentioned disruptions had to do with walkability of the living room floor (n=1) and the accessibility of the doorway towards the yard (n=1).

Key term	Object of disruption	Commentary of elderly
Manoeuvrability	Seating furniture	* I have trouble getting up from the lower chairs (2,3)
		* I need levers to stand up (3)
		* The chairs are a bit heavy (2)
		* A neighbour slipped because of the wheels under the chair (2)
Walkability	Flooring material	* I cannot raise my feet that high anymore and the floor is opening-up(2)
Accessibility	Door towards front yard/balcony	*When I am going outside I have to pay attention to the stepping stone, rather high (2)

• Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.

The disruptions are categorized by key terms into three categories. The number of mentioned disruptions in the living room, per key term, ranges between one and six (Diagram 4.3). Most problems that were mentioned concerned manoeuvrability (7) and the least mentioned disruptions concerned walkability (1), and accessibility (1).

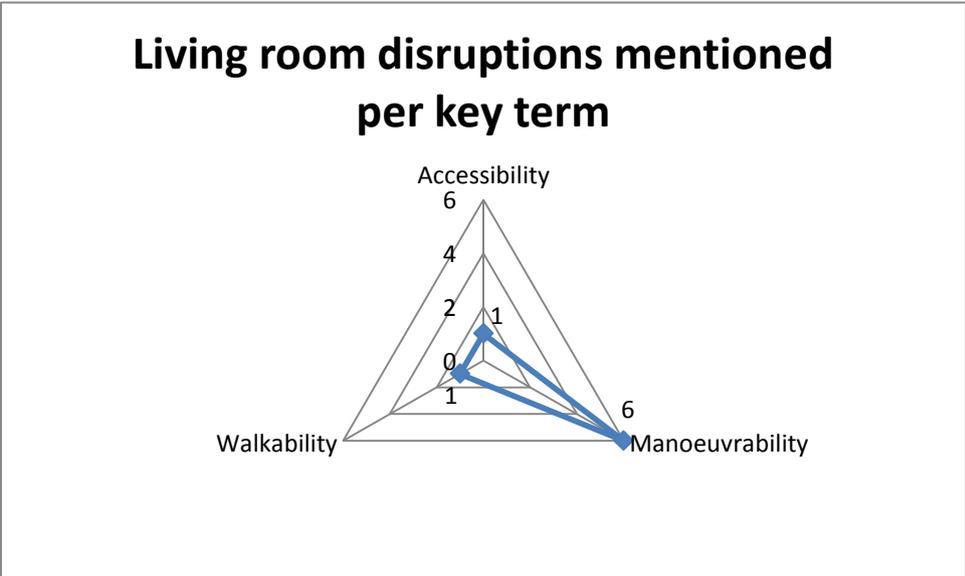


Diagram 4.3 Living room disruptions mentioned by elderly per key term

With respect to the living room the main problem concerns manoeuvrability-related problems.

A total number of 5 functional disruptions were mentioned by the interviewed elderly concerning the bedrooms (Table 4.4). Each disruption was only mentioned once by the elderly. Two disruptions concerned the flooring material and two disruptions concerned the doorways.

Table 4.4 Bedroom disruptions mentioned by Elderly		
<i>Key term</i>	<i>Object of disruption</i>	<i>Commentary of elderly</i>
Walkability	Deep-pile carpet in bedroom, adjoining room parquet flooring	* I think certain shoe soles disrupt walking through different rooms. By shoes with antiskid soles I sometimes get stuck in the bedroom (1)
	Parquet flooring bedroom, adjoining room deep-pile carpet	* I always walk on stockings (towards) upstairs, this could be slippery sometimes cause bedroom has carpet flooring (3)
Accessibility	Doorway towards bedroom	*I think the doorway is somewhat small, since it is a folding door (1)
	Threshold towards bedroom	* I think the threshold should be removed (3)
Manoeuvrability	Space around bed	* I have got things standing close to bed, kitsch and furniture (3)

• Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.

The disruptions are categorized by key terms into three categories. The number of mentioned disruptions in the bedroom, per key term, ranges between one and two (Diagram 4.4). Most problems that were mentioned concerned the accessibility (2) and the walkability (2) of the bedroom, with the least mentioned disruptions concerned manoeuvrability (1).

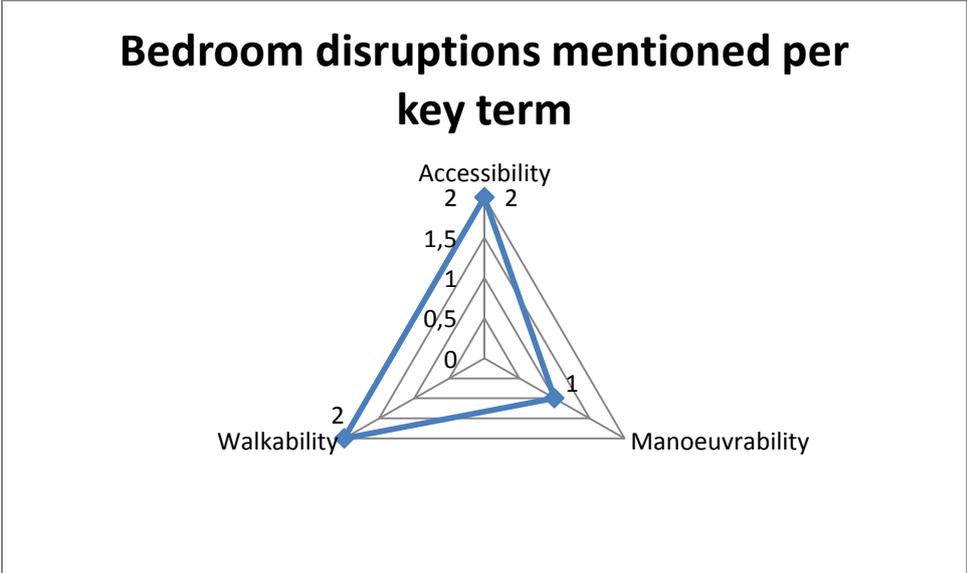


Diagram 4.4 Bedroom disruptions mentioned by elderly per key term

Regarding the bedroom of elderly, the limited numbers of perceived disruptions were evenly distributed across the key elements.

A total number of 12 functional disruptions were mentioned by the interviewed elderly concerning their hallway/entrances (Table 4.5). Problems regarding the stairs in the hallway were most frequently mentioned by the elderly (n=5). Least frequently mentioned disruption had to do with manoeuvrability in the hallway because several doors were located close to each other (n=1).

Table 4.5 Hallway/Entrance disruptions mentioned by Elderly

<i>Key term</i>	<i>Object of disruption</i>	<i>Commentary of elderly</i>
Accessibility	Thresholds	* I need to be careful when I pass the thresholds (3)
	Stairs towards entrance residence	* The entrance has steep stairs, and it takes some time for me get up there (1)
	Entrance living room from hallway	* The stretcher of the paramedics could not make the turn towards living room, meter cupboard makes hallway too small (2)
Walkability		* Closet in the hallway makes the way towards living room small, especially when walking with walker (1)
	Stairs towards basement, 1st floor, and second floor	* Stairs are steep, impractical and not safe (3)
	Curving stairs	* I need to climb the stairs on the left side, since the steps are wider on this side (3)
	Stair towards attic	* Stair is steep, difficult to pull down, and is heavy (3)
Manoeuvrability	Doors around hallway	* Moving around in the hallway area is rather difficult, since four doors are close to each other (1)

• *Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.*

The disruptions are categorized by key terms into three categories. The number of mentioned disruptions in the hallway/entrance, per key term, ranges between one and six (Diagram 4.5). Most problems that were mentioned concerned the walkability (6) and the least mentioned disruptions concerned manoeuvrability (1).

Hallway/entrance disruptions mentioned per key term

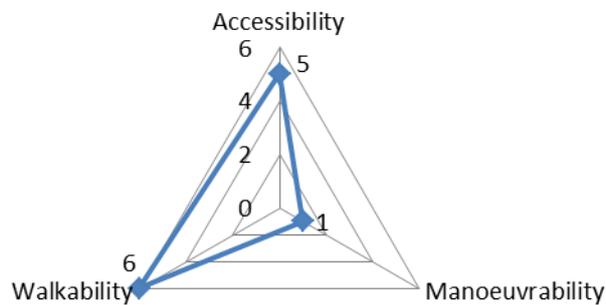


Diagram 4.5 Hallway/Entrance disruptions mentioned by elderly per key term

The disruptions regarding the hallways/entrances clearly concerns accessibility and walkability related problems.

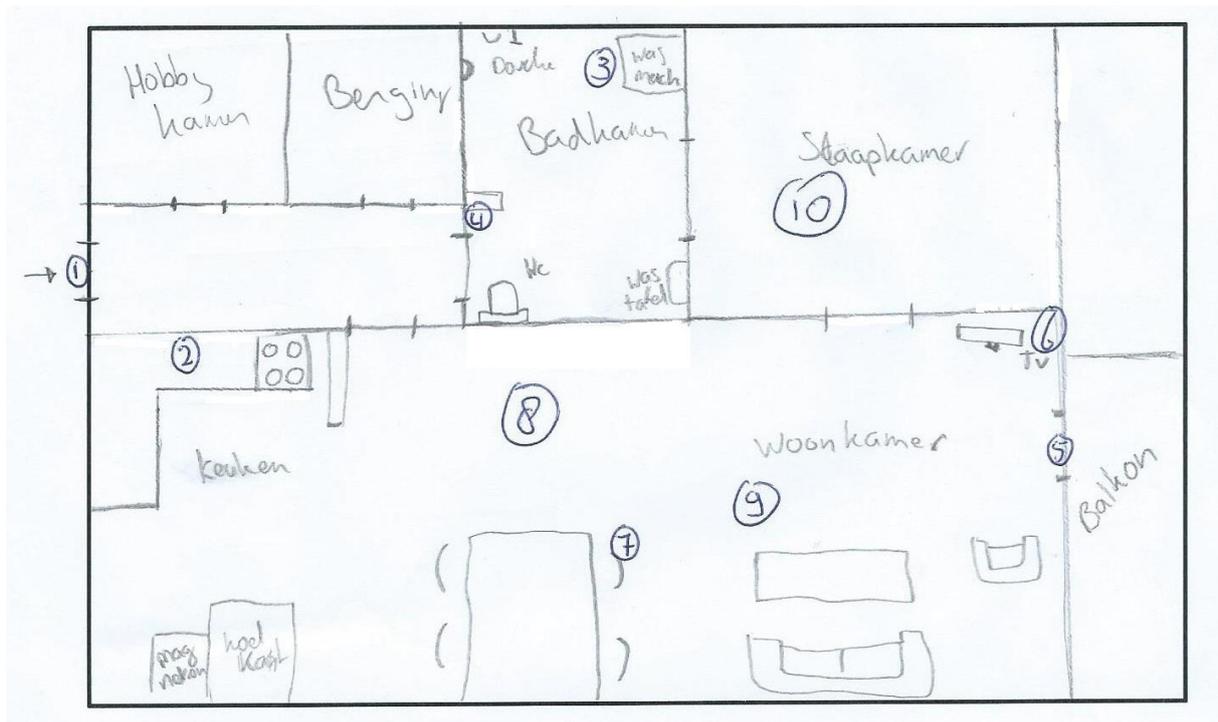
Sub-conclusion

The elderly perceive several disruptions regarding the residential areas. The disruptions regarding the bathroom are evenly spread among accessibility, manoeuvrability, reachability, and walkability related problems. According to the elderly, most disruptions regarding the kitchen concern reachability-related issues. With respect to the living room the main problem concerns manoeuvrability. Regarding the bedroom of elderly, the limited numbers of perceived disruptions were evenly distributed across the key elements accessibility, manoeuvrability, and walkability. The disruptions that have to do with the hallway/entrance clearly concern accessibility- and walkability-related problems.

4.1.2 Disruptions observed by researcher

The disruptions observed by the researcher are displayed in this paragraph (example in Annex A). In the tables the “key terms” describe in one word the observed limitation from an environmental demand perspective. The “object of disruption” concerns the residential element of the observed disruption, and “description of observed disruption” provides a short explanation of the observed problem.

Figure 4.1 displays one of the observation sketches, which were used to document the observed disruptions by the researcher. The circles with numbers pinpoint the disruptions. The observation sketches assisted in documenting the results as in tables 4.6-4.10.



• Note: keuken = kitchen, badkamer = bathroom, slaapkamer = bedroom, woonkamer = living room, balkon = balcony.

Figure 4.1: Observation sketch of disruptions observed in one of the residences

A total number of 39 functional disruptions were observed by the researcher concerning the elderly's bathroom and toilet (Table 4.6). Problems regarding the bathroom floor (n=8), and the entrance of the shower cabin (n=7) were most frequently noticed by the researcher. Least frequently observed disruption concerned the slipperiness of the shower cabin floor (n=1), the narrowness of a doorway towards the toilet (n=1), and the reachability of a toilet paper holder (n=1).

Table 4.6 Bathroom/ Toilet disruptions observed by researcher in elderly's residence

Key term	Object of disruption	Description of observed disruption
Accessibility	Doorway of bathroom	Stepping stone towards bathroom is too high (1,3)
	Entrance of shower cabin	Stepping stone towards shower cabin is too high (1,3)
		Stepping stone has same colour as floor, hard to see (1)
Manoeuvrability	Toilet	Gully (without function) next to shower cabin (3)
		Doorway towards toilet is small (1)
	Toilet	Toilet is too low (1,3)
Reachability	Bathroom space	Absence of grab bar (3)
		Bathroom is too small for elderly to manoeuvre in (3)
	Shower cabin chair	Chair is low and loose, slides away when elderly sits down or stands up (2)
Walkability	Grab bar toilet	Grab bar is located in front of toilet, difficult to reach (1,2,3)
	Toilet paper holder	Toilet paper holder is located in front of toilet, difficult to reach (2)
	Washing machine	Washing machine is too low, difficult to put laundry into and pull out of (1,2,3)
Manoeuvrability	Bathroom floor	Bathroom floor is slippery, especially if it is wet (2,3)
	Rug on bathroom floor	Deep-pile rug on bathroom floor is disrupting walkability; high, drenched, and rigid (1,2,3)
	Shower cabin floor	Slippery floor shower cabin (3)

• Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.

The disruptions are categorized by key terms into four categories. The number of observed disruptions in the bathroom and toilet, per key term, ranges between nine and eleven (Diagram 4.6). Most problems that were observed concerned the accessibility (11) and the least frequently observed disruptions concerned manoeuvrability (9) and walkability (9).

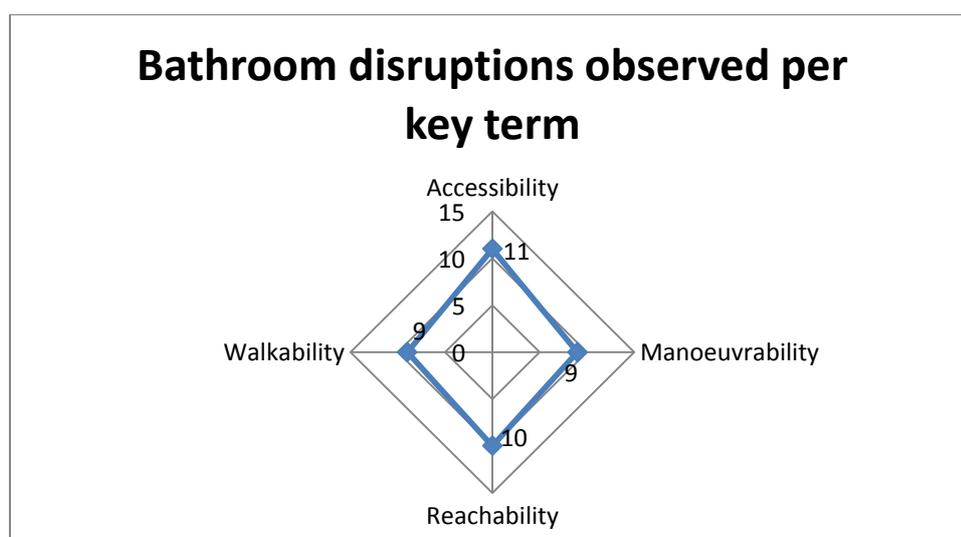


Diagram 4.6 Bathroom disruptions observed by researcher per key term

Disruptions regarding the bathroom are evenly spread among accessibility, reachability, manoeuvrability, and walkability related issues.

A total number of 18 functional disruptions were observed by the researcher concerning the kitchen (Table 4.7). Problems regarding the height of kitchen cabinets (n=10) were most frequently noticed by the researcher. Least frequently observed disruptions concerned the reachability of the washing machine (n=1) and the dishwasher (n=1).

Table 4.7 Kitchen disruptions observed by researcher in elderly's residence

<i>Key term</i>	<i>Object of disruption</i>	<i>Description of observed disruption</i>
Reachability	Lower kitchen cabinets	The lower kitchen cabinets are rather low installed (1,2)
	Upper kitchen cabinets	The upper kitchen cabinets are rather high installed (2,3)
	Washing machine	The washing machine is too low for elderly, hard to put laundry into and pull out of (3)
	Dishwasher	The dishwasher is too low for the elderly too put kitchen utensils into and take out of (3)
Manoeuvrability	Kitchen space	The kitchen is small and difficult to manoeuver in for elderly (1)
Walkability	Kitchen floor	Deep-pile carpet floor is hard to walk on for elderly (3)
		Kitchen floor sail topping is slippery, especially it is wet (2)
Accessibility	Doorway towards adjoining room	Doorway is too small (3)
		Doorway is provided with threshold, disrupts accessibility (3)

• *Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.*

The disruptions are categorized by key terms into four categories. The number of observed disruptions in the kitchen, per key term, ranges between two and twelve (Diagram 4.7). Most problems that were observed concerned the reachability of objects in the kitchen (12) and the least frequently observed disruptions concerned the manoeuvrability (2), the walkability of the kitchen floor (2), and accessibility of the kitchen (2).

Kitchen disruptions observed per key term

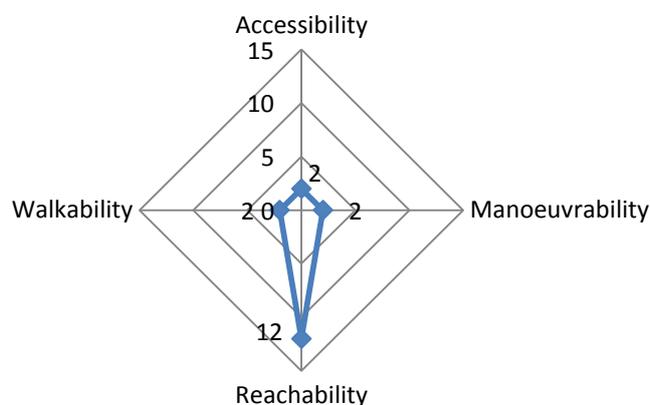


Diagram 4.7 Kitchen disruptions observed by researcher per key term

Clearly, the disruptions regarding the kitchens concerns reachability related problems.

A total number of 22 functional disruptions were observed by the researcher concerning the elderly's living room (Table 4.8). Problems regarding the seating furniture (n=13) were most frequently noticed by the researcher. Least frequently observed disruption concerned the walkability of the living room, due to electrical wiring on a passageway (n=1).

Table 4.8 Living room disruptions observed by researcher in elderly's residence

Key term	Object of disruption	Description of observed disruption
Manoeuvrability	Seating furniture	Seating furniture heavy and for elderly hard to move (1,2)
		Seating furniture is too low (1,2,3)
		Seating furniture is sagging (3)
		Seating furniture is lacking levers (3)
		Wheels beneath chairs on parquet floor, roles away when sitting down or standing up (2,3)
Accessibility	Entrance towards balcony	Stepping stone towards balcony is too high (2)
Walkability	Living room floor	The parquet floor is opening-up (2)
		Deep-pile rug on living room floor, tripping point for elderly (2,1)
		Deep-pile carpet floor is difficult for elderly to walk on (3)
	Electrical wiring	Electrical wiring lays on floor of passageway (2)

• Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.

The disruptions are categorized by key terms into three categories. The number of observed disruptions in the living room, per key term, ranges between four and thirteen (Diagram 4.8). Most problems that were observed concerned the manoeuvrability (13) and the least frequently observed disruptions concerned walkability (5).

Living room disruptions observed per key term

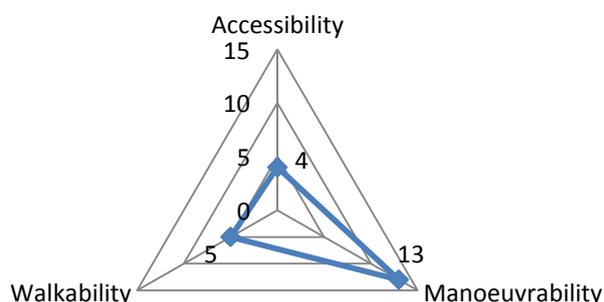


Diagram 4.8 Living room disruptions observed by researcher per key term

The observed disruptions regarding the living room mostly concerns manoeuvrability related problems.

A total number of 10 functional disruptions were observed by the researcher concerning the elderly's bedroom (Table 4.9). Problems regarding the bedroom floor (n=6) were most frequently noticed by the researcher. Least frequently observed disruptions concerned the walkability between bedroom and adjoining room (n=1) and a gully that disrupts a doorway towards adjoining room (n=1).

Table 4.9 Bedroom disruptions observed by researcher in elderly's residence

Key term	Object of disruption	Description of observed disruption
Accessibility	Doorway towards bedroom	Doorway is too small (1)
		Threshold disrupts smooth entrance towards bedroom (3)
	Doorway towards bathroom	A gully towards bathroom disrupts accessibility (2)
Manoeuvrability	Bedroom floor	Kitsch, furniture and materials on bedroom floor makes it difficult to move around (2,3)
Walkability	Transition to bedroom	Parquet floor in interspace and adjoining bedroom has deep-pile carpet flooring, difficult transition for elderly (1)
	Bedroom floor	Slippery bedroom floor due to parquet topping (3)
	Rug on bedroom floor	Deep-pile rug on bedroom floor with curled edges, tripping point (3)

• Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.

The disruptions are categorized by key terms into four categories. The number of observed disruptions in the bedroom, per key term, ranges between one and four (Diagram 4.9). Most problems that were observed concerned the manoeuvrability (4) and the least frequently observed disruptions concerned walkability (3) and accessibility (3).

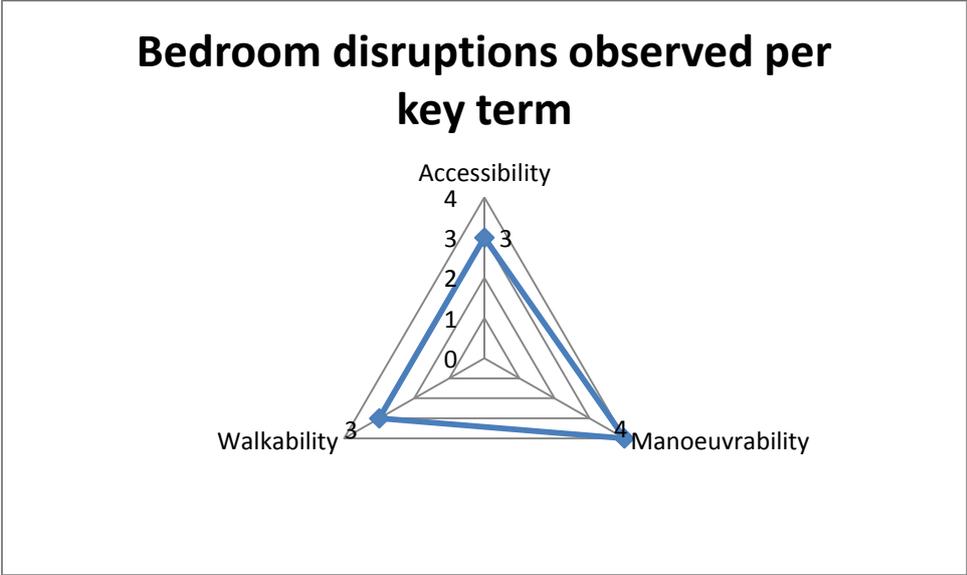


Diagram 4.9 Bedroom disruptions observed by researcher per key term

Regarding the bedroom some disruptions concerning the manoeuvrability were observed. In comparison to the other residential areas the bedroom shows significant less disruptions.

A total number of 21 functional disruptions were observed by the researcher concerning the elderlies’ hallway and entrance (Table 4.10). Problems regarding the stairs (n=9) were most frequently noticed by the researcher. Least frequently observed disruption concerned a small interspace with several doors which disrupted manoeuvrability (n=1), and the entrance of a residence with a double stepping disrupted accessibility (n=1).

Table 4.10 Hallway/ Entrance disruptions observed by researcher in elderly's residence

<i>Key term</i>	<i>Object of disruption</i>	<i>Description of observed disruption</i>
Manoeuvrability	Interspace	Small interspace where four doors come together and disrupts manoeuvrability (1)
Accessibility	Stair at entrance	Stair at entrance is steep (1)
	Rubber door mat	Rubber door mat is too high and rigid (2)
	Entrance of residence	Deep-pile rug is disrupting accessibility (3)
	Doorway of entrance residence	Double stepping stone in doorway entrance disrupts accessibility (2)
	Doorway towards living room	Doorway is rather small and constrained by threshold (3)
Walkability	Passageway towards adjoining room	Adjoining room not accessible for stretcher (of paramedics) and wheelchair because of closet in hallway (1,2)
	Door mat in hallway	Door mat in hallway is woolly and rather high, tripping point (1)
	Stairs towards 1st floor, 2nd floor, attic and basement	Stairs are too steep (3)
		Steps of stairs are irregular (3)
		Stairs is rigid and no grab rails (3)
		Stairs contains a curve which makes steps small (3)
		Despite carpet flooring the stair is slippery (3)
		Stairs to attic is heavy to pull down or push upwards (3)
	Hallway floor	Deep-pile carpet is rigid and difficult to walk on for elderly (3)
	Rugs on hallway floor	Rugs on hallway floor disrupts walking (3)

• *Note: respondent living in an (1) apartment, (2) sheltered house, and (3) unattached residence.*

The disruptions are categorized by key terms into four categories. The number of observed disruptions in the hallway and entrance, per key term, ranges between one and eleven (Diagram 4.10). Most problems that were observed concerned the walkability of the hallway (14) and the least frequently observed disruptions concerned the manoeuvrability (1).

Hallway/ Entrance disruptions observed per key term

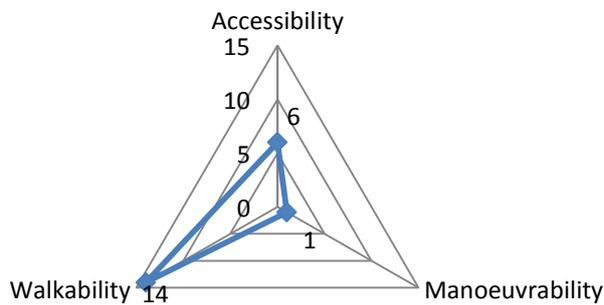


Diagram 4.10 Hallway/ Entrance disruptions observed by researcher per key term

The main disruptions for the hallway/entrance were walkability issues, followed by accessibility-related problems.

Sub-conclusion

The researcher observed a variety of disruptions concerning the residential areas of elderly's residences. Disruptions regarding the bathroom are evenly spread among accessibility, reachability, manoeuvrability, and walkability related issues. Clearly, the disruptions regarding the kitchens concern reachability related problems. The observed disruptions regarding the living room mostly concerns manoeuvrability related problems. Regarding the bedroom some disruptions concerning the manoeuvrability were observed, in comparison to the other residential areas the bedroom shows significant less disruptions. The main disruptions observed for the hallway/entrance were walkability issues, followed by accessibility-related problems.

4.2 Results caregivers

Tables 4.11- 4.15 display results from interviews with (household) caregivers (example in Annex B). The same residential areas as for the elderly were distinguished and discussed. Each table gives key terms, observed disruptions, and commentary of caregivers.

<i>Key term</i>	<i>Observed disruption</i>	<i>Problem based on commentary caregiver</i>
Walkability	Bathroom floor	* Floors in the bathroom are often slippery
		* Rugs on bathroom floor is a possible tripping point
Manoeuvrability	Shower cabin	* Elderly have to sit down, else they can't keep their balance
	Toilet	* Regularly we see small toilets, than it is hard to sit down for elderly and turn around to flush the toilet
		* Sometimes the toilets are rather low
Reachability	Washing machine	* Because of absence grab bar, holding on to washbasin
		* The elderly sometimes experience difficulties in pulling laundry out of the washing machine, it is standing too low

According to the caregivers there are seven sorts of disruptions present at elderly's bathrooms (Table 4.11). Four disruptions concerned the manoeuvrability of elderly, of which three concerned the toilet. Two disruptions concerned the walkability of the bathroom floor, and one the reachability of the washing machine.

<i>Key term</i>	<i>Observed disruption</i>	<i>Problem based on commentary caregiver</i>
Reachability	Refrigerator	* It is sometimes difficult for elderly grab food from the fridge, bending over is hard for them
	Upper kitchen cabinets	* The upper kitchen cabinets are rather high, not convenient and sometimes unreachable for the elderly to grab something
Manoeuvrability		* The elderly often use steps to grab something, really unstable at times
Walkability	Kitchen Floor	* Sail floor is easy to clean, but could be slippery

Four different disruptions were mentioned by caregivers regarding the elderly's kitchen (Table 4.12). Two disruptions concerned the reachability of materials from the upper kitchen cabinets and the refrigerator. One concerned the manoeuvrability when using portable steps, which is dedicated as an unstable and unsafe appliance for elderly. One mentioned disruption concerned the walkability of the kitchen floor.

Table 4.13 Living room disruptions observed by caregivers in elderly's residence

<i>Key term</i>	<i>Observed disruption</i>	<i>Problem based on commentary caregiver</i>
Manoeuvrability	Seating furniture	* Old chairs are heavy and difficult to move for elderly * Sometimes elderly experience problems in standing up, a higher chair would be a solution for some
Walkability	Flooring living room	* It would help if the flooring material has the same height, there are some who have deep-pile carpet or rugs on the floor, those are tripping points * The elderly with parquet flooring should replace it cause it is slippery
Accessibility	Doorway	* The living room is sometimes not accessible for paramedics with stretcher, is a construction error, they should think about it while building a residence * Threshold towards the living room also should be removed, tripping point
Manoeuvrability	Kitsch on floor and window-sill	* Some elderly have an abundance of furniture and kitsch standing on the floor and window-sill, this disrupts cleaning and moving around
Ambient	Lighting	* The lighting is often lacking, and when they are going to walk a threshold is a tripping point

A total number of eight disruptions were mentioned by caregivers concerning the living room of elderly (Table 4.13). Two disruptions were about the manoeuvrability of seating furniture, the walkability of the living room floor, and the accessibility of doorways towards living room.

Table 4.14 Bedroom disruptions observed by caregivers in elderly's residence

<i>Key term</i>	<i>Observed disruption</i>	<i>Problem based on commentary caregiver</i>
Manoeuvrability	Bed	* Some beds are rather low * At times the beds are sagged and difficult to get out of for elderly
Walkability	Bedroom floor	* Rugs, closets, tables and kitsch on the floor, makes it a full bedroom and hard to walk through
Ambient	Lighting	* At night when they need to go to the toilet, lighting is lacking or they cannot find the switch

Four disruptions were mentioned by caregivers regarding the elderly's bedrooms (Table 4.14). The beds are according to the caregivers too low and are sometimes sagging, what makes it difficult for elderly to stand up. The caregivers also observed problems regarding the walkability of the bedroom floor. Elderly seem to put a variety of materials on their floor which disrupts walking around in the bedroom. Poor lighting also disrupts an elderly in performing their activities.

Table 4.15 Hallway/Entrance disruptions observed by caregivers in elderly's residence

<i>Key term</i>	<i>Observed disruption</i>	<i>Problem based on commentary caregiver</i>
Accessibility	Doorways	* The doorways are quite small, especially if the elderly use a walker or wheelchair
	Threshold	* The residence is sometimes difficult to access for the elderly because of a threshold
Manoeuvrability	Grab bars	* There are almost no grab bars on the wall in a residence, they cannot hold on to something
Walkability	Stairs	* Stairs are often too steep or stairs are curved, steps too high and too small, difficult and dangerous for elderly
	Old stairs	* Stairs are sometimes made of wood and very slippery, often they have only a grab-bar on one side and are frequently fragile

A total of five disruptions concern the hallway/entrance of elderly's residences (Table 4.15). According to the caregivers two disruptions consist regarding the accessibility of the residence and doorways. The walkability of the stairs is also mentioned in two different disruptions by the caregivers. Stairs are difficult to walk on for elderly because of the small- and various heights in steps, and the stairs topping are sometimes slippery for elderly according to the caregivers.

Overall, a total of 28 disruptions were mentioned by the caregivers concerning the residences of elderly. The frequency of apparent disruptions is not known since the caregivers were asked of their nowadays experiences towards disruptions in elderly's residences.

Sub conclusion caregivers

In addition to the elderly and the researcher, the caregivers also perceived disruptions in the residences of elderly people. A total number of 28 disruptions were mentioned by the caregivers. Based on the number of disruptions the bathroom and the living room stand out. During the conversations it appeared that the caregivers were more oriented towards hygiene and cleanliness related issues, rather than design and lay-out related topics that could affect the physical ability of elderly. The caregivers kept it close to their expertise of household activities regarding how they perceived the elderly's residences.

Table 4.16 Summarizing table of mentioned and observed disruptions

<i>Residential area</i>	<i>Key term</i>	<i>Disruption</i>	<i>Mentioned by elderly</i>	<i>Observed by researcher +/-</i>	<i>Mentioned by caregiver</i>	
Bathroom						
Accessibility		Entrance of shower cabin	X (3)	X (7)	4	
		Entrance towards bathroom	X (3)	X (3)	0	
		Doorway of toilet		X (1)	1	
Manoeuvrability		Toilet	X (3)	X (6)	3	x
		Bathroom size	X (2)	X (2)	0	
Reachability		Shower cabin chair		X (1)	1	
		Washing machine	X (3)	X (4)	1	x
		Grab bar near toilet	X (1)	X (5)	4	
Walkability		Toilet paper holder		X (1)	1	
		Bathroom floor	X (3)	X (5)	2	x
		Rugs on bathroom floor		X (3)	3	
		Shower cabin floor		X (1)	1	x
Kitchen						
Accessibility		Doorway towards kitchen		X (2)	2	
Reachability		Lower kitchen cabinets	X (2)	X (5)	3	
		Upper kitchen cabinets	X (3)	X (5)	2	x
		Washing machine/dishwasher	X (2)	X (2)	0	
Manoeuvrability		Refrigerator				x
		Kitchen size		X (2)	2	
		Upper kitchen cabinets				
Walkability		Flooring material	X (1)	X (2)	1	x
Living room						
Accessibility		Doorway towards yard/balcony	X (1)	X (4)	3	x
Manoeuvrability		Seating furniture	X (6)	X (13)	7	x
		Kitsch and material on living room floor				
Walkability		Living room floor	X (1)	X (4)	3	x
		Electrical wiring		X (1)	1	
Bedroom						
Accessibility		Entrance of bedroom	X (2)	X (3)	1	
Manoeuvrability		Space around bed	X (1)	X (4)	3	
		Bed				
Walkability		Bedroom floor		X (1)	1	x
		Rugs on bedroom floor		X (1)	1	
		Different flooring material bedroom and adjoining room	X (2)	X (1)	-1	
Hallway/entrance						
Accessibility		Entrance of residence	X (4)	X (4)	0	x
		Stairs towards residence	X (1)	X (1)	0	
		Rubber door mat		X (1)	1	
Manoeuvrability		Doors around hallway	X (1)	X (1)	1	
		Grab bars in hallway				
Walkability		Stairs towards 1st floor	X (4)	X (6)	2	x
		Stairs towards basement	X (1)	X (2)	1	x
		Stairs towards attic	X (1)	X (1)	1	x
		Hallway floor		X (2)	2	
		Passageway towards adjoining room		X (3)	3	

To give an overview of the disruptions mentioned by elderly and caregivers, and observed by the researcher, a table is documented on previous page (Table 4.16).

Comparing the results of perceived disruptions by elderly and observed disruptions by the researcher it appears that both sides came up with the same major disruptions per residential area. With exception of the observed bedroom disruptions, where elderly did not perceive major disruptions. Another difference is in the number of perceived and observed disruptions. The researcher observed much more disruptions in comparison to the elderly. Next to this difference, there were also some disruptions that were not noticed by the elderly. For example, the elderly did not perceive the doorway of the toilet, the rugs on the bathroom floor, the kitchen size, the bedroom flooring material, and the passageways toward adjoining rooms as a disruption. Reasons for not perceiving those additive problems by elderly is that they do not want to complain, are used to their residence (habituation), are lacking expertise in noticing disruptions, or are lacking knowledge of adaptation opportunities. The caregivers perceived a variety of disruptions concerning the lay-out and design, with some not noticed by the researcher and the elderly. For example, the caregivers identified the reachability of the refrigerator in the kitchen, materials and kitsch on the living room floor, and the beds in the bedroom as disruptions where the elderly and the researcher did not. However, the caregivers did not mention design and lay-out related disruptions to the same extent as the researcher and the elderly.

4.3 Results Experts

By interviewing experts in the field of elderly care the research gains an understanding of several topics related to elderly care (example in Annex C). Table 4.17 enumerates a number of comments expert given during the interviews. All divided by various topics.

<i>Topic</i>	<i>Comments of experts</i>
Development	<ul style="list-style-type: none"> • Important development that comes up are the budget cutbacks regarding healthcare, more demand for care against less available money and fewer caregivers
	<ul style="list-style-type: none"> • Older people increasingly need to arrange and want to control their own clinical picture and daily life
	<ul style="list-style-type: none"> • To be able to fill in the elderlies clinical picture, there needs to be a tool to determine the ability of elderly to carry out self-care
	<ul style="list-style-type: none"> • There will be a more people-oriented way of providing care, more customization
Elderly	<ul style="list-style-type: none"> • Elderly need to accept that their physical abilities are decreasing
	<ul style="list-style-type: none"> • Remarkably, elderly see and know their disruptions, but do not act to secure their safety in performing daily activities
	<ul style="list-style-type: none"> • The care indication often does not corresponds to reality of elderlies abilities
Technology	<ul style="list-style-type: none"> • Technology is not able to solve all disruptions in daily activities, informal care then comes into play
	<ul style="list-style-type: none"> • Part of technology is self-regulated and the elderly do not need to cope with it
	<ul style="list-style-type: none"> • If technology like tele monitoring is properly used it decreases the disease burden of elderly and time spent per elderly
	<ul style="list-style-type: none"> • Technology like an electronic medicine cabinet makes the advent of a caregiver obsolete
	<ul style="list-style-type: none"> • There are opportunities for technology to help elderly in daily living but it needs to be properly introduced to elderly, they need to get familiar with technology
	<ul style="list-style-type: none"> • Technology needs to be user-friendly and the elderly have to be in control, there needs to be a considered decision of what to leave to technology and what to the elderly
Residence	<ul style="list-style-type: none"> • The residence needs to facilitate the elderly to enable independent living
	<ul style="list-style-type: none"> • Elderly are not able to detect all limitations in their residence, a certain knowledge and understanding is needed to assess a residence
Informal care	<ul style="list-style-type: none"> • There are approximately 3 million informal caregivers available in the Netherlands
	<ul style="list-style-type: none"> • The number of informal caregivers is higher than the demand.

	<ul style="list-style-type: none"> • It is probably a certain amount of elderly’s unawareness of available informal caregivers, and there is a barrier for elderly to make use of such care (by unknown persons)
Future	<ul style="list-style-type: none"> • Elderly need to be asked how they experience independent living and what is necessary to stay independent in the future
	<ul style="list-style-type: none"> • Municipalities need to make an accurate assessment of the abilities of elderly, and need to have the courage to listen to relatives in order to come to a decision

Table 4.17 documented a variety of topics. When looking at developments concerning elderly living at home it appears that experts mention cut backs as a major impact on putting this into shape. According to the experts we need to get back to customized care, where time per elderly is set tightly and quality of care is guaranteed. In addition, it is important that elderly stay in control over their live and care they are receiving.

In order to enable independent living for the elderly the desires and needs of elderly should, together with relatives and specialists, be translated into capacities to benefit from healthcare. To be able to fulfil those healthcare needs, the residential environment, social environment (care by relatives) and opportunities for home care needs to be examined. Concerning the residential environment it cannot be expected that elderly are able to identify all limitations themselves. There is a need for expertise and knowledge in order to identify limitations, and translate them into suitable solutions.

Residential adaptations are to some extent able to support elderly in independent living. However, not all disruptions can be neglected by adaptive means. Therefor an important role will remain for the informal caregivers.

Table 4.17 is more or less summarized by a quotation of one of the experts.

Quotation Ir. Butijn:

“After gaining insight in the situation of an elderly, the elderly and their relatives should be consulted of the abilities of the elder, what could be adapted in the residences, and what kind of support is needed? This must be done in collaboration.”

Sub conclusion experts

According to the experts, elderly want to be in control of their own residential area and the daily activities conducted in this area. However the elderly need to recognize that over time, their physical abilities deteriorate. The independence of the elderly can be increased when user-friendly means are implemented in the design and lay-out of a residence. In order to determine suitable solutions for the residential area the elderly should, together with relatives and a specialist, assess the home situation.

5 Conclusion and Discussion

The objective of this study is to discover opportunities in the residences of elderly people in order to increase their independence in performing daily activities. The main research question for this study:

What can be adapted in the residential area of the elderly with respect to technological and spatial elements in order to increase their independence?

The elderly perceive several disruptions regarding the residential areas. The perceived disruptions regarding the bathroom are evenly spread among accessibility, manoeuvrability, reachability, and walkability related problems. According to the elderly, most disruptions regarding the kitchen concern reachability-related issues. With respect to the living room the main problem concerns manoeuvrability-related problems. Regarding the bedroom of elderly, the limited numbers of perceived disruptions were evenly distributed across the key elements. The disruptions that have to do with the hallway/entrance clearly concern accessibility- and walkability- related problems.

The researcher observed a variety of disruptions concerning the residential areas of elderly's residences. Disruptions regarding the bathroom are evenly spread among accessibility, reachability, manoeuvrability, and walkability related issues. Clearly, the disruptions regarding the kitchens concern reachability related problems. The observed disruptions regarding the living room mostly concern manoeuvrability related problems. Regarding the bedroom some disruptions concerning the manoeuvrability were observed. In comparison to the other residential areas clearly less disruptions were observed in the bedroom. The main disruptions observed for the hallway/entrance were walkability issues, followed by accessibility-related problems.

Comparing the results of perceived disruptions by elderly and observed disruptions by the researcher it appears that both sides came up with the same major disruptions per residential area, with the exception of the observed bedroom disruptions, where elderly did not perceive major disruptions. Another difference is in the number of perceived and observed disruptions. The researcher observed much more disruptions in comparison to the elderly. Next to this difference, there were also some disruptions that were not noticed by the elderly. For example, the elderly did not perceive the doorway of the toilet, the rugs on the bathroom floor, the kitchen size, the bedroom flooring material, and the passageways toward adjoining rooms as a disruption. Reasons for not perceiving those additive problems by elderly is that they do not want to complain, are used to their residence (habituation), are lacking expertise in noticing disruptions, or are lacking knowledge of adaptation opportunities.

In addition to the elderly and the researcher, the caregivers also perceived disruptions in the residences of elderly people. Based on the number of disruptions the bathroom and the living room stand out. The caregivers perceived a variety of disruptions concerning the lay-out and design, with some not noticed by the researcher and the elderly. For example, the caregivers identified the reachability of the refrigerator in the kitchen, materials and kitsch on the living room floor, and the beds in the bedroom as disruptions where the elderly and the researcher did not. However, the caregivers did not mention design and lay-out related disruptions to the same extent as the researcher and the elderly. During the conversations it appeared that the caregivers were more oriented towards hygiene and cleanliness related issues, rather than design and lay-out related topics that could affect the physical ability of elderly. The caregivers kept it close to their expertise of

household activities regarding how they perceived the elderly residences. Therefore, for identifying lay-out and design related disruptions regarding the residences of elderly, household caregivers are not the appropriate individuals. A certain expertise with respect to lay-out and design of a residence is needed in order to identify the disruptions and acquainted adaptive means.

According to the experts, elderly want to be in control of their own residential area and the daily activities conducted in this area. However the elderly need to recognize that over time, their physical abilities deteriorate. The independence of the elderly can be increased when user-friendly means are implemented in the design and lay-out of a residence. In order to determine suitable solutions for the residential area the elderly should, together with relatives and a specialist, assess the home situation.

Combining the disruptions identified during the empirical research of this study, together with the adaptive means gathered by literature study, resulted in the following tables that can be used for answering “What can be adapted in the residential area in order to increase the independence of elderly”.

Table 5.1 Adaptations for the bathroom disruptions

Bathroom	<i>Key term</i>	<i>Disruption</i>	<i>Adaptation</i>
	Accessibility	Entrance of shower cabin	Level access shower, remove thresholds, grab rails, wheelchair accessible
		Entrance towards bathroom	Level access bathroom, remove thresholds, wheelchair accessible
		Doorway of toilet	Broaden doorway, level threshold
	Manoeuvrability	Toilet	Raised toilet seat, toilet frame, grab rails
		Bathroom size	Grab bars, remove redundant materials
		Shower cabin chair	Grab bars, fixed shower seat
	Reachability	Washing machine	Washing machine riser
		Grab bar near toilet	Relocate grab bar
		Toilet paper holder	Relocate toilet paper holder
	Walkability	Bathroom floor	Anti-skid tiles
		Rugs on bathroom floor	Remove rugs or low anti-skid rugs
		Shower cabin floor	Anti-skid tiles, anti-skid rugs

Table 5.2 Adaptations for the kitchen disruptions

Kitchen	<i>Key term</i>	<i>Disruption</i>	<i>Adaptation</i>
	Reachability	Lower kitchen cabinets	Height adjusted cabinets, height adjusted cupboards
		Upper kitchen cabinets	Height adjusted cabinets, height adjusted cupboards
		Washing machine/dishwasher	Riser platform, height adjusted installed
		Refrigerator	Riser platform, height adjusted installed
	Manoeuvrability	Kitchen size	Broaden doorway, remove redundant materials
		Upper kitchen cabinets	Height adjusted cabinets
	Walkability	Flooring material	Anti-skid flooring material

Table 5.3 Adaptations for the living room disruptions

Living room	<i>Key term</i>	<i>Disruption</i>	<i>Adaptation</i>
	Accessibility	Doorway towards yard/balcony	Level thresholds, constructed wheelchair ramp
	Manoeuvrability	Seating furniture	Riser chair, height adjusted seating furniture
		Kitsch and material on living room floor	Remove redundant materials
	Walkability	Living room floor	Level flooring material, remove rugs
		Electrical wiring	Cordless materials, wire housings

Table 5.4 Adaptations for the bedroom disruptions

Bedroom	<i>Key term</i>	<i>Disruption</i>	<i>Adaptation</i>
	Accessibility	Entrance of bedroom	Remove thresholds
	Manoeuvrability	Space around bed	Remove redundant materials
		Bed	Variable posture beds, low air loss mattress, riser aids
	Walkability	Bedroom floor	Anti-skid flooring material
		Rugs on bedroom floor	Remove rugs or low anti-skid rugs
		Different flooring material bedroom and adjoining room	Level flooring materials adjoining rooms

Table 5.5 Adaptations for the Hallway/entrance disruptions

Hallway/entrance	Key term	Disruption	Adaptation
	Accessibility	Entrance of residence	Level thresholds, constructed wheelchair ramp
		Stairs towards residence	Short rise platform lift, grab rails both sides
	Manoeuvrability	Doors around hallway	Remove doors, adjust doorways
		Grab rail in hallway	Relocate grab rail, install grab rail
	Walkability	Stairs towards 1st floor	Stair lift, through floor lift, grab rails, anti-slip flooring materials, equalize steps
		Stairs towards basement	Grab bars and grab rails, limit steepness
		Stairs towards attic	Limit steepness, add grab rails
		Hallway floor	Remove rugs, anti-skid flooring material
		Passageway towards adjoining room	Broaden doorways, remove redundant materials in hallways

In conclusion, it appears that there are certainly opportunities in the residences of elderly people to enable and improve independently living. A decreasing availability of home care service provision, and care by relatives not always available makes adjusting the residential area a suitable substitute or even a necessary condition. After all, an incorrect design and/or lay-out of the residential environment increases the risk of accidents and inconveniences, which undoubtedly leads to an even higher demand for home care- or other additional healthcare support.

So, why does the government hold on to the thought of supplying the increasing demand for home care assistance with care by relatives? Supplying the elderly with home care in their residential environment with disruptions in it still makes independent living inconceivable. Therefore, the residences of elderly must be assessed and adapted first, using the checklist (table 5.1 - 5.5) as provided previously, in order to make independent living conceivable.

The costs of the adaptations do not have to be high, in particular those of simple modifications (e.g. grab bar (€20), toilet seat raiser (€35), and washing machine riser (€45)). The government can deploy the adaptations for even lower costs if the residences are adapted on large scale. The adaptations are only a one time investment, where home care (or care by relatives) is a continuous investment of time and/or funds. If the costs of adaptations to the residence become too excessive the consideration needs to be made to accommodate the elderly elsewhere or to use care service provision as substitute. The costs of the adaptations must be weighed against the costs of the care services.

It is a proper decision of the government to return some of the responsibility regarding healthcare arrangements back to its citizens. However, the government cannot be completely uninvolved, since it cannot be expected that (all) elderly are capable of arranging the care they need themselves.

6 Recommendations

6.1 Recommendations stakeholders

After having conducted this study the researcher provides recommendations for the stakeholders.

Elderly

It is important for the elderly to stand benevolent for adaptations to their residence in order to increase and improve their independence. The adaptive means should be regarded as an opportunity to enable independent living instead of a threat to their habituation. It is important to convince the elderly, by for example relatives, of the added value of adaptive means. To increase the willingness of elderly they should be involved in the decision making process.

Companies

For companies with the expertise of adapting a residential environment for independent living, there are opportunities to bring in adaptive means to the residential environment of elderly. The ongoing development of (sophisticated) technological and spatial means will enrich the ability of adaptive means to support independent living. It is recommended for those companies to make their presence known to the government and elderly. The companies are recommended to use the disruptions that appeared during this research as a marker for their development of adaptive means, allowing the offered adaptive means to fit the present disruptions.

It is recommended for construction companies to take into account the user function of a residence in an early stage of the building process. If a building will be used by elderly it is recommended to make adaptations during the building process instead of adapting the residence afterwards.

Government

The government is recommended to increase their focus on the residential environment instead of adhering to care by relatives to withstand the growing demand for home care. This study revealed that there are most definitely opportunities in the residential areas of elderly people to increase their independence. To assess the residential environment on identifying disruptions, and acquainted adaptations, it is recommended to use the checklist as published in the conclusion/discussion. For conducting those types of operations a residence consultant should be employed, together with a medical specialist to determine the clinical picture of elderly in order to tailor the adaptations to the elderly's needs and abilities. Regarding residential adaptations a counter with a residential consultant should be employed within municipalities in order to assist elderly in making decisions for adaptations.

Not every elderly is/will be able to afford the adaptation(s). The government should make funds available to cover the costs. The government should also discuss with rental institutions the opportunities to apply adaptations in the residences. Rental institutions prescribe policies to the

residents that allow limited changes to the residences. In the context of social involvement, and undisclosed partnership (“participatiemaatschappij”), rental institutions should open up. As compensation, the government could offer the rental institutions financial discounts (like a low interest loan).

Experts

It is important that experts are involved in policy determination of municipalities regarding home care of elderly people. The experts have their own vision on this topic and might give governments new insights. It is recommended to experts to consider the outcome of this study in their judgement over independent elderly, and the supportive function of their residences.

6.2 Recommendations further research

A large variety of disruptions are identified in this study. Further quantitative research should prove the propositions in our conclusions with the use of our developed checklist.

The influence of the personal component on what types of adaptations are most suitable for an elderly should be further explored. The personal component represents an individual’s behavior and capacities to perform daily activities in an environmental setting (Iwarsson, 2004). Our individual behavioral capacity could be divided into three interdependent types of behavior; physiological behavior (physical fitness); cognitive behavior (a person’s mental health); and emotional behavior (an individual’s mood and state of mind) (Bitner, 1992; Morrison and Newell, 2012; Lee et al., 2013). Aging increases the likelihood of apparent diseases and a decline of behavioral capacity (Morrison and Newell, 2012). A declining behavioral capacity leads to functional limitations in carrying out daily activities (Morrison and Newell, 2012).

After applying adaptations to the residences of elderly people the elderly should be monitored. At the end of the monitoring period an evaluation should determine whether the elderly are satisfied and are able to cope with the adaptation, and whether the adaptation(s) helped in being or becoming independent.

There should also be a cost analysis made. The costs of the adjustments must be weighed against the costs of home care. The substituted home care services should be weighed against the costs of the adaptation(s).

The opportunities of adaptive means should continuously be monitored. An upcoming change in generation of elderly, with their own vision and abilities to cope with the adaptive means, together with the ongoing development of (sophisticated) adaptive means, will modify demand and supply for adaptations.

During empirical research it appeared that next to the design and lay-out related disruptions, there are also other sorts of disruptions regarding residential living present in the elderly’s residence. For example, safety, lighting, and hygiene related problems were mentioned and/or observed. To enable independent living even more, further research should assess the residence on such problems and come up with suitable opportunities for adaptations.

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Annex

- A. Observation sketch, transcript interview, and observation report of one of the elderly

- B. Transcript interview with household caregivers

- C. Transcript Dhr. Van Der Vorst Director Home Healthcare Solutions Philips

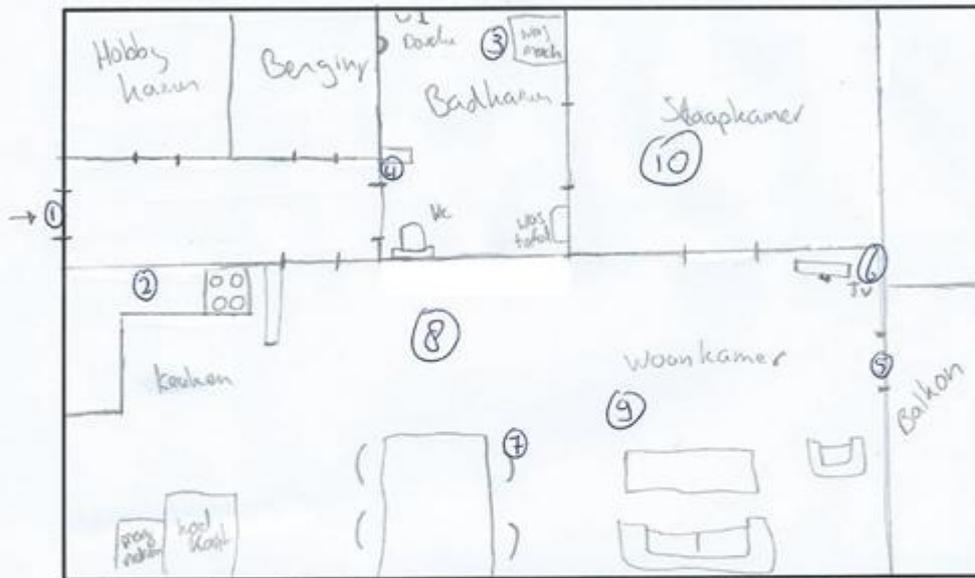
A

Observation sketch (first floor)

Name user of residence: Mevr M Place: Ommen

Age: 80 Type of residence: Aanleunwoning (1^{ste} verdieping)

Gender: m/v Date of observation and time: 7/11/2014 9³⁰ 12hr.



Obstructions ground floor:

1. Er is een dubbele opstap bij het entree. Wat lastig voor de ouderis
2. De kastjes in de keuken boven het aanrecht zijn wat aan de hoge kant
3. Mevrouw heeft moeite met wasmachine in-uit pakken. Is aan lage kant.
4. Handvat bij toilet, is wat ver van het toilet geplaatst. Moeilijk haalt zetten.
5. Opstapje naar buiten is aan de hoge kant
6. De gordijnen zijn lastig dicht te doen. Langwerpig, en wat stroef.
7. Eettafel staelen zijn zuur, lastig te ver plaatsen.
8. Door vochtigheid is vloer wat uitgaan zetten (Hout). Onveelzeker ont staan, mogelijk struikel object.
9. Vloer kleed is wat hoogvorig. mogelijk struikel object
10. Slaaphamer is volgepakt. Licht me niet bevorderlijk voor ♣ mobiliteit.

Transcript mevrouw M. 7 november 2014

Diepte-interview

Introductie

- 1 Wat verstaat u onder zelfstandig wonen?

Mevrouw M.: "Dat je je nog goed zelf kan redden. Dat je alles zelf nog kan doen. Met hulp vind ik iets minder zelfstandig. Maar over het algemeen als je op je zelf woont, met eventueel hulp vind ik nog wel zelfstandig. Althans, dat dacht ik wel ja..."

- 2 Als er bij de uitvoer van dagelijkse activiteiten gebruik wordt gemaakt van hulpbehoevende middelen, beschouwd u dit dan nog steeds als zelfstandig wonen?

Mevrouw M.: "Ja, nee, dat vind ik wel nog zelfstandig. Maar met de hulp die ik krijg trouwens komt wel vaak een ander team.. maar goed.. ik ben niet eenzaam maar wel alleen. Ik krijg geregeld volk over de vloer."

- 3 Heeft de transitie van de zorg naar de gemeenten per 1 januari 2015 gevolgen voor uw huishoudelijke hulp? Zo ja, wat verandert er en wat zijn hier de gevolgen van?

Mevrouw M.: "Ow.. daar ben ik niet van op de hoogte. Ow, wacht daar kreeg ik onlangs een strookje van gehad, maar ik weet niet wat er dan gebeurt. De hulp houdt je wel gewoon hoorde ik. Of de tijd gelijk blijft weet ik niet, nog niets van gehoord."

Dagelijkse activiteiten

Deze vragen aangaande de dagelijkse activiteiten zijn overgenomen en aangepast van de GARS-meetmethode (Kempen *et al.*, 1993). De GARS-meetmethode onderzoekt de zelfstandigheid van de respondent in de uitvoer van dagelijkse activiteiten op dat moment.

- 1 Kunt u, geheel zelfstandig, in en uit bed komen?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Jawel, dat lukt nog wel. Ik had nog niet zo lang geleden dat ik door het bed zakte. Maja.. nee maar ik kan m'n bed omhoog doen waardoor ik makkelijk kan uitstappen. De achterkant doe ik ook omhoog als ik op bed lig, want dat is goed voor de bloed doorstroming."

En voor later als het minder wordt?

Mevrouw M.: "Tja, ik zou niet weten wat dan mogelijk is.."

- 2 Kunt u, geheel zelfstandig, vanuit een stoel overeind komen?
- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
 - B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite**
 - C Ja, dat kan ik geheel zelfstandig, maar met veel moeite
 - D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Ja, ik heb daar vooraan ook een stoel met een knopje daarvoor."

En vanuit de eetkamer stoelen?

Mevrouw M.: "Ja, nou die stoelen zijn zo zwaar, maar op staan lukt prima."

En voor later?

Mevrouw M.: "Ja, wat lichtere stoelen, maar de hoogte is goed. De tafel is trouwens ook zwaar, maar staat vast tegen de muur aan."

- 3 Kunt u, geheel zelfstandig, uw gezicht en handen wassen (scheren, haren kammen)?
- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
 - B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite**
 - C Ja, dat kan ik geheel zelfstandig, maar met veel moeite
 - D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Ja, gaat prima. Ik ga naar de sport, en dan douche ik daar, en kam ik zelf m'n haar wel en zo."

En voor toekomst wat zou u kunnen helpen?

Mevrouw M.: "Ja, dan denk ik dat ik wel hulp nodig heb, maar dan moet ik denk ik ook wel naar de overkant (verzorgingstehuis)."

- 4 Kunt u, geheel zelfstandig, uw hele lichaam wassen en afdrogen?
- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
 - B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite
 - C Ja, dat kan ik geheel zelfstandig, maar met veel moeite**
 - D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “Nou, dat wordt wel lastig. Ik krijg af en toe daar ook wel hulp bij. Hele lichaam wassen lukt wel, maar afdrogen gaat soms wat moeizaam. Ik ben ook bang dat ik uitglijd, ik leg dan wel zo’n matje er neer en handdoeken, maar ben dan nog wel voorzichtig.”

En voor de toekomst, ik zie dat u al hendels aan de kant heeft?

Mevrouw M.: “Ja klopt, dan zou ik nog wel een stoeltje daar willen hebben. Maar ik ben er wel voorzichtig in en zou wel hulp willen hebben daarvoor.”

5 Kunt u zich, geheel zelfstandig aan- en uitkleden?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “Gaat wat moeizaam. Meestal lukt het met mijn sokken niet helemaal. Ik kan daar ook maar moeilijk bij.”

Zou iets u daarbij kunnen helpen?

Mevrouw M.: “Ja een zuster. Of zo’n apparaatje die me de sokken aantrekt, maar ik zou niet weten of zoiets bestaat.”

En voor de overige handelingen?

Mevrouw M.: “Op een stoel gaan zitten of op bed. En anders iemand die me erbij helpt.”

Mevrouw M.: “Ik heb trouwens ook een keer op de grond gelegen, maar daar wist ik niks meer van. Ineens stonden van die mensen in groene pakken voor me en die zeiden dat m’n suiker te laag was.”

6 Kunt u, geheel zelfstandig, van en naar het toilet gaan?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “Ja kan prima, ik heb ook zo’n hendel voor me.”

En als u kijkt naar de toekomst wat zou dan handig zijn?

Mevrouw M.: “Ja, nou een hendel aan de zijkant zou ook wel fijn zijn dat ik wat makkelijker met beide handen omhoog kan komen.”

7 Kunt u, geheel zelfstandig, eten en drinken?

- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
- B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite
- C Ja, dat kan ik geheel zelfstandig, maar met veel moeite
- D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Ja, dat gaat prima."

En voor de toekomst wat zou u kunnen helpen?

Mevrouw M.: "Nou ik denk dat ik dan met snijden wat last krijg, dat zou dan iemand voor mij moeten doen."

8 Kunt u, geheel zelfstandig, rond- lopen in huis (eventueel met stok o.i.d.)?

- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
- B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite
- C Ja, dat kan ik geheel zelfstandig, maar met veel moeite
- D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Ja gaat prima, ik kan alleen wel steeds minder de voeten optillen, ik zit een beetje te sloffen. Maar ik loop ook nog bijvoorbeeld nog naar het centrum (800 meter verderop) voor een bakkie koffie."

Wat zou u in de toekomst kunnen helpen?

Mevrouw M.: "Nou de houten vloer zet wat uit, wat oneffenheden in. Daar zou ik eigenlijk een laminaat vloer moeten hebben zodat het wat meer gelijkvloers is."

9 Kunt u, geheel zelfstandig, de trap op en aflopen (indien van toepassing)?

- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
- B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite
- C Ja, dat kan ik geheel zelfstandig, maar met veel moeite
- D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Oohw, dat vind ik wel lastig. Ik kan het wel en durf het wel, maar ze raden het me af en we hebben hier een lift dus meestal ga ik met de lift."

Wat zou u hier bij kunnen helpen?

Mevrouw M.: "De treden wat minder hoog en iets verder uit elkaar, want ik kan mijn voeten niet goed optillen."

Instrumentele dagelijkse activiteiten

10 Kunt u, geheel zelfstandig, de telefoon, de televisie en overige elektronische apparaten gebruiken?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Lukt nu wel prima, want ik heb grotere toetsen gekregen op telefoon en afstandsbediening van de televisie. Magnetron gebruik ik alleen voor het opwarmen. Gelukkig lukt me dat nog wel."

En u hebt dus al wat aanpassingen daarvoor gedaan, zijn er nog meer dingen die u voor later zou willen veranderen?

Mevrouw M.: "Nou ik zou niet weten wat. Dus nee dan bel ik mijn kinderen wel."

Mevrouw M.: "Ik heb op mijn telefoon niet dat als ik een telefoontje gemist heb dat ik dan kan zien wie er gebeld heeft. Maar dan bellen ze wel terug."

11 Kunt u, geheel zelfstandig, ontbijt of lunch klaarmaken?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: "Ja lukt me prima. Nou tenminste nog niet hulp bij nodig."

En voor de toekomst?

Mevrouw M.: "Ja, voor de houdbaarheidsdatum controleren ze me regelmatig, dus daar krijg ik al een beetje hulp bij. Ik kan het ook lastig lezen die kleine lettertjes."

12 Kunt u, geheel zelfstandig, warm eten klaarmaken?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “Ik krijg inmiddels al een tijdje van OKO (maaltijdservice) maaltijden aangeleverd tussen de middag, en daar ben ik zo aan gewend geraakt dat ik dat eigenlijk niet meer doe.”

Maar zou het u nog wel lukken?

Mevrouw M.: “Af en toe een pannenkoekje bakken lukt nog wel, maar ik ben er zo aan gewend dat ik het ook niet meer doe.”

Huishoudelijke activiteiten

13 Kunt u, geheel zelfstandig, “lichte” huishoudelijke werkzaamheden verrichten (bijv. stof afnemen of prullen ruimen)?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “Ja, dat lukt me nog wel. Bukken lukt me nog wel.. tot nou toe. Ik heb ook een kruimeldief als er kruimels liggen of zo..”

En voor de toekomst?

Mevrouw M.: “Ja dan moet ik er wat hulp bij krijgen, ik heb al een kruimeldief en kan nog bukken. Maar om dan iets op te rapen lijkt me zo’n stok wel handig (grijpstok).”

14 Kunt u, geheel zelfstandig, “zware” huishoudelijke werkzaamheden verrichten (bijv. dweilen, ramen lappen of stofzuigen)?

A Ja, dat kan ik geheel zelfstandig zonder enige moeite

B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite

C Ja, dat kan ik geheel zelfstandig, maar met veel moeite

D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “Nee, daar krijg ik ook hulp voor he.”

Zou u dat nog zelf lukken denkt u?

Mevrouw M.: “Nee, nee, dat is me te zwaar vooral ramen lappen zou ik echt niet meer kunnen, krijg ik last van rug en schouders.”

Mevrouw M.: “Ik krijg trouwens ook nog hulp voor de planten, eerder toen ik in de nering bogelstraat woonde kreeg ik hulp voor de tuin van de buurman. En deze komt zo nu en dan hier ook nog langs om de plantenbakken te verzorgen.”

- 15 Kunt u, geheel zelfstandig, uw kleren wassen en strijken?
- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
 - B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite
 - C Ja, dat kan ik geheel zelfstandig, maar met veel moeite**
 - D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “De was in de wasmachine doen doe ik zelf. Is wel wat lastig, is wat laag namelijk, maar lukt me nog wel prima. Strijken lukt me ook nog wel, ik word wel wat stram. Vooral die beweging die je maakt, krijg ik wat last van de schouder.”

En wat zou u helpen?

Mevrouw M.: “De hulp doet het wel als die er tijd voor over heeft. Die wil alles altijd wel doen, heel fijn..”

En als u kijkt naar hulpmiddelen?

Mevrouw M.: “Ik weet niet waar ik dan aan zou moeten denken, maar een stoel en een wat lagere plank zou misschien wel wat zijn.”

- 16 Kunt u, geheel zelfstandig, de bedden verschonen en/of opmaken?
- A Ja, dat kan ik geheel zelfstandig zonder enige moeite
 - B Ja, dat kan ik geheel zelfstandig, maar wel met enige moeite
 - C Ja, dat kan ik geheel zelfstandig, maar met veel moeite**
 - D Nee, dat kan ik niet zelfstandig, maar alleen met hulp van anderen

Mevrouw M.: “Nou dat doen we meestal samen. Ik heb nogal een dikke matras en dan vind ik het lastig om de hoes eromheen te krijgen. Meestal doet de hulp dan de ene kant en ik de andere. Maar als het echt moet zou het nog wel lukken denk ik.”

Afsluitend

Hebt u verder nog activiteiten in uw woning waar u moeite mee heeft of verwacht moeite mee te krijgen in de toekomst? Zo ja, wat kan er in uw woning worden aangepast om deze (verwachte) belemmering te overkomen?

Veiligheid

Mevrouw M.: “We hebben zo’n telefoon om te horen wie er voor de deur staat, maar geen scherpje dus ik kan niet zien wie het is. Ik zou me wel veiliger voelen met zo’n scherpje.. maar ja

lijkt me nogal duur. Ze hebben het er al wel over gehad om beneden een camera te plaatsen, maar dat is nog afwachten.”

Mevrouw M.: “Ze hebben hier ook geregeld s’ nachts aangebeld, waarschijnlijk kwajongens, dus dan doe ik s’ nachts de bel eraf zodat ik hier niet van wakker wordt. Maar ik voel me wel veilig hier.”

Licht

Mevrouw M.: “Ja echt genoeg licht. Misschien wel wat te veel zelfs.”

En snachts als u eruit moet?

Mevrouw M.: “Ik heb een nachtlampje dat er voor zorgt dat ik de lichtknop kan vinden en ik heb er ook een direct naast het bed.”

Temperatuur

Mevrouw M.: “De temperatuur is prima, ik weet niet eens hoe hoog die staat, maar als het koud is doe ik hem hoger en warm is doe ik hem lager.”

Verder nog belemmeringen in uw woning?

Mevrouw M.: “Ja voor het lezen gebruik een loep en ik heb ook een lees liniaal die mij hierbij helpt.”

Mevrouw M.: “De gordijnen zijn tot aan de grond, en die is soms nog wel wat lastig dicht te krijgen.”

Mevrouw M. is een vriendelijke vrouw. Ze heeft suikerziekte en krijgt hier medicijnen voor. Vroeger heeft mevrouw een slijmbeursontsteking gehad, waardoor ze nu nog last heeft van haar schouder. Ook het lopen gaat wat moeilijk. Mevrouw loopt rustig met kleine pasjes, en geeft ook aan dat als het donker is ze wat ongecoördineerd is. Dit kan zijn door haar evenwichtsstoornis en/of het achteruitgaan van haar zicht. Mevrouw M. is een sociaal persoon die graag onder de mensen is en het nodige nog onderneemt (waaronder lid van zangkoor en bijna dagelijks op de koffie bij anderen).

Wat meteen op valt in de woning van mevrouw M. is dat er een dubbele opstap is bij het entree van de woning. Deze opstapjes zijn ook nog is smalle treden, wat hetgeen tot een struikelobject maakt. Ook voor de toekomst als mevrouw een rollator zou willen gebruiken is dit niet praktisch.

In de keuken heeft mevrouw de kastjes behoorlijk hoog hangen. Ze kan hier ook moeilijk bij, deze zouden wat verlaagd moeten worden of elders geplaatst moeten worden.

De wasmachine in de badkamer staat op de grond, waardoor deze voor mevrouw wat lastig te gebruiken is. Ze moet bukken en reiken, wat met haar gezondheid niet van harte gaat. De tegels in de badkamer zijn glad als deze vochtig worden. Mevrouw heeft wel een antislip mat, maar geeft aan de nodige handdoeken te moeten gebruiken om de tegels droog en dus "on-glad" te maken. Het toilet in de badkamer is voorzien van een handvat. Echter dit handvat is wat ver van het toilet af. Hierdoor is het lastig kracht zetten om overeind te komen. Het zou bevorderlijker zijn om steunen aan de zijkant van het toilet te plaatsen.

Mevrouw geeft aan dat ze het liever niet heeft dat ondergetekende foto's maakt van de slaapkamer en badkamer. Dit komt omdat ze daar naar eigen zeggen een troep had liggen, wat ook het geval was. Mevrouw heeft de nodige dingen op de grond liggen als boeken, handdoeken, poppen, et cetera. Deze objecten kunnen voor de mobiliteit in de woning een obstructie zijn.

Aan de kant van het balkon valt op dat er een relatief hoge opstap is naar het balkon toe. Dit is een struikelobject. Tevens is aan deze zijde de ramen voorzien van lange gordijnen. Deze zijn zwaar en kosten voor mevrouw enige moeite om ze te gebruiken. In de woonkamer ligt een hoogpolig vloerkleedje dat een mogelijk struikelobject is. De parketvloer in de woonkamer is door vochtigheid gebogen en gebarsten. Sommige spleten komen overeind wat het geheel niet meer egaal maakt. Dit zorgt ervoor dat de vloer voor de minder mobiele mevrouw M. een mogelijk struikelobject is.

Achter aan de eettafel heeft mevrouw een viertal stoelen staan. Dit zijn ouderwetse stoelen die een behoorlijk gewicht met zich meebrengen. Deze stoelen zijn voor mevrouw lastig te verplaatsen, vanwege last in haar schouder. Een lichter alternatief zou voor mevrouw op zijn plaats zijn.

Tijdens het gesprek bleek dat mevrouw M. haar deurbel had gedeactiveerd. Mevrouw doet dit voor het slapen gaan omdat er s'nachts nog wel is wordt aangebeld door onbekenden. Bij incidenten (brand o.i.d.) is dit voor haar veiligheid niet aan te raden.

Je merkt aan de woning en aan mevrouw M. dat zij behoefte heeft aan gezelligheid en knusheid in de woning. Ze heeft dit vorm gegeven door haar woning te voorzien van de nodige spullen. Dit is echter niet al te bevorderlijk voor haar mobiliteit door de woning heen. Er bevinden zich de nodige struikelobjecten. Sommige kunnen eenvoudig worden opgelost door bijvoorbeeld, opruimen van

spullen van de vloer, lichtere eettafel- stoelen en het wegnemen van drempels. Andere obstructies zijn lastiger te overkomen als de beschadigde pakketvloer, de gladde tegels in de badkamer, en de kastjes in de keuken.

Het blijkt wel dat er bij mevrouw nog het nodige veranderd kan worden in de woning om de zelfstandigheid te bevorderen en te veraangemen.

B

Transcript van interview met huishoudelijke hulpverleners

Tijdens het gesprek zijn de nodige onderwerpen aangaande ouderenzorg besproken. Als gezegd, is ook het uitgangspunt van dit interview de dagelijkse activiteiten van de GARS-methode geweest. Per dagelijkse activiteit vindt u hieronder de gerelateerde uitspraken. Tevens wordt in de categorie "Overig" uitspraken genoteerd die ook van toepassing kunnen zijn op dit onderzoek of op een aansluitend onderzoek.

Dagelijkse activiteiten

1 Welke belemmeringen ziet u bij ouderen aangaande het in en uit bed komen?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Sommige hebben die ouderwetse bedden en die zijn veel te laag, maar die willen ook niet anders. Over het algemeen moet ik zeggen dat de bedden wel goed zijn."

Wat schort eraan bij die ouderwetse bedden?

Huishoudelijke hulpverlener: "Ze zijn wat laag en soms ook helemaal doorgezakt, dan hebben ze wel moeite om eruit te komen."

2 Welke belemmeringen ziet u bij ouderen aangaande het vanuit de stoel overeind komen?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Sommige hebben van die nieuwe stoelen en sommige van die oudere. En die oude zijn over het algemeen wel zwaar."

Is de hoogte van die stoelen wel goed?

Huishoudelijke hulpverlener: "Ja, ze zijn er aan gewend he.. Soms zie je ze wel moeizaam overeind komen, dan kan een hogere stoel wel een uitkomst zijn."

3 Welke belemmeringen ziet u bij ouderen aangaande het gezicht en handen wassen (scheren, haren kammen)?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Ja je kunt er hulp voor krijgen he. Want soms kunnen ze de armen wat moeilijker heffen en dan is er meestal hulp om ze daarbij te helpen."

Huishoudelijke hulpverlener: "Geen idee wat erbij kan kunnen helpen." "Ik ook niet".

4 Welke belemmeringen ziet u bij ouderen aangaande het lichaam wassen en afdrogen?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "De vloeren zijn vaak glad. Het is makkelijk schoon te houden van die tegels, maar voor de ouderen is het een crime."

Wat zou hier een oplossing voor zijn?

Huishoudelijke hulpverlener: "Nou, je hebt wel van die anti-slip tegels, of anti slip matje.. Dat zijn wat grovere tegels waar je grip op hebt".

En bij het afdrogen?

Huishoudelijke hulpverlener: "Ja, ze kunnen niet altijd overal even goed bij."

Wat zou daarbij kunnen helpen?

Huishoudelijke hulpverlener: "Nou ze moeten gaan zitten, want ze blijven dan eigenwijs staan en voor dat je het weet kukelen ze voorover."

Huishoudelijke hulpverlener: "Ja, ik denk dat een stoeltje in de douche, wel een ruwe zodat ze niet wegglijden, wel handig kan zijn."

5 Welke belemmeringen ziet u bij ouderen aangaande het aan- en uitkleden?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Ja ze kunnen bepaalde bewegingen niet meer maken (mevrouw doet voor het strekken van armen), waardoor shirtjes en ook sokken aantrekken wat moeilijk gaat."

Huishoudelijke hulpverlener: "Ze blijven soms ook nog staan met aankleden. Overmoedig want dan staan ze zo wankel als wat.. dus ze moeten gewoon gaan zitten en voor de sokken (en soms steunkousen) zouden ze hulp moeten krijgen."

Kan dat ook met een hulpmiddel?

Huishoudelijke hulpverlener: "Ja je hebt wel van die ruwe handschoenen om die steunkousen aan te trekken, maar als ze ouder worden komen ze er niet meer bij en dan heb je toch hulp nodig."

6 Welke belemmeringen ziet u bij ouderen aangaande het naar het toilet gaan?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Je ziet vaak dat de wc in de badkamer zit bij aanleunwoningen. Het is toch prettiger voor de ouderen dat het toilet apart zit, in verband met de geur enzo."

En als je kijkt naar het toilet zelf, hoogte en steunen?

Huishoudelijke hulpverlener: "Ja, dat verschilt nogal.. de één past het wel aan de ander niet. Je ziet wel steeds vaker steunen"

Welke aanpassingen kunnen helpen bij een toiletbezoek?

Huishoudelijke hulpverlener: "Nou, een verhoogd toilet of van die hendels aan de zijkant".

Huishoudelijke hulpverlener: "Je komt ook geregeld hele kleine toiletten tegen, dan kunnen ze echt moeilijk gaan zitten en omdraaien om door te spoelen. Ik denk dat een handvat plaatsen in zo'n toilet soms niet eens past."

7 Welke belemmeringen ziet u bij ouderen aangaande het eten en drinken?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Je ziet vaak dat ze op een dienblad hun kopjes en bordjes meenemen. Het is altijd maar de vraag of dat goed gaat"

En als jullie kijken naar het eten en drinken zelf?

Huishoudelijke hulpverlener: "Ja je ziet ze vaak martelen met snijden, en dan valt er weer wat, en dan stappen ze erop, en zit er weer een vlek."

Huishoudelijke hulpverlener: "Sommige hebben ook dat ze trillen met de handen en weinig kracht in de armen hebben. Volgens mij is het voor hun soms best vermoeiend dat eten"

En wat zou hieraan bij kunnen dragen?

Huishoudelijke hulpverlener: "Ja aangepast bestek."

Huishoudelijke hulpverlener: "Of dat iemand ze gaat helpen voeren."

8 Welke belemmeringen ziet u bij ouderen aangaande het rond- lopen in huis?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "De doorgangen bij meneer A zijn te smal, hij kan met zijn rollator niet goed overal langs. Dat zie je over het algemeen wel, dat die oudere woningen de doorgangen heel smal hebben. Bij de aanleunwoningen is dit veel beter voor mekaar."

Huishoudelijke hulpverlener: "In die oude woningen zie je ook bijna geen handvaten of zoiets aan de muur zitten, ze kunnen zich nergens aan vast houden."

Huishoudelijke hulpverlener: "Ook zie je dat ze moeilijk naar boven kunnen komen, doordat ze moeilijk hun benen kunnen optillen, je ziet maar heel weinig van die liftjes, dat zou wel handig zijn. En alles hebben ze zelf ook niet op de begane grond, dus moeten ze wel naar boven."

Huishoudelijke hulpverlener: "Een oplossing zou zijn een liftje of iemand die hun helpt naar boven te komen, maar goed.. over het algemeen kiezen zij er dan voor om te verhuizen naar een gelijkvloerse woning. Als er wat beschikbaar is, want voordat ze ergens terecht kunnen is het meestal al een flinke tijd later."

Huishoudelijke hulpverlener: "Je ziet ook vaak bij de ouderen die nog apart wonen dat de woning moeilijk toegankelijk is met de rollator, ook zie je nog vaak drempels".

Huishoudelijke hulpverlener: "Nieuwe huizen zijn meestal al wel gelijkvloers, zonder drempels en de doorgangen zijn hoger en breder."

Huishoudelijke hulpverlener: "Het zou helpen als het allemaal wat meer gelijk vloers is en dat de vloer bedekt is met pvc. Dit is een soort parket maar is niet glad. Want hoogpolige vloerbedekkingen is levensgevaarlijk. Echt een struikel object."

Huishoudelijke hulpverlener: "Ik had laatst nog tegen een vrouw gezegd dat ze een los vloerkleedje wat ze heeft, moest weg doen. Want doordat je het wast en droogt gaat ie helemaal krom staan. En daar kan ze dan zo over vallen. Zegt ze (de oudere) ohh nee ik val niet.. jaja en volgende keer ligt ze daar zeker."

9 Welke belemmeringen ziet u bij ouderen aangaande het trap lopen?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Oee, ja.. als er een lift is dan gebruiken ze die. Trap lopen doen ze liever niet. Stel dat er in die complexen brand is dan is er echt een probleem."

En wat is het probleem dan bij die trappen?

Huishoudelijke hulpverlener: "Te stijl, en de ouderen durven niet alleen van de trap af, bang dat ze vallen."

Huishoudelijke hulpverlener: "Ik had een zwager verloren en die moest omhuld in een laken naar beneden worden gedragen op de trap. De kist kon gewoon niet van de trap af."

Huishoudelijke hulpverlener: "Bouwtechnisch zijn verschillende woningen niet goed gebouwd, want de ambulance en zo kan inderdaad maar moeilijk bij ouderen komen als er iets gebeurt. Daar zouden ze eigenlijk bij het bouwen al aan moeten denken."

Huishoudelijke hulpverlener: "Soms zit er ook een draai in de trap en dan vraag ik me wel is af hoe ze dat doen. Lijkt me lastig voor hun als je wat minder te been ben, gezien je kleiner oppervlak hebt om je voet neer te zetten."

Instrumentele dagelijkse activiteiten

10 Welke belemmeringen ziet u bij ouderen aangaande het gebruiken van de telefoon, televisie, magnetron en overige elektronische apparaten?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Sommigen kunnen er wel goed mee om gaan en anderen niet. Mevrouw... kan totaal niet met de magnetron om gaan."

En wat is daar de oorzaak van?

Huishoudelijke hulpverlener: "Ja zeg het maar, ze zegt ik krijg het niet voor mekaar. We hebben op de magnetron een omschrijving van hoe ze het moet gebruiken geplakt, maar dan nog lukt het haar niet. Ik denk angst voor het onbekende. "

En telefoons, televisie,...?

Huishoudelijke hulpverlener: "Ja je hebt speciale telefoons ervoor he, met van die grote knoppen. Dan staat onder 1 bijvoorbeeld de dochter, en onder 2 de huisarts. Dat is meestal wel goed geregeld bij ouderen hoor. Alleen als ze in gezelschap zijn dan kunnen ze het niet goed horen. Een telefoon filtert dat geluid niet he. Maar goed dat is niet anders."

Huishoudelijke hulpverlener: "De televisie kunnen ze wel goed gebruiken want dat hebben ze al jaren en daar zijn ze aan gewend. Als ze weer een ander apparaat krijgen zal het eerst wel weer heel moeizaam gaan."

11 Welke belemmeringen ziet u bij ouderen aangaande het ontbijt of lunch klaarmaken?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Ik had onlangs bij een mevrouw die had koffie gezet en toen wou ze dat wel even met dienblad naar de tafel brengen. En ze had sloffen aan en heeft parket.. ik dacht dat gaat nooit goed.. maar ze heeft het al glijdend gehaald."

Huishoudelijke hulpverlener: "Ja oplossing zou zijn zo'n pvc vloer, dat is veel minder glad. Ja of dat ze het op een karretje zetten en naar de tafel kunnen rijden."

Huishoudelijke hulpverlener: "Ik vind de kastjes ook erg hoog, ik snap soms niet hoe ze de spullen pakken. Echt niet handig soms."

Huishoudelijke hulpverlener: "Ik had onlangs wel dat een vrouw een trapje pakte, en wat uit een kastje pakte. Zes keer gezegd niet doen.. maar eigenwijs he."

Wat zou hier een oplossing voor zijn?

Huishoudelijke hulpverlener: "Lagere kastjes en trapje verstoppen. Maar ja daar moet dan ook wel ruimte voor zijn (kastjes lager)."

Huishoudelijke hulpverlener: "Wat je soms ook nog ziet is vloerbedekking in de keuken. Dat is echt smerig soms. En dan zeggen ze dat ze niets laten vallen.. maar als ik dan weer kom dan is er weer een vlek bij.. en dat is echt moeilijk weer schoon te krijgen".

Wat zou een oplossing hiervoor zijn?

Huishoudelijke hulpverlener: "Een zeilvloer, is makkelijk schoon te houden. Dweil erover en klaar."

12 Welke belemmeringen ziet u bij ouderen aangaande het warm eten klaarmaken?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "De keuken loopt bij veel mensen niet door. Tussen het aanrecht en het gasstel zit dan een stukje tussen. Dit is voor de oudere niet handig en ook voor het schoonhouden niet praktisch."

Huishoudelijke hulpverlener: "Je ziet vaak ook een verouderd gasstel. Dit is brandgevaarlijk, ze kunnen beter zo'n plaat hebben."

Bedoelt u hiermee een elektrisch kookstel of inductie kookstel?

Huishoudelijke hulpverlener: "Ja ze zeggen dat inductie direct koud is, maar als ik zelf kook vind ik het wel prettig als het nadat ik het gas uitdraai dat de pan dan nog wat warmte krijgt. Dus ja, voor de veiligheid misschien wel maar voor het koken zelf niet lijkt mij". (anderen denken hier net zo over)

Huishoudelijke hulpverlener: "Maar gaspit is echt een dikke bende. De ouderen gooien er echt veel overheen en als je dan 1 keer in de week langskomt om schoon te maken..."

Huishoudelijke activiteiten

13 Welke belemmeringen ziet u bij ouderen in de woning aangaande “lichte” huishoudelijke werkzaamheden (stoffen, prullen ruimen, etc.)?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: “Nou in sommige woningen mag je wel een trap meenemen om te kunnen stoffen. Vooral de oude woningen hebben nog van die hoekjes waar je heel moeilijk bij komt”.

Wat zou hier een oplossing voor zijn?

Huishoudelijke hulpverlener: “De kastjes zijn soms wel erg hoog. De bovenste vakken gebruiken ze daar toch niet van dus die dingen kunnen best wel wat verlaagd worden of verkleind worden.”

Huishoudelijke hulpverlener: “Sommige ouderen hebben zoveel tierelantijnen op de grond en in de vensterbank staan. Dat is verschrikkelijk irritant voor het stofzuigen en het stoffen.”

Huishoudelijke hulpverlener: “Wat ook irritant is is een glasplaat. Sommige hebben een glasplaat tafel en die maak je dan schoon. En meestal voordat je weer weg gaat kan je er alweer een doekje over heen halen, die dingen worden erg snel smerig.”

14 Welke belemmeringen ziet u bij ouderen in de woning aangaande zware huishoudelijke werkzaamheden (dweilen, ramen lappen of stofzuigen)?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: “Sommige ouderen hebben zoveel tierelantijnen op de grond en in de vensterbank staan. Dat is verschrikkelijk irritant voor het stofzuigen en het stoffen.”

Huishoudelijke hulpverlener: “Ja, ze zouden eigenlijk veel meer moeten opbergen, want ik weet zeker dat meer dan de helft van de spullen niet meer wordt gebruikt.”

Is er genoeg ruimte in de woning om dit op te bergen?

Huishoudelijke hulpverlener: “Ja, meer dan zat, ze hebben meestal meerdere opbergkastjes, bergingen en zo.. en vaak ook nog een schuurtje waar ze alles wel kwijt kunnen.”

Huishoudelijke hulpverlener: “Dat hoogpolige vloerbedekking is ook wel zwaar stofzuigen. Het ziet er vaak wel mooi uit maar is wel lastiger schoon te houden. Vooral als het ook nog is in de keuken ligt.. maar goed.”

Huishoudelijke hulpverlener: “In de douche is het voor hun veiligheid die ruwe tegels wel nodig, maar voor het schoonmaken moet je dan goed schrobben om ze schoon te krijgen.”

15 Welke belemmeringen ziet u bij ouderen in de woning aangaande het kleren wassen en strijken?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Je ziet soms dat ze van die vlekken in de broek hebben, en dan denk ik ziet de familie dat niet of hunzelf."

Huishoudelijke hulpverlener: "Ze hebben wel is moeite om de kleren in en uit de wasmachine te halen. Maar daar heb je wel wat voor, mijn dochter bijvoorbeeld heeft de wasmachine zo hoog staan (mevrouw laat ongeveer 30cm van de grond zien), en dat zou voor sommige ouderen ook wel ideaal zijn. Dat zie je nu eigenlijk nog niet."

Huishoudelijke hulpverlener: "Strijken doe ik meestal als ik bij de ouderen ben, want dat doen ze gewoon niet meer."

Lukt dat of kunnen ze dat niet meer?

Huishoudelijke hulpverlener: "Ja, ja, ik denk beiden eigenlijk, en ik denk dat ze er ook aan gewend zijn geraakt dat wij het doen."

Huishoudelijke hulpverlener: "Ja denk ik ook, ze kunnen die strijkbeweging ook niet zo goed meer maken denk ik."

Huishoudelijke hulpverlener: "Ja, en wat kan je daaraan doen... geen idee."

Huishoudelijke hulpverlener: "Ze weten vaak ook niet hoe ze de wasmachine moeten zetten of vergeten wat al gedaan is en wat niet."

Huishoudelijke hulpverlener: "Bij dementerende ouderen ook, dan hebben ze bijvoorbeeld al het bed afgehaald, terwijl je dat de vorige keer al had gedaan.. maar dat geeft niet."

16 Welke belemmeringen ziet u bij ouderen in de woning aangaande het bedden verschonen en/ of opmaken?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om deze belemmering weg te nemen of de uitvoer van deze activiteit te bespoedigen?

Huishoudelijke hulpverlener: "Ze kunnen nog wel het bed afhalen maar erop leggen vinden ze over het algemeen wat lastig. Soms ook met van die dikke matrassen, maar dan doen we dat wel samen."

Huishoudelijke hulpverlener: "Daar hebben ze dan wel hulp bij nodig ja.. maar dat kan ook niet anders volgens mij."

Overig

Veiligheid

Welke belemmeringen ziet u bij ouderen in de woning aangaande de veiligheid?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om de belemmering weg te nemen of de veiligheid bevorderen?

Huishoudelijke hulpverlener: "Ze hebben bij de complexen meestal een centrale ingang, en als je aan belt moeten ze de telefoon opnemen. Vaak zie je dat ze gewoon op de knop drukken zonder te luisteren wie er voor de deur staat. Het handigst zou zijn dat ze een beeldschermje hebben."

Huishoudelijke hulpverlener: "Volgens mij zien ouderen het gevaar niet. Ze zijn vaak te goeder trouw. Vroeger was het ook heel normaal dat je de deur open liet, en dat doen ze soms nog steeds."

Huishoudelijke hulpverlener: "De ouderen hebben vaak ook een alarmknopje om, die ze kunnen indrukken als er iets is. Vaak zie je dat ze die overal laten slingeren en als ze vallen dat geval nog een stuk verderop ligt."

Zou hier iets anders kunnen helpen?

Huishoudelijke hulpverlener: "Ja maar wat?"

Een bewegingscamera?

Huishoudelijke hulpverlener: "Ja op zich is dat wel wat, maar dan zit je weer met privacy he."

Klopt, dat is de afweging die je dan maakt.

Temperatuur

Welke belemmeringen ziet u bij ouderen in de woning aangaande de temperatuur?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om de belemmering weg te nemen of om de temperatuurbeheersing te bevorderen?

Huishoudelijke hulpverlener: "Nou, dat verschilt nogal. De ene keer kom ik in 25graden binnen en de andere keer in 17 graden. Dan draai ik het zelf wel even naar 19."

Huishoudelijke hulpverlener: "Ik vraag het meestal eerst even, want sommige hebben die warmte van 25 graden juist nodig."

Huishoudelijke hulpverlener: "Ja, nou ik denk dat ze het niet allemaal goed door hebben af en toe. Ze weten niet hoe het werkt of zijn zich niet van de temperatuur bewust."

Huishoudelijke hulpverlener: "Oplossing zou zijn om zo'n tijdschakelaar erop te zetten. S'nachts op 17 en overdag op 19/20 of zo. Dan hoeven ze daar ook niet naar om te kijken."

Huishoudelijke hulpverlener: “Ik denk ook dat als je ouder wordt dat alles wat sneller koud is en gevoeliger. Misschien dat dat ook de reden is dat ze het zo warm maken.”

Verlichting

Welke belemmeringen ziet u bij ouderen in de woning aangaande de verlichting?

Wat is volgens u de oorzaak van deze belemmering?

Wat kan er in de woning worden aangepast om de belemmering weg te nemen of de verlichting te verbeteren?

Huishoudelijke hulpverlener: “Ja, lampen moeten ze zelf regelen. Ik ken ook mensen die hebben een bewegingsmelder. Die man van 94 die heeft dat ook, dat plak je zo op de muur, het enige wat wel is dat die overdag ook aanvliegt, maar dan doe ik hem wel even uit.”

Huishoudelijke hulpverlener: “Als de ouderen s’ nachts uit bed komen zijn ze nog wel is wankel op de benen of met de kop er nog niet goed bij, dan is het wel van belang dat de verlichting goed is. Ik denk dat dat bij sommige nog wel te wensen over laat.”

Huishoudelijke hulpverlener: “Een lichtgevende knop zou ook wel goed zijn voor de ouderen, is denk ik ook wat minder duur als een bewegingssensor.”

C

Transcript Dhr. Leon Van Der Vorst Director Home Healthcare Solutions Philips

Wat was de aanleiding voor uw organisatie om in (2006) de afdeling home healthcare solutions op te richten? En waarom specifiek home healthcare solutions?

Dhr. Van der Vorst: "Nou dat is eigenlijk al een oude wens, ik denk dat dat besluit al zeker 10 jaar geleden is gevallen. De ontwikkeling in de gezondheidszorg is zo dat de mensen steeds meer hun eigen ziektebeeld en behandeling moeten invullen. En dat wordt in de toekomst alleen nog maar nadrukkelijker die eis. Niet alleen vanwege de kosten maar ook omdat deze generatie steeds meer controle wil uit oefenen op alle aspecten van het leven inclusief de gezondheidszorg. Het is een beetje ouderwets principe dat je veel dingen naar eigen maatstaf gaat doen. Heleboel dingen die je toetst zouden mensen ook goed zelf kunnen doen, maar dat kwam eerder nooit bij ons op. We zijn bij Philips zo'n 12 jaar geleden al begonnen om voor ziektebeelden bepaalde algoritmes op te richten. Zodat je op die manier een aantal standaardinterventies alvast kunt wegsluizen van de duurdere ziekenhuiszorg."

Heeft uw organisatie ook al mogelijke interventies op de markt gebracht die de functionele onafhankelijkheid van ouderen bevorderen of hebben jullie daar een beeld van?

Dhr. Van der Vorst: "Ja natuurlijk gaat dat samen; als je langer thuis blijft wonen dan moet je ook mobiel blijven en in staat zijn jezelf te redden. Dit is een belangrijk aspect, maar dat is overigens niet altijd met techniek op te lossen. Dan is het wel vaak de mantelzorg die om de hoek komt kijken als een oudere niet meer in staat is om iets uit te voeren, denk bijvoorbeeld aan het aantrekken van de steunkousen of iets dergelijks."

Gedurende het empirisch onderzoek is gebleken dat voor een deel van de ouderen mantelzorg niet tot de mogelijkheden behoort, de aanleiding van dit onderzoek is ook dat wij enige vraagtekens zetten bij de inzet van mantelzorg bij ouderen.

Dhr. Van der Vorst: "Dat is enerzijds ook terecht, aan de andere kant telt ons land 3 miljoen mantelzorgers. Het is niet zo dat.. ja het gebeurt dus eigenlijk toch heel erg veel. Er zijn ongetwijfeld gevallen dat het niet voor handen is, dat ben ik met je eens. De wijze waarop wij daar ontwikkelingen op plegen is bijvoorbeeld dat wij een app gemaakt hebben. En dat is een tool die artsen kunnen gebruiken om te bepalen in welke mate ouderen zelfzorg kunnen bedrijven. Om zelf te vervullen in hun ziektebeeld. Dat is gewoon een algoritmetje uit met tien balletjes, die zijn dan helemaal rood of een klein beetje rood. Dan kan de arts van te voren bijvoorbeeld al zien of er mantelzorg beschikbaar is.."

Moet ik dat dan zien als dat een medisch specialist het beoordeelt of komt dat dan vanuit het antwoord van ouderen zelf?

Dhr. Van der Vorst: "Het komt vanuit het antwoord van de ouderen zelf maar dat doe je samen met de huisarts. Het is eigenlijk een heel eenvoudig dingetje waarop je visueel in één oogopslag kan zien van, deze mevrouw gaat het wel redden en deze niet. En deze heeft bijvoorbeeld hulp nodig op drie/vier punten en dan gaat het goed komen met haar. Dat is ook een vorm van technologie

introductie, die dan niet zozeer iets klassieks is als een doos met stekkers maar meer een manier van screening waarop je de therapie kan aanpassen.”

Als ik u mag vragen hoe ziet en ervaart u de combinatie technologie en ouderen?

Dhr. Van der Vorst: “Ik zie dat niet als problematisch, er wordt altijd maar stigmatiserend over gedaan dat ouderen niet met technologie om kunnen gaan. Maar het grootste deel van de technologie hoef je ook niet mee om te kunnen gaan. Die heb je gewoon op de achtergrond aanwezig. En signaleert.. de meest simpele voorbeelden zijn bijvoorbeeld een sensor in je huis die registreert of de koelkast deur wel open of dicht gaat, is al een indicatie dat iemand nog gewoon in zijn ritme zit. Maar als je dat combineert bij het matje in de toilet en een bewegingsdetector in de keuken en nog drie/vier punten in huis dan heb je binnen een week een routine in een algoritme gevangen. En elke afwijking daarop kun je op afstand signaleren met een groene, oranje of rode bal. En dan gaat een oudere al nadrukkelijk met technologie om zonder dat die daar echt van bewust is. En de kinderen kunnen op de smartphone zien of het met moeders goed gaat.”

Dergelijke middelen ben ik ook tegengekomen in de literatuur en op het net, maar ik heb die tot noch toe nog niet waargenomen in de woning van ouderen, is dit een stukje onwetendheid of angst voor dergelijke producten?

Dhr. Van der Vorst: “Dat is onwetendheid.. het is zo dat mensen, hoe zou ik het zeggen.. er nog niet naar vragen ook, de mantelzorgers niet.. er is nog weinig “pull” in de markt. Terwijl als je op een verjaardagsfeestje zou zitten, zoals vroeger dat je in een kring zit, en je zou vragen wie er iemand kent die zo oud is waarvan je wel wat vaker zou willen weten hoe het met die persoon is.. nou dan steken er zo een paar de hand op. Dus de behoefte is er wel maar het bewust zijn dat zoiets zou kunnen is er niet. Die kant gaan wij overigens als Philips wel in onze domestic appliances (huishoudelijke middelen) op met het Internet of Things. In het kort wij gaan wel allerlei sensoren inzetten hoor voor hifi en noem maar op in de context van domotica en de algoritmen hierboven benoemd.”

Dus u ziet wel toekomst voor technologie in de woning van ouderen om het zelfstandig wonen van ouderen te bevorderen en te veraangename?

Dhr. Van der Vorst: “Ja, want het dient gewoon vele doelen. Het geeft ook een mooi inzicht in gebruik, en gebruik is weer een leuk onderdeel van die data om daar algoritmes uit op te maken en daar producten op te verbeteren.”

Ik vernam ook op uw website dat u veel waarde hecht aan zorg op afstand. Waaronder telehomecare..

Dhr. Van der Vorst: “Ja dat klopt, ik weet niet welke krant je hebt.. wacht ik heb daar wel een link van.. maar dat artikel gaat over een business- case die wij hebben gedaan met 3 zorgverzekeraars en 6 ziekenhuizen, en daar hebben wij met elkaar vastgesteld dat door processen te optimaliseren rondom de introductie van telehealth, dus telemonitoring oplossing, als je dat goed doet is dat vanuit de ouderen een enorme ziektelast verlichting bereikbaar. Met andere woorden, hun liggen gewoon veel minder in het ziekenhuis en korter, en dat is een business case en die kan je vertalen naar

kosten.. naar schadelast zou de zorgverzekeraar zeggen.. en die hebben we laten doorbereken door een onafhankelijke partij en daar hebben we een publicatie voor..”

U vertelde al dat u samenwerkt met medische specialisten, maar werkt u bij uw productontwikkeling en visie op de markt ook samen met thuiszorginstellingen, gemeenten, en/of een platform van ouderen?

Dhr. Van der Vorst: “Ja, met thuiszorgorganisaties heel nadrukkelijk met een medicatie platform. Maar we hebben niet een platform van ouderen waar we direct in contact mee staan, daar ben ik overigens wel mee bezig, omdat wij eigenlijk veel te weinig met de eindgebruiker een relatie hebben. We hebben wel met eindgebruikers een relatie, maar dus niet in de Healthcare. Wij weten heel aardig wat de eindgebruikers van onze huishoudelijke apparatuur allemaal beleeft, maar we weten eigenlijk heel weinig van wat een patiënt nou eigenlijk zou willen weten.. om de goede vragen te stellen.. daar moeten we wel wat meer werk van maken.”

Dan zou u wellicht ook wel interesse hebben in de resultaten van dit onderzoek.

Dhr. Van der Vorst: “Dat was ook inderdaad mijn laatste vraag geweest.”

Kijk, dan is er een wederzijds belang. Ik verneem zojuist de mail die u hebt verstuurd.

Dhr. Van der Vorst: “Kijk, mooi. De attachment betreft een artikel over Semac. Semac is een zelf management app die wij hebben ontwikkeld. De tweede is het artikel over MEDIDO en de derde is over de publicatie van business case waar ik het over had. We zeggen eigenlijk van, technologie kan ervoor zorgen dat de patiënten stabielere zijn en er op afstand informatie wordt verzameld over de gezondheidstoestand van de patiënt thuis. Dit leidt er toe dat er sneller kan worden ingegrepen als de gezondheidstoestand van de patiënt dreigt te verslechteren en dat de patiënt in veel gevallen niet naar het ziekenhuis moet, dus dan is de patiënt stabielere en meer thuis en ligt ie minder in het ziekenhuis. Wat we eigenlijk zeggen is dat het huidige zorgpad niet altijd het beste is voor de patiënten, als je daar technologie in introduceert kan dat een enorme verlichting opleveren. En die verlichting bestaat uit minder naar het ziekenhuis. Wij hebben dit getest op hele zieke mensen, een groep hartfalen patiënten. Als je die voor een check-up naar het ziekenhuis laat komen, dan zijn ze daar eigenlijk de hele dag mee bezig en zijn dan kapot. En als dat niet nodig is waarom zou je dat dan doen, daar begint het mee. Daarnaast is het zo dat ze door die technologie elke dag “gezien” worden door de specialist, maar dan op afstand.”

Dergelijke oplossing bestaan er naar weten al enige tijd, maar waarom zien we dergelijke middelen nog niet bij de betreffende doelgroepen, want dit zou dan toch een ideale oplossing zijn voor deze groep mensen?

Dhr. Van der Vorst: “Dat is het, maar het is strijdig met het verdienmodel. Dus, dat is lastig, want je praat hier over principes en vaste lasten, en een arts verdient meer aan een zieke patiënt dan aan een gezonde patiënt. Dat klinkt boosaardig maar zo bedoel ik het niet. Dus, daar hebben we al heel veel tijd in gestoken om dat te perfectioneren en waar wij nu toe in staat zijn zelfs, is op basis van de data die we hebben over de afgelopen 10 jaar te voorspellen hoe groot de kans is dat iemand gaat exacerberen in het aankomende jaar. Wij zijn dus al zover dat we op basis van algoritmes van te voren kunnen ingrijpen”.

Dhr. Van der Vorst: “Ik wil je trouwens ook nog even wat vertellen over dat MEDIDO. Het zou kunnen zijn dat als je naar zo’n medicatieplatform kijkt je gewoon hele praktische dingen over het hoofd ziet. Als iemand een indicatie krijgt van handmatige aanreiking.. zo heet dat.. dan ben je blijkbaar cognitief niet meer in staat om.. ja sommige hebben wel 10 of 20 verschillende pillen op een dag en dan is dat voor sommige ouderen bijzonder lastig bij te houden, voor een jong gezond mens is dat niet te bevatten, maar als je wat ouder wordt dan is 2 pilletjes soms al een probleem, want je weet gewoon niet meer of je hem hebt ingenomen. Het is dus heel belangrijk dat je op een of andere manier compliant bent aan de therapie en dat een ander dat ook kan zien of je daarbij kan helpen. Dat platform is er dus voor bedoeld om mensen met die achteruitgang in de cognitiviteit om die te ondersteunen. Nou hebben we in Nederland een prachtig gestandaardiseerd fenomeen, de medicijnrol. Dat is een doosje van de apotheek met daarin opgerold een hele lange strook met zakjes en in elk zakje zit de medicatie voor een bepaald moment van de dag. Als iemand nog bij de tijd is kan die zelf dat nog wel kan doen, maar er komt een moment dat niet meer gaat dus het is handig dat een kastje die zakjes omhult en die pillen aanbiedt. Dan piept dat ding, en druk je op een knop. Dan komt dat medicijn eruit en wordt automatisch opengesneden en afgesneden, want schaar gebruiken is meestal ook een hele opgave. Is het nou zo dat de ouderen niet antwoorden op het gepiep van het apparaat, dan herhaalt dat apparaat het en na enkele keren dan belt hij uit naar de zoon of dochter of naar de centrale en die gaat dan naar de huistelefoon van de ouderen bellen. Als daar niet op wordt gereageerd wordt de thuiszorg ingeschakeld. Het neveneffect van dit platformpje is dat de arts heel goed kan zien of iemand compliant is. En hij kan, als je daar nog iets aan toevoegt, namelijk de feedback van totale waarden, dat de arts kan zien of de medicatie aanslaat. En of het misschien op afstand misschien getrajeerd kan worden, dus beetje meer of beetje minder. Heel praktisch gezien betekent dat ook dat er niet meer 6 keer per dag iemand van de thuiszorg op de stoep hoeft te staan. Dat betekent dus zo’n 2000 bezoeken van thuiszorghulpen per jaar. En je begrijpt dat is niet iedere keer dezelfde, je krijgt vaak vreemde gezichten en niet altijd een vaste. Het is maar net wie er dienst heeft.”